Appendix G: Material Safety Data Sheets

Product Name	Manufacturer Name
3M DP-810, 200 ml (3M(TM) Scotch-Weld(TM) Low Odor Acrylic Adhesive DP-810)	3M
3M™ Novec ™ 1230 Fire Protection Fluid	3M
Acetone	Borup Kemi I/S
Aerosol NC	Peter Kwasny Gmbh
ALEXIT WISCHFÜLLER 491-20 7808	Mankiewicz Gebr. & co.
ALEXIT-Decklack 402-40 RAL 5003 saphirblau	Mankiewicz Gebr. & Co.
Alexit-Zusatz / Hardener 495-20	Mankiewicz-Coatings LLC
Ampreg 21 Fast Hardener	GURIT (UK) LTD
Araldite 2010-1	Huntsman Advanced Materials
Araldite 2021B	Huntsman Advanced Materials
Araldite AV 4076-1	Huntsman Advanced Materials
Benzin Blyfri 95	YX Energy A/S (Texaco)
Brakleen Brake Parts Cleaner - Non-Chlorinated (Aerosol)	CRC Industries
CondorLube Wire & Chain Spray	Carl Stahl Câble SÂRL
Cutting fluid 11931	Ridge Tool Europe
D.E.R. 330 epoxy resin	DOW
Diesel - gasoline	YX Energy A/S (Texaco)
Diestone DLS - Satwipes / Prosat / Socowipes	Socomor
Dow Corning 7091 Adhesive Sealant Black	DOW
DOW CORNING(R) 7091 ADHESIVE SEALANT GRAY (silicone)	DOW
Dowcal 10 Heat Transfer Fluid	DOW
Econostitch	Airtech International. Inc.
EFASPRAY 0790	Esbjerg Farve & Lakfabrik A/S
Epilox A 18-00	LEUNA-HARZE GmbH
Epilox Harder M1093	Leuna Harze
Epilox M996	Leuna-Harze
Fibre Glass, Continuous Filament	PPG Industries Inc.
Flugrostentferner RL Nr. 23 (Rust film remover)	Tegee-Chemie Bremen GmbH
Hardener HV 5309-1	Huntsman Advanced Materials
Harpix cloths (resin)	Orapi Applied Limited
Hempadur Uniq 4774N	Hempel
Hempathane HS 5561P	Hempel
Hempel's Zinc Primer 16490	Hempel Coatings USA Inc.
HexPly M9.1 Prepreg	Hexcel Composites GmbH & Co.KG
HexPly M9.6, M9.6LT Prepeg	Hexcel Composites GmbH & Co.KG
Husholdningssprit 93%	Borup Kemi I/S
Intercryl 525	International Paint
Intercryl 700	International Paint
Interplus 356 Part A	International Paint
Interplus 356 Part B	International Paint
Interthane 990 Light Grey part A	International Paint
Interzone 954 part A	International Paint
Interzone 954 Part B	International Paint
IPA 70/30 - Satwipes / Prosat / Socosat	Socomor
Isopropanol 10%	Idekemi ApS
Kalk- & Rustfjerner (Calcium magnesium oxide (French chalk))	Borup Kemi I/S
KD-Check SD-1; Aerosol; Art. Nr. 9903.1	Altest NDT Udstyr ApS
Kema EL-K80 Kontaktrens Spray	ITW
Kema ELS-33 El-isol	ITW
Kema FS-35A Freeze Spray	ITW
Kema FW-1661 Leak Detector Spray	ITW
Kema GM-12 Sliding Agent Spray	ITW
Kema RAL-farver	ITW
Kema ZN-595 Zinc spray	ITW Chemical Products Scandinavia
Klüberplex AG 11-462	Klüber Lubrication
Klüberplex BEM 41-141	Klüber Lubrication
Klübersynth GEM 4-220N	Klüber Lubrication
Loctite 243	Henkel
Loctite 270	Henkel
Loctite 272	Henkel
Loctite 401	Henkel
Loctite 577	Henkel
Loctite 638	Henkel
Loctite 641	Henkel
Loctite 7063	Henkel

Product Name	Manufacturer Name
Loctite 7240	Henkel
Mobil Aero HF	Exxon Mobil
Mobil Glygoyle 11	Exxon Mobil
Mobil Glygoyle 30	Exxon Mobil
Mobil Glygoyle HE 320	Exxon Mobil
MOBIL SHC 630	Exxon Mobil
MOBILGEAR SHC 220	Exxon Mobil
MOBILITH SHC 220	Exxon Mobil
Multiaxial fabrics constructed from e-glass fibre for composite products.	Devold AMT AS
NEV-SZ REG NS160	BOSTIK
Oldopal Klebeharz 0588	BUFA Reaktionsharze GmbH&Co. KG
Optimat Carbon Veil	PRF Composite Materials
Optimol Optipit	Castrol
Optirens	North Clean Technology APS
Oxsilan MM-0705	Chemetall GmbH
Panex Carbon Fiber	Zoltek Companies, Inc.
Polyspeed Laminates	Hexcel Composites GmbH & Co.KG
Pyrostop 6, SF6	Inventec SA
RANDO HDZ LT 32	TEXACO
Rensebenzin	Borup Kemi I/S
ROCOL RTD LIQUID SKÆREOLIE	ITW
RTD Compound	Rocol Limited
Shell Tellus S4 VX 32	Shell
Shell Tivela Oil S 320	Shell
Shell Transaxle Oil 75W-90	Shell
SikaForce-7010	Sika
SikaForce-7020 (B)	Sika
SikaForce-7311 L45 GR Part A	Sika
SikaForce-7321 L30	Sika
SikaForce-7720 L105 Part A	Sika
SikaForce-7812 L7 MR	Sika
Sikaforce-7815	Sika
Sikasil Gasket	Sika
SP 4910 Resin RAL7035	GURIT (UK) LTD
SP 8565 Hardener	GURIT (UK) LTD
SP 9435	GURIT (UK) LTD
Spabond 730 Hardener	GURIT (UK) LTD
Spabond 730 Resin	GURIT (UK) LTD
Synlube CLP 320	YX Energy A/S (Texaco)
Texaco Pinnacle WM 320	Chevron
Tribol 1510/150	Deutsche BP AG, Geschäftsbereich Schmierstoffe
Tribol 1510/460	Castrol
Tribol 1510/680	BP
Tribol 1710/320	BP
Tygavac WL3900R	Tygavac Advanced Materials Ltd
Ultimeg 2020 Base	A.E.V. Plc / Advanced Electrical Varnishes
Ultimeg 2020 Hardener	A.E.V. Plc / Advanced Electrical Varnishes
VIP PS Tape	Richmond Aircraft Products
WD-40 Aerosol	WD-40 Company
Wemaplast 405-V base	WEMA
Wemaplast Härter 405-VS	WEMA
White Oil Pharmaceutical 240	HYDRO TEXACO A/S

Material Safety Data Sheet

PRODUCT NAME: 3M(TM) Scotch-Weld(TM) Low Odor Acrylic Adhesive DP-810
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes

ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 01/12/2004
Supercedes Date: 01/08/2003

Document Group: 08-6267-2

ID Number(s):
62-3298-1430-5, 62-3298-1435-4, 62-3298-3530-0, 62-3298-3830-4, 62-3298-6830-1

This product is a kit or a multipart product which consists of multiple, independently packaged components. An MSDS for each of these components is included. Please do not separate the component MSDSs from this cover page. The document numbers of the MSDSs for components of this product are:

08-6252-4, 08-6239-1

Revision Changes:
Copyright was modified.
Page Heading: Product name was modified.
Kit: Product name was modified.
Kit: Division name was modified.
Kit: ID number(s) was modified.

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Safety Data Sheet

Document Group:	08-6252-4	**Version Number:**	15.00
Issue Date:	03/24/16	**Supercedes Date:**	04/16/15

SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Low Odor Acrylic Adhesive DP810 Tan and Low Odor Acrylic Adhesive 810 Tan, Part A

Product Identification Numbers
62-3398-8730-9

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division International Operations
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Serious Eye Damage/Irritation: Category 1.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion | Exclamation mark | Health Hazard |

Pictograms

Hazard Statements
Causes serious eye damage.
Causes skin irritation.
May cause an allergic skin reaction.

Causes damage to organs through prolonged or repeated exposure:
nervous system |
respiratory system |

Precautionary Statements

Prevention:
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Wash with plenty of soap and water.
Immediately call a POISON CENTER or doctor/physician.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Get medical advice/attention if you feel unwell.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified
None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
PHENOXYETHYL METHACRYLATE	10595-06-9	10 - 40 Trade Secret *
2-HYDROXYETHYL METHACRYLATE	868-77-9	10 - 30 Trade Secret *
2-HYDROXYPROPYL METHACRYLATE	923-26-2	10 - 30 Trade Secret *
ACRYLATE OLIGOMER	41637-38-1	5 - 20 Trade Secret *
ACRYLONITRILE-BUTADIENE POLYMER	9010-81-5	5 - 20 Trade Secret *
CUMENE HYDROPEROXIDE	80-15-9	< 5 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent

material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
CUMENE HYDROPEROXIDE	80-15-9	AIHA	TWA:6 mg/m3(1 ppm)	Skin Notation

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Full Face Shield
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Butyl Rubber

Fluoroelastomer

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Paste
Odor, Color, Grade:	white, low odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	>=217 ºF
Flash Point	216 ºF [*Test Method:* Closed Cup]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=0.1 mmHg
Vapor Density	*Not Applicable*
Density	1.07 g/ml
Specific Gravity	1.07 [*Ref Std:* WATER=1]
Solubility in Water	Slight (less than 10%)
Solubility- non-water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	20,000 centipoise
Hazardous Air Pollutants	< 40 % weight [*Test Method:* Calculated]
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	3.1 g/l [*Details:* when used as intended with Part B]
VOC Less H2O & Exempt Solvents	0.3 % [*Details:* when used as intended with Part B]
VOC Less H2O & Exempt Solvents	349 g/l [*Test Method:* tested per EPA method 24] [*Details:* as supplied]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization may occur.

10.4. Conditions to avoid

Heat
Sparks and/or flames
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5. Incompatible materials
Amines
Reducing agents
Reactive metals

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
May be harmful if inhaled.
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.
Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:
Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion:
May be harmful if swallowed.
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE 20 - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
PHENOXYETHYL METHACRYLATE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE	Ingestion	Rat	LD50 5,564 mg/kg
ACRYLONITRILE-BUTADIENE POLYMER	Dermal		LD50 estimated to be > 5,000 mg/kg
ACRYLONITRILE-BUTADIENE POLYMER	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
2-HYDROXYPROPYL METHACRYLATE	Ingestion	Rat	LD50 > 2,000 mg/kg
ACRYLATE OLIGOMER	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
ACRYLATE OLIGOMER	Ingestion	Rat	LD50 > 2,000 mg/kg
CUMENE HYDROPEROXIDE	Dermal	Rat	LD50 500 mg/kg
CUMENE HYDROPEROXIDE	Inhalation-Vapor (4 hours)	Rat	LC50 1.4 mg/l
CUMENE HYDROPEROXIDE	Ingestion	Rat	LD50 382 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
PHENOXYETHYL METHACRYLATE	similar compounds	Irritant
2-HYDROXYETHYL METHACRYLATE	Rabbit	Minimal irritation
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation
CUMENE HYDROPEROXIDE	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
PHENOXYETHYL METHACRYLATE	similar compounds	Severe irritant
2-HYDROXYETHYL METHACRYLATE	Rabbit	Moderate irritant
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation
CUMENE HYDROPEROXIDE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE	Human and animal	Sensitizing
ACRYLATE OLIGOMER	Guinea pig	Not sensitizing

Respiratory Sensitization
For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
PHENOXYETHYL METHACRYLATE	In Vitro	Not mutagenic
2-HYDROXYETHYL METHACRYLATE	In vivo	Not mutagenic
2-HYDROXYETHYL METHACRYLATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
ACRYLATE OLIGOMER	In Vitro	Not mutagenic
CUMENE HYDROPEROXIDE	In vivo	Not mutagenic
CUMENE HYDROPEROXIDE	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity
For the component/components, either no data are currently available or the data are not sufficient for classification.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
CUMENE HYDROPEROXIDE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	occupational exposure
CUMENE HYDROPEROXIDE	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
CUMENE HYDROPEROXIDE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
CUMENE HYDROPEROXIDE	Inhalation	nervous system | respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.2 mg/l	7 days
CUMENE HYDROPEROXIDE	Inhalation	heart | liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.03 mg/l	90 days

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
PHENOXYETHYL METHACRYLATE (GLYCOL ETHERS)	10595-06-9	10 - 40
CUMENE HYDROPEROXIDE	80-15-9	Trade Secret < 5

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 1 **Instability:** 1 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Safety Data Sheet

Document Group:	08-6239-1	**Version Number:**	19.00
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SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Low Odor Acrylic Adhesive DP810 Tan and Low Odor Acrylic Adhesive 810 Tan, Part B

Product Identification Numbers
62-3298-8730-1

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division International Operations
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.

2.2. Label elements
Signal word
Warning

Symbols
Exclamation mark |

Pictograms

Hazard Statements
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.

Precautionary Statements

Prevention:
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified
None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
PHENOXYETHYL METHACRYLATE	10595-06-9	10 - 40 Trade Secret *
2-HYDROXYETHYL METHACRYLATE	868-77-9	10 - 30 Trade Secret *
2-HYDROXYPROPYL METHACRYLATE	923-26-2	10 - 30 Trade Secret *
ACRYLATE OLIGOMER	41637-38-1	5 - 20 Trade Secret *
ACRYLONITRILE-BUTADIENE POLYMER	9010-81-5	5 - 20 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop,

get medical attention.

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
No occupational exposure limit values exist for any of the components listed in Section 3 of this SDS.

8.2. Exposure controls

8.2.1. Engineering controls
No engineering controls required.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Butyl Rubber
Fluoroelastomer
Neoprene

Respiratory protection
None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Paste
Odor, Color, Grade:	slight fragrance, green
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	> 93 ºC
Flash Point	> 200 ºF [*Test Method:* Closed Cup]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable

Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=0.1 mmHg
Vapor Density	*No Data Available*
Density	1.07 g/ml
Specific Gravity	1.07 [*Ref Std:* WATER=1]
Solubility in Water	Slight (less than 10%)
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	20,000 centipoise
Hazardous Air Pollutants	< 40 % weight [*Test Method:* Calculated]
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	3.1 g/l [*Details:* when used as intended with Part A]
VOC Less H2O & Exempt Solvents	0.3 % [*Details:* when used as intended with Part A]
VOC Less H2O & Exempt Solvents	319 g/l [*Test Method:* tested per EPA method 24] [*Details:* as supplied]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization may occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5. Incompatible materials
Amines
Reducing agents
Reactive metals

10.6. Hazardous decomposition products

Substance	**Condition**
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be

relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
No health effects are expected.

Skin Contact:
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.
Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:
May be harmful if swallowed.
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
PHENOXYETHYL METHACRYLATE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE	Ingestion	Rat	LD50 5,564 mg/kg
ACRYLONITRILE-BUTADIENE POLYMER	Dermal		LD50 estimated to be > 5,000 mg/kg
ACRYLONITRILE-BUTADIENE POLYMER	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
2-HYDROXYPROPYL METHACRYLATE	Ingestion	Rat	LD50 > 2,000 mg/kg
ACRYLATE OLIGOMER	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
ACRYLATE OLIGOMER	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
PHENOXYETHYL METHACRYLATE	similar compounds	Irritant
2-HYDROXYETHYL METHACRYLATE	Rabbit	Minimal irritation
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value

PHENOXYETHYL METHACRYLATE	similar compounds	Severe irritant
2-HYDROXYETHYL METHACRYLATE	Rabbit	Moderate irritant
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation

Skin Sensitization

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE	Human and animal	Sensitizing
ACRYLATE OLIGOMER	Guinea pig	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
PHENOXYETHYL METHACRYLATE	In Vitro	Not mutagenic
2-HYDROXYETHYL METHACRYLATE	In vivo	Not mutagenic
2-HYDROXYETHYL METHACRYLATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
ACRYLATE OLIGOMER	In Vitro	Not mutagenic

Carcinogenicity

For the component/components, either no data are currently available or the data are not sufficient for classification.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

For the component/components, either no data are currently available or the data are not sufficient for classification.

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
PHENOXYETHYL METHACRYLATE (GLYCOL ETHERS)	10595-06-9	10 - 40

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Safety Data Sheet

Document Group:	16-3425-2	**Version Number:**	28.02
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SECTION 1: Identification

1.1. Product identifier
3M™ Novec ™ 1230 Fire Protection Fluid [FK-5-1-12]

Product Identification Numbers
98-0212-3203-2, 98-0212-3217-2, 98-0212-3414-5

1.2. Recommended use and restrictions on use

Recommended use
Streaming and Flooding Fire Protection

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Electronics Materials Solutions Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements
Signal word
Not applicable.

Symbols
Not applicable.

Pictograms
Not applicable.

2.3. Hazards not otherwise classified
None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	> 99.5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you are concerned, get medical advice.

Skin Contact:
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Product is a fire-extinguishing agent. Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Toxic Vapor/Gas	During Combustion

5.3. Special protective actions for fire-fighters
When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation

to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Contents may be under pressure, open carefully. Do not breathe thermal decomposition products. For industrial or professional use only. Do not use in a confined area with minimal air exchange. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities
Protect from sunlight. Store in a well-ventilated place. Store at temperatures not exceeding 38C/100F Store away from strong bases. Store away from other materials. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	Manufacturer determined	TWA:150 ppm(1940 mg/m3)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Eye protection not required.

Skin/hand protection
No protective gloves required.

Respiratory protection

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection. If thermal degradation products are expected, use a full facepiece supplied-air respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Liquid
Odor, Color, Grade:	Clear colorless liquid with low odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	-108 ºC
Boiling Point	49 ºC [@ 760 mmHg]
Flash Point	No flash point
Evaporation rate	> 1 [*Ref Std:* BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	None detected
Flammable Limits(UEL)	None detected
Vapor Pressure	40.4 kPa [@ 25 ºC]
Vapor Density	11.6 [*Ref Std:* AIR=1]
Specific Gravity	1.6 [@ 68 ºF] [*Ref Std:* WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Viscosity	0.6 centipoise [@ 25 ºC]
Volatile Organic Compounds	1600 g/l [*Test Method:* calculated SCAQMD rule 443.1]
Percent volatile	100 %
VOC Less H2O & Exempt Solvents	1600 g/l [*Test Method:* calculated SCAQMD rule 443.1]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Light

10.5. Incompatible materials
Strong bases
Amines
Alcohols

10.6. Hazardous decomposition products

Substance	Condition
Hydrogen Fluoride	At Elevated Temperatures - extreme conditions of heat

Refer to section 5.2 for hazardous decomposition products during combustion.

If the product is exposed to extreme condition of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur. Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
No known health effects.

Skin Contact:
Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:
Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:
May be harmful if swallowed.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Dermal	Rat	LD50 > 2,000 mg/kg
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation-Vapor (4 hours)	Rat	LC50 > 1,227 mg/l
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Guinea pig	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	In Vitro	Not mutagenic
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	In vivo	Not mutagenic

Carcinogenicity

For the component/components, either no data are currently available or the data are not sufficient for classification.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	Not toxic to female reproduction	Rat	NOAEL 3,000 ppm	premating & during gestation
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	Not toxic to male reproduction	Rat	NOAEL 3,000 ppm	premating & during gestation
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	Not toxic to development	Rat	NOAEL 3,000 ppm	premating & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	nervous system	All data are negative	Rat	NOAEL 100,000 ppm	2 hours
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	cardiac sensitization	All data are negative	Dog	Sensitization Negative	17 minutes

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-	Inhalation	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for	Rat	NOAEL 3,000 ppm	90 days

(trifluoromethyl)-3-pentanone			classification			
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	heart | endocrine system | hematopoietic system | muscles | nervous system | respiratory system | vascular system	All data are negative	Rat	NOAEL 3,000 ppm	90 days

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Test Organism	Test Type	Result
Green algae, Selenastrum capricornutum	72 hours Effect Concentration 50%	7.7 mg/l
Zebra Fish, Brachydanio rerio	96 hours Lethal Concentration 50%	>1200 mg/l
Water flea, Daphnia magna	48 hours Effect Concentration 50%	>1200 mg/l
Green algae, Selenastrum capricornutum	72 hours No obs Effect Conc	1.2 mg/l

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include HF. Facility must be capable of handling halogenated materials.
Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - No Delayed Hazard - No

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 0 **Instability:** 1 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification
Health: 1 **Flammability:** 0 **Physical Hazard:** 1 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING			
Trade name:	Acetone	PR-No.:	
Usage:	The product is used as a solvent and cleaning agent.		
Date:	10-01-2011	SDS Version:	1.1
Contact:	Julius Novark	E-mail:	jn@borup-kemi.dk
Company and address:	Borup Kemi I/S Bækgårdsvej 53 4140 Borup Tlf: 5756 0020 Fax: 5756 0021 www.borup-kemi.dk	Emergency telephone: Use your national or local emergency number See section 4 “First aid measures”	

2. HAZARD IDENTIFICATION						
Danger symbol:						
Signal word:	**Danger!**					
Classification:	**Eye Irrit. 2, STOT SE 3, Flam. Liq. 2**					
Risk etc.:	Highly flammable liquid and vapour. Causes serious eye irritation. May cause drowsiness or dizziness.					
Contains:	acetone. Index-no.: 606-001-00-8					
P-phrases (precautionary statements):	General:	Keep out of reach of children. If medical advice is needed, have product container or label at hand.				
	Prevention:	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.				
	Response:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.				
	Storage:	Store in a well-ventilated place.				
	Disposal:	-				
Additional warnings:	This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.					
Additional labelling:	Repeated exposure may cause skin dryness or cracking.					
Further:	Tactile warning.					
VOC	VOC_{max}:	NA	VOC_{limit}:	-	Category:	-
▼DPD/DSD Classification:	Irritating to eyes.(R36). Flammable.(R10). Repeated exposure may cause skin dryness or cracking. (R66). Vapours may cause drowsiness and dizziness.(R67).					

3. COMPOSITION/INFORMATION ON INGREDIENTS

NAME:	acetone
IDENTIFICATION NOS.:	CAS-no: 67-64-1 EC-no: 200-662-2 Index-no: 606-001-00-8
CONTENT:	95-100%
DSD CLASSIFICATION:	F; R11 Xi; R36 R66 R67
CLP CLASSIFICATION:	Flam. Liq. 2, STOT SE 3, Eye Irrit. 2 H225, H319, H336, EUH066
NOTE:	S

(*) See full text of H-phrases in chapter 16. Occupational limits are listed in section 8, if these are available.
(**)Explanation:S = Organic solvent

4. FIRST AID MEASURES

General information:	Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar. In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. The doctor can contact the Work Environment Medical Clinic at Bispebjerg Hospital, tlf. 35 31 60 60
After inhalation:	Get the injured person into fresh air. Make sure there is always someone with the injured person. Prevent shock by keeping the injured person warm and calm. If the person stops breathing, give mouth-to-mouth resuscitation. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.
After skin contact:	Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.
After eye contact:	Remove contact lenses. Flush eyes with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. Contact a doctor at once.
After swallowing:	Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.
Burning:	Pour water until the pain stops and continue for 30 minutes.
Information to medics:	Bring this safety data sheet.

5. Fire-fighting measures

Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses.

Suitable extinguishing measures:	Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.
Fire degradation products:	Carbon oxides.
Special protective equipment for fire fighting:	Wear self-contained breathing apparatus and protective clothing to prevent contact.

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6. ACCIDENTAL RELEASE MEASURES	
Personal precautions:	Avoid inhalation of vapours from waste material. Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation. See section on “Exposure checks/personal protective gear” for protective measures.
Environmental precautions:	Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. Limit spillage and collect using granulate or similar, and dispose of it in accordance with the regulations on dangerous waste. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided. See section on “Disposal” with regard to the handling of waste.
Methods for cleaning up/taking up:	Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations.

7. HANDLING AND STORAGE	
Handling:	See section on “Exposure checks/personal protective gear” for information on personal protection.
Storage temperature:	Cool and frostfree
Storage:	Must be kept in a dry, cool and ventilated place. Always store in containers of the same material as the original. Must be stored in a cool and ventilated area, away from possible sources of combustion.
Advice on protection against fire and explosion:	-

8. EXPOSURE CONTROLS/PERSONAL PROCECTION								
General recommendations:	Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom.							
Exposure scenarios:	If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.							
Exposure limits:	Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.							
Exposure controls:	Compliance with the stated exposure limits values should be checked on a regular basis. See Danish Working Environment Authority guideline, D.7.1. May 2001.							
Engineering measures:	Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.							
Hygiene measures:	Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.							
Exposure limits values:	Name	STEL (ppm)	STEL (mg/m3)	TWA (mg/m3)	TWA (ppm)	Note#	Year	Source
PNEC / DNEL	DNEL (acetone): 186 mg/kg bw/d - Exposure: Dermal - Duration: Long term DNEL (acetone): 2420 mg/m3 - Exposure: Inhalation - Duration: Short term DNEL (acetone): 1210 mg/m3 - Exposure: Inhalation - Duration: Long term DNEL (acetone): 62 mg/kg bw/d - Exposure: Oral - Duration: Long term PNEC (acetone): 10,6 mg/L - Exposure: Water - Duration: Single							
#) Explanation(s):	NA							
Adequate personal protective equipment:								

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Generally:	Insofar as the work process is covered by the Executive Order on work with coded products (Danish Working Environment Authority's Executive Order No. 302/1993), protection gear must be chosen in accordance with this. See the product's code in the section on "information on regulation".
Respiratory Equipment:	Recommended: Unassisted fresh air hose breathing apparatus, -,
Skin protection:	Special work clothing should be used.
Hand protection:	Recommended: Butylgummi. Breakthrough time: See the manufacturer's instructions
Eye protection:	Use face shield. Use safety glasses with a side shield as an alternative.
Measures to avoid environmental exposure:	Keep damming materials near the workplace. If possible collect spillage during work.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Colour:	Odour:	pH:	Density, g/cm^3:
Liquid	Colourless	Characteristic		0,79

Viscosity:

Phase changes

Melting point °C:	Boiling point °C:	Vapour pressure:
-95,3	52,2	-

Data on fire and explosion hazards

Flashpoint °C:	Ignition °C:	Self ignition °C:
-18		-

Explosive properties	Oxidizing properties
-	-

Solubility

Soluble in water	Solubility in fat	n-octanol/water coefficient
Insoluble	-	-

10. STABILITY AND REACTIVITY

Stability:	The product is stable under the conditions, noted in the section on "Handling and storage".
Conditions and materials to avoid	Strong acids, strong bases, strong oxidising agents, and strong catabolic agents.
Hazardous decomposition products	If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Substance	Art	Test	Route	Result
acetone	Rat	LC50	Inhalation	50100 mg/m3/8h

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	acetone acetone	Rabbit Rat	LD lo LD50	Dermal Oral	20 mL/kg 5800 mg/kg
Long term causes:	Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens. Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.				

12. ECOLOGICAL INFORMATION

Persistence:	Substance	Biodegradable	Test	Result
	acetone	Yes	No data available	No data available

Bioaccumulations:	Substance	Potential bioaccumulation	Test	
			LogPow	BCF
	acetone	No	-0,24	No data available

Ecotoxic effects:	Substance	Art	Test	Period	Result
	acetone acetone acetone	Fish Daphnia Algae	LC50 EC50 EC50	96 h 48 h 48 h	13000000 ug/L 23500000 ug/L 5600000-10000000 ug/L

Negative effects:	-
Mobility in soil:	No data available
Results of PBT and vPvB assessment:	No data available

13. DISPOSAL CONSIDERATIONS

The product is covered by the regulations on dangerous waste.

Waste:	EWC-code		
	20 01 13		
Other labelling:	-		
Contaminated packing:	Packaging which contains leftovers from the product must be disposed of in the same way as the product.		

14. TRANSPORT INFORMATION

This product is covered by the conventions on dangerous goods.

ADR/RID	UN-nr.	Proper Shipping Name	Class	PG*	Notes

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	1090	ACETONE	3	II	

IMDG	UN-no.	Proper Shipping Name	Class	PG*	EmS	MP	Hazardous constituent
	1090	Acetone	3	II	F-E, S-D		

* Packing group

2033010169, Borup Kemi I/S15. REGULATORY INFORMATION	
Restrictions for application:	People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. For exceptions, see the Danish Working Environment Authority's Executive Order No. 239 of 6 April 2005.
Demands for specific education:	No specific requirements.
Chemical safety assessment:	No

16. OTHER INFORMATION

Sources:	EC regulation 1907/2006 (REACH) Directive 2000/532/EC EC Regulation 1272/2008 (CLP)
Full text of R-phrases as mentioned in section 3:	EUH066 - Repeated exposure may cause skin dryness or cracking. H336 - May cause drowsiness or dizziness. H319 - Causes serious eye irritation. H225 - Highly flammable liquid and vapour.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

This safety data sheet is based on available information/data at the time of the preparation.

Safety data sheet is validated by:	TS
Date of last essential change (First cipher in SDS version)	05-01-2011 15:04:00
Date of last minor change (Last cipher in SDS version)	05-01-2011 15:04:00

SAFETY DATA SHEET

1. Identification

Product identifier	**Belton RAL Aerosoles**
Other means of identification	None.
Recommended use	On Metal objects.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer	HC Farver A/S
Address	Lucernevej 75, 8920 Randers NV
Country	Denmark
Telephone number	0045 - 86438500
Contact person	Rune Hauge
E-mail	RH hcfarver.dk
Emergency telephone number	0045-86438500

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (Central nervous system, Liver, Kidney)

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Extremely flammable aerosol. Pressurized container: May burst if heated. Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. May cause drowsiness or dizziness. May cause damage to organs (Central nervous system, Liver, Kidney) through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Response If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water/. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor// if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	25-50
Butane	106-97-8	10-25
Nitrocellulose	9004-70-0	5-10
Propane	74-98-6	5-10
ylene	1330-20-7	5-10
n-Butyl acetate	123-86-4	5-10
2-Methoxy-1-methylethyl acetate	108-65-6	2.5-5.0
Ethanol	64-17-5	2.5-5.0
Methyl isobutyl ketone	108-10-1	2.5-5.0

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention.

Ingestion In the unlikely event of swallowing contact a physician or poison control center.

Most important symptoms/effects, acute and delayed May cause drowsiness and dizziness. Headache. Severe eye irritation. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed Treat symptomatically. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Contents under pressure. Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.

General fire hazards Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Do not breathe vapors, aerosols. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Scoop up used absorbent into drums or other appropriate container. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Aerosol containers should not be dumped in nature. Aerosol containers should be disposed of in accordance with applicable federal, state, and local regulations.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not re-use empty containers. Do not breathe vapors, aerosols. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3
		1000 ppm
Ethanol (CAS 64-17-5)	PEL	1900 mg/m3
		1000 ppm
Methyl isobutyl ketone (CAS 108-10-1)	PEL	410 mg/m3
		100 ppm
n-Butyl acetate (CAS 123-86-4)	PEL	710 mg/m3
		150 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3
		1000 ppm
ylene (CAS 1330-20-7)	PEL	435 mg/m3
		100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Methyl isobutyl ketone (CAS 108-10-1)	STEL	75 ppm
	TWA	20 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	200 ppm
	TWA	150 ppm
ylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Ethanol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm
Methyl isobutyl ketone (CAS 108-10-1)	STEL	300 mg/m3
		75 ppm
	TWA	205 mg/m3
		50 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	950 mg/m3
		200 ppm
	TWA	710 mg/m3
		150 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
ylene (CAS 1330-20-7)	STEL	655 mg/m3
		150 ppm
	TWA	435 mg/m3
		100 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
2-Methoxy-1-methylethyl acetate (CAS 108-65-6)	TWA	50 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	
Methyl isobutyl ketone (CAS 108-10-1)	1 mg/l	Methyl isobutyl ketone	Urine	
ylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	

- For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

2-Methoxy-1-methylethyl acetate (CAS 108-65-6) Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Aerosol.
Color	Various.
Odor	Characteristic.
Odor threshold	Not available.
pH	Not determined.
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not available.
Flash point	32.0 °F (0 °C) (Without propellant gas)
Evaporation rate	Not available.
Flammability (solid, gas)	Extremely flammable aerosol.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	1.5
Explosive limit - upper (%)	13
Vapor pressure	3600 hPa (20°C)
Vapor density	Not determined.
Relative density	Not determined.
Solubility(ies)	
Solubility (water)	Immiscible in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	689 °F (365 °C)
Decomposition temperature	Not determined.
Viscosity	Not determined.
Other information	Solid content: 17.3 % Organic solvents content: 82.7 %
Density	Not determined.
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.

Possibility of hazardous reactions	Aerosol containers can explode when heated, due to excessive pressure build-up.
Conditions to avoid	Aerosol containers are unstable at temperatures above 50°C. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Strong acids. Alkalis.
Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Not likely, due to the form of the product.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Severe eye irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
2-Methoxy-1-methylethyl acetate (CAS 108-65-6)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	> 8532 mg/kg
Acetone (CAS 67-64-1)		
Acute		
Dermal		
LD50	Rabbit	> 15700 mg/kg, 24 Hours
Inhalation		
LC50	Rat	76 mg/l, 4 Hours
Oral		
LD50	Rat	5800 mg/kg
Ethanol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Mouse	39 g/m3, 4 Hours
Oral		
LD50	Rat	7000 - 11000 mg/kg
n-Butyl acetate (CAS 123-86-4)		
Acute		
Inhalation		
LC50	Rat	2000 ppm, 4 Hours
Oral		
LD50	Rat	10768 mg/kg
Propane (CAS 74-98-6)		
Acute		
Inhalation		
LC50	Rat	1355 mg/l

Components	Species	Test Results
ylene (CAS 1330-20-7)		
Acute		
Oral		
LD50	Rat	3523 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Due to partial or complete lack of data the classification is not possible.

Skin sensitization Due to partial or complete lack of data the classification is not possible.

Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Methyl isobutyl ketone (CAS 108-10-1)	2B Possibly carcinogenic to humans.
ylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (Central nervous system, Liver, Kidney) through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Organic solvents may be absorbed into the body by inhalation and cause permanent damage to the nervous system, including the brain.

Further information No data available.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
2-Methoxy-1-methylethyl acetate (CAS 108-65-6)			
Aquatic			
Acute			
Fish	LC50	Oryzias latipes	> 100 mg/l, 96 hours
Acetone (CAS 67-64-1)			
Aquatic			
Acute			
Crustacea	LC50	Daphnia	8800 mg/l, 48 Hours
Fish	LC50	Pimephales promelas	7163 mg/l, 96 Hours
Ethanol (CAS 64-17-5)			
Aquatic			
Acute			
Crustacea	LC50	Ceriodaphnia dubia	5012 mg/l, 48 hours
		Daphnia magna	454 mg/l, 11 days
Fish	LC50	Pimephales promelas	13480 mg/l, 96 hours
Chronic			
Crustacea	NOEC	Ceriodaphnia dubia	9.6 mg/l, 10 days

Components		Species	Test Results
ylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.6 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Ethanol (CAS 64-17-5)	-0.31
ylene (CAS 1330-20-7)	3.2

Mobility in soil No data available.

Mobility in general The product is immiscible with water and will spread on the water surface.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Professional users should carefully puncture used aerosol containers to release any residual gas, before recycling or disposal along with other trade waste. Leaking aerosols should be placed immediately in a well-ventilated area until leakage has stopped, after which it should be disposed of as above. Empty aerosol containers are safe for disposal along with normal domestic refuse (special arrangements may apply locally). Since aerosols are designated as "hazardous waste" they may only be returned to a supplier who holds an appropriate waste handling licence.

Hazardous waste code Empty aerosol containers before disposal.
D001: Waste Flammable material with a flash point 140 F

Waste from residues / unused products Professional users should carefully puncture used aerosol containers to release any residual gas, before recycling or disposal along with other trade waste. Leaking aerosols should be placed immediately in a well-ventilated area until leakage has stopped, after which it should be disposed of as above. Empty aerosol containers are safe for disposal along with normal domestic refuse (special arrangements may apply locally). Since aerosols are designated as "hazardous waste" they may only be returned to a supplier who holds an appropriate waste handling licence.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number UN1950
UN proper shipping name Aerosols
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Label(s) 2.1
Packing group Not applicable.
Environmental hazards
Marine pollutant No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packaging exceptions 306
Packaging non bulk None
Packaging bulk None

IATA

UN number UN1950
UN proper shipping name Aerosols
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Label(s) 2.1
Packing group Not applicable.

Environmental hazards No
ERG Code 10L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1950
UN proper shipping name AEROSOLS
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Label(s) 2.1
Packing group Not applicable.
Environmental hazards
Marine pollutant No
EmS F-D, S-U
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Butane (CAS 106-97-8)	LISTED
Methyl isobutyl ketone (CAS 108-10-1)	LISTED
n-Butyl acetate (CAS 123-86-4)	LISTED
Nitrocellulose (CAS 9004-70-0)	LISTED
Propane (CAS 74-98-6)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
ylene	1330-20-7	5-10
Methyl isobutyl ketone	108-10-1	2.5-5.0

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methyl isobutyl ketone (CAS 108-10-1)
ylene (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Methyl isobutyl ketone (CAS 108-10-1)	6715

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV
Methyl isobutyl ketone (CAS 108-10-1)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Methyl isobutyl ketone (CAS 108-10-1)	6715

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Butane (CAS 106-97-8)
Ethanol (CAS 64-17-5)
Methyl isobutyl ketone (CAS 108-10-1)
n-Butyl acetate (CAS 123-86-4)
Nitrocellulose (CAS 9004-70-0)
Propane (CAS 74-98-6)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)
Butane (CAS 106-97-8)
Ethanol (CAS 64-17-5)
Methyl isobutyl ketone (CAS 108-10-1)
n-Butyl acetate (CAS 123-86-4)
Nitrocellulose (CAS 9004-70-0)
Propane (CAS 74-98-6)
ylene (CAS 1330-20-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Butane (CAS 106-97-8)
Ethanol (CAS 64-17-5)
Methyl isobutyl ketone (CAS 108-10-1)
n-Butyl acetate (CAS 123-86-4)
Nitrocellulose (CAS 9004-70-0)
Propane (CAS 74-98-6)
ylene (CAS 1330-20-7)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Butane (CAS 106-97-8)
Methyl isobutyl ketone (CAS 108-10-1)
n-Butyl acetate (CAS 123-86-4)
Propane (CAS 74-98-6)
ylene (CAS 1330-20-7)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Methyl isobutyl ketone (CAS 108-10-1)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-July-2016

Revision date -

Version # 01

NFPA ratings

List of abbreviations

LD50: Lethal Dose 50%.
LC50: Lethal Concentration, 50%.
NOEC: No observed effect concentration.

References

In-house data
US. IARC Monographs on Occupational Exposures to Chemical Agents
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer

HC Farver A/S cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name	:	ALEXIT-Wischfüller 491-20 7808 achatgrau
Use of the Substance/Mixture	:	Industrial serial painting
Company	:	Mankiewicz Coatings L.L.C 415 Jessen Lane Charleston, South Carolina 29492 USA
Telephone	:	+1 843 654-7755
Emergency telephone	:	CHEMTREC 800-424-9300 or 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Caution

Form: liquid, Color: according product name, Odor: characteristic

OSHA Hazards : MODERATE EYE IRRITANT

Potential Health Effects

Inhalation	:	No hazard in normal industrial use.
Skin	:	No hazard in normal industrial use.
Eyes	:	May cause eye irritation.
Ingestion	:	May cause vomiting.

Carcinogenicity:

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture of synthetic resins and pigments

Hazardous ingredients

Component	CAS-No.	Weight %
phosphoric acid polyester(72243-070628, Germany)		1.00 - 5.00

SECTION 4. FIRST AID MEASURES

First aid procedures

General advice : In all cases of doubt, or when sickness symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation : Remove to fresh air, keep patient warm and at rest.
Call a doctor, should the air passages be affected

Skin contact : Take off all contaminated clothing immediately.
Wash skin thoroughly with soap and water or use recognised skin cleanser.
Do NOT use solvents or thinners !

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.

Ingestion : Do NOT induce vomiting.
If accidentally swallowed obtain immediate medical attention.
Never give anything by mouth to an unconscious person.
Keep at rest.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point : 374 °F (190 °C)
Method: ISO 2719

Ignition temperature : Remarks: no data available

Lower explosion limit : Remarks: no data available

Upper explosion limit : Remarks: no data available

Fire fighting

Suitable extinguishing media : Not combustible under normal conditions.
Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Further information : DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES!!

Protective equipment and precautions for firefighters

Specific hazards during fire fighting : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Special protective equipment for fire-fighters : As in any fire, wear self-contained breathing apparatus pressure - demand, MSHA / NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Take the precautions customary when handling chemicals. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not let product enter drains.
If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

Methods for containment / Methods for cleaning up : Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see chapter 13).
Clean preferably with a detergent; avoid use of solvents.

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Avoid contact with the skin and the eyes.
Comply with the health and safety at work laws.
Smoking, eating and drinking should be prohibited in the application area.
Observe specific national regulations for handling and use of paints.

Advice on protection against fire and explosion : No special protective measures against fire required.

Storage

Requirements for storage areas and containers : Keep container tightly closed. Never use pressure to empty: container isnot a pressure vessel. No smoking. Prevent unauthorized access.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Further information on storage conditions : Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and

direct sunlight.
Keep container dry in a cool, well-ventilated place.

Advice on common storage : Keep away from oxidizing agents and strongly acid or alkaline materials.

Storage temperature : 41 - 95 °F (5 - 35 °C)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Ingredients with workplace control parameters

Ingredients Source	Value	Control parameters
CYCLOHEXANONE CAS-No.108-94-1		
ACGIH	TWA	20 ppm
ACGIH	STEL	50 ppm
OSHA P1	TWA	50 ppm 200 mg/m3
OSHA P0	TWA	25 ppm 100 mg/m3

Engineering measures

Engineering measures : Provide adequate ventilation. This should be achieved by the use of local exhaust ventilation and good general extraction.

Personal protective equipment

Protective measures : Avoid product contact with skin, eyes and clothing.
Avoid the inhalation of dust from sanding, particulates and spray mist arising from the application of this preparation.

Eye protection : Use safety glasses or face shield (ANSI Z87.1 or approved equivalent).

Hand protection : Glove permeation data does not exist for this material.
The following glove(s) should be used for splash protection only:
Appropriate material: nitrile

Skin and body protection : Personal should wear protective clothing as necessary to prevent skin contact. All parts of the body should be washed after contact.

Respiratory protection : None, but avoid breathing vapors if possible.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	:	liquid
Color	:	according product name
Odor	:	characteristic

Safety data

Flash point	:	374 °F (190 °C) Method: ISO 2719
Ignition temperature	:	Remarks: no data available
Lower explosion limit	:	Note: no data available
Upper explosion limit	:	Note: no data available
Boiling point/boiling range	:	ca. 248 °F (120 °C)
Vapor pressure	:	ca. 100 hPa (75 mmHg) at 122 °F (50 °C)
Density	:	ca.15.9 lb/gal (1.9 g/cm3) at 68 °F (20 °C)
Water solubility	:	Note: insoluble
Flow time	:	> 150 s 4 mm Method: DIN 53211

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Remarks: Stable under recommended storage and handling conditions (See section 7).
Materials to avoid	:	Remarks: Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.
Hazardous decomposition products	:	Note: No hazardous decomposition products known.

SECTION 11. TOXICOLOGICAL INFORMATION

Further information	:	Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage.

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : There are no data available on the preparation itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

DOT
Not dangerous goods

IATA
Not dangerous goods

IMDG
Not dangerous goods

Other information : If transported within the user's premises: To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Moderate eye irritant

TSCA Status : y (positive listing)
All of the components of this product are either listed in the TSCA inventory or are not subject to the notification requirements(exempt).

SARA 311/312 Hazards : Acute Health Hazard

Clean Air Act Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

SARA 302 Reportable Quantity : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

US CAA HAP This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

CAA112(r) This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

CAA111

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

US Federal Regulations

Volatile organic compounds (VOC) content : VOC content excluding water:
0.01 lb/gal (0.00 g/cm3)

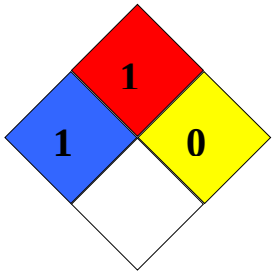
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

Further information

HMIS Classification : Health Hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Classification : Health Hazard: 1
Fire Hazard: 1
Reactivity Hazard: 0



Department issuing safety data sheet

UMCO Umwelt Consult GmbH
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The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : ALEXIT-Decklack 402-40 RAL 5003 saphirblau seidenglänzend

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Industrial serial painting

1.3 Details of the supplier of the safety data sheet

Company : Mankiewicz Gebr. & Co.
(GmbH & Co. KG)
Georg-Wilhelm-Straße 189
21107 Hamburg
Telephone : +4940751030
Telefax : +494075103375
E-mail address : sdb_info@umco.de

1.4 Emergency telephone number

+49 (0) 551 / 19240 (Toxic agent information centre North / NORD)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids , Category 3	H226: Flammable liquid and vapour.
Specific target organ toxicity - single exposure , Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Chronic aquatic toxicity , Category 3	H412: Harmful to aquatic life with long lasting effects.

Classification (67/548/EEC, 1999/45/EC)

Flammable	R10: Flammable.
	R66: Repeated exposure may cause skin dryness or cracking.
	R67: Vapours may cause drowsiness and dizziness.
Dangerous for the environment	R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements	:	H226	Flammable liquid and vapour.
		H336	May cause drowsiness or dizziness.
		H412	Harmful to aquatic life with long lasting effects.
Supplemental Hazard Statements	:	EUH066	Repeated exposure may cause skin dryness or cracking.
Precautionary statements	:	**Prevention:**	
		P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
		P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
		P273	Avoid release to the environment.
		Response:	
		P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
		P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
		P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Hazardous components which must be listed on the label:
123-86-4 n-butyl acetate

2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mixture of synthetic resins, organic solvents and pigments

Hazardous components

Chemical Name CAS-No. EC-No. Registration number Remarks	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
Trizincbisorthophosphate/zinc oxide mixture	N; R51/53	Aquatic Chronic 2; H411	>= 2,5 - < 5
4-hydroxy-4-methylpentan-2-one 123-42-2 204-626-7 01-2119473975-21	Xi; R36	Eye Irrit. 2; H319	>= 1 - < 5
acetylacetone 123-54-6 204-634-0	R10 Xn; R22	Flam. Liq. 3; H226 Acute Tox. 4; H302	>= 1 - < 5
xylene 1330-20-7 215-535-7 01-2119488216-32 Note C	R10 Xn; R20/21 Xi; R38	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315	>= 1 - < 5
low boiling point naphtha - unspecified 64742-95-6 265-199-0 01-2119455851-35 Note H (Table 3.1), Note P	R10 Xn; R65 Xi; R37 N; R51/53 R66 R67	Flam. Liq. 3; H226 STOT SE 3; H335, H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 0,5 - < 1
N-methyl-2-pyrrolidone 872-50-4 212-828-1 01-2119472430-46	Repr.Cat.2; R61 Xi; R36/37/38	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Repr. 1B; H360D STOT SE 3; H335	>= 0,1 - < 0,25
WEL substance :			
n-butyl acetate 123-86-4 204-658-1 01-2119485493-29	R10 R66 R67	Flam. Liq. 3; H226 STOT SE 3; H336	>= 20 - < 25

For the full text of the R-phrases mentioned in this Section, see Section 16.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : In all cases of doubt, or when sickness symptoms persist,

seek medica lattention.
Never give anything by mouth to an unconscious person.

If inhaled	:	Remove to fresh air, keep patient warm and at rest. Irregular breathing/no breathing: artificial respiration. If unconscious place in recovery position and seek medical advice.
In case of skin contact	:	Take off all contaminated clothing immediately. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners !
In case of eye contact	:	Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
If swallowed	:	Do NOT induce vomiting. If accidentally swallowed obtain immediate medical attention. Never give anything by mouth to an unconscious person. Keep at rest.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Alcohol resistant foam, CO2, powders, water spray
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
Hazardous combustion products	:	

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Appropriate breathing apparatus may be required.

Further information	:	Cool endangered containers with water in case of fire. DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES!!

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Exclude sources of ignition and ventilate the area. Do not inhale vapours. Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions	:	Do not let product enter drains. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see chapter 13). Clean preferably with a detergent; avoid use of solvents.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits. Comply with the health and safety at work laws. Smoking, eating and drinking should be prohibited in the application area. Observe specific national regulations for handling and use of paints.
Advice on protection against fire and explosion	:	The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Preparation may charge electrostatically: always use earthing leads whentransferring from one container to

another. Operators should wear anti-static footwear and clothing. No sparking tools should be used. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Electrical equipment should be protected to the appropriate standard. Floors should be of the conducting type. Keep container tightly closed. Never use pressure to empty: container isnot a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Further information on storage conditions	:	Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight. Keep container dry in a cool, well-ventilated place.
Advice on common storage	:	Keep away from oxidising agents and strongly acid or alkaline materials.
Storage temperature	:	5 - 35 °C

7.3 Specific end use(s)

Specific use(s)	:	This information is not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

CAS-No.	Source	Value	Ceiling Limit Value	Update
n-butyl acetate				
123-86-4 204-658-1	Occupational Exposure Standards (OESs) / EH40	150 ml/m3 724 mg/m3		01.09.2003
4-hydroxy-4-methylpentan-2-one				
123-42-2 204-626-7	Occupational Exposure Standards (OESs) / EH40	50 ml/m3 241 mg/m3		01.09.2003
xylene				
1330-20-7	Occupational	50 ml/m3		01.09.2003

215-535-7	Exposure Standards (OESs) / EH40	220 mg/m3		
Further information:	Sk			
1330-20-7 215-535-7	2000/39/EC	50 ml/m3 221 mg/m3		08.06.2000
Further information:	Skin			
N-methyl-2-pyrrolidone				
872-50-4 212-828-1	Occupational Exposure Standards (OESs) / EH40	25 ml/m3 103 mg/m3		01.09.2003
Further information:	Sk			

8.2 Exposure controls

Engineering measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain aerosol- and solvent vapours concentration below the OEL, suitable respiratory protection must be worn.

Personal protective equipment

Eye protection : Wear safety goggles to protect against solvent splashes.

Hand protection

Remarks : Adhere to the professional organisation rule “Use of protective gloves”. Appropriate chemicals resistant glove tested in compliance with EN 374.
Recommendation for protection against components generally found in the products:

For short-term contact (i.e. splash protection):
Appropriate material:
nitrile rubber, Neoprene
Material thickness: > 0,4 mm
Breakthrough time: > 480 min

Before use, the protective glove should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer’s instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Preventive hand protection (skin protection cream) recommended. Wash

immediately contaminated skin. Design operations thus to avoid permanent use of protective gloves.

Skin and body protection : Personal should wear antistatic clothings made of natural fiber or ofhigh temperature resistant synthetic fiber. All parts of the body shouldbe washed after contact.

Respiratory protection : If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators.
Use half-mask model with cartridge or air-fed.
Dry grinding, torch cutting and/or welding however can produce hazardous dust and/or vapour.
If possible, machine employing a wet medium.
Where practicable, install exhaust hoods to improve capture of vapours and fumes and avoid exposition; otherwise wear respiratory protection equipment.

Protective measures : Do not eat or drink during work - no smoking.
Avoid product contact with skin, eyes and clothing.
Avoid the inhalation of dust from sanding, particulates and spray mist arising from the application of this preparation.
When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed respirator during the spraying process until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.

Environmental exposure controls

General advice : Do not let product enter drains.
If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	according product name
Odour	:	characteristic
Odour Threshold	:	no data available
pH	:	no data available

Melting point/range	:	no data available
Boiling point/boiling range	:	ca. 120 °C
Flash point	:	28 °C Method: ISO 2719
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Burning rate	:	no data available
Lower explosion limit	:	1 %(V)
Upper explosion limit	:	10 %(V)
Vapour pressure	:	100 hPa at 50 °C
Relative vapor density	:	no data available
Relative density	:	no data available
Density	:	1,7 g/cm3 at 20 °C
Water solubility	:	insoluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Ignition temperature	:	> 400 °C
Thermal decomposition	:	no data available
Flow time	:	61 - 90 s Cross section: 4 mm Method: DIN 53211
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use. There are no data available on the preparation itself.

10.4 Conditions to avoid

Conditions to avoid	:	Stable under recommended storage and handling conditions (See section 7).

10.5 Incompatible materials

Materials to avoid	:	Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, oxides of nitrogen.
Other information	:	When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, oxides of nitrogen.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product:

Acute oral toxicity	:	Acute toxicity estimate : > 2.000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate : > 20 mg/l Test atmosphere: vapour Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate : > 2.000 mg/kg Method: Calculation method
Further information	:	Exposure of vapour concentration in excess of the stated

OEL's may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue muscular weakness, drowsiness and in extrem cases, loss of consciousness., Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin., The liquid splashed in the eyes may cause irritation and reversible damage.

: The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EC).

Components:

4-hydroxy-4-methylpentan-2-one, 123-42-2

Acute oral toxicity	:	LD50 rat: 4.000 mg/kg
Acute dermal toxicity	:	LD50 rabbit: 13.630 mg/kg

acetylacetone, 123-54-6

Acute oral toxicity	:	LD50 rat: 575 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 rabbit: 4.870 mg/kg
Respiratory or skin sensitization	:	Result: Did not cause sensitization on laboratory animals.

xylene, 1330-20-7

Acute oral toxicity	:	LD50 rat: 4.300 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity	:	There are no data available on the preparation itself.

12.2 Persistence and degradability

Product:

Biodegradability	:	There are no data available on the preparation itself.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	There are no data available on the preparation itself.

12.4 Mobility in soil

Product:

Mobility	:	There are no data available on the preparation itself.

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)., This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

Additional ecological information	:	There are no data available on the preparation itself. The product should not be allowed to enter drains or water courses.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	The listed waste code numbers, according to the European Waste Catalogue, are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company.
Contaminated packaging	:	Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed off in agreement with the regional waste disposal company.
Waste key for the unused product	:	080111 waste paint and varnish containing organic solvents or other dangerous substances

SECTION 14: Transport information

14.1 ADR

UN Number	:	1263
Description of the goods	:	PAINT
Class	:	3
Packaging group	:	III
Classification Code	:	F1
Hazard identification No	:	30
ADR/RID-Labels	:	3
Tunnel restriction code	:	Tunnelcode D/E Special Provision 640E
Environmentally hazardous	:	no

14.2 IMDG

Substance No.	:	UN 1263
Description of the goods	:	PAINT
Class	:	3
Packaging group	:	III
IMDG-Labels	:	3
EmS Number	:	F-E, S-E
Marine Pollutant	:	no

14.3 IATA

UN Number	:	1263
Description of the goods	:	PAINT
Class	:	3
Packaging group	:	III
ICAO-Labels	:	3
Packing instruction (cargo aircraft)	:	366
Environmentally hazardous	:	no
Packing instruction (passenger aircraft)	:	355
Packing instruction (passenger aircraft)	:	Y344

14.4 Other information

: If transported within the user's premises: To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

Receptacles with less than 450 litres capacity, are not subject to ADR (see ADR 2.2.3.1.5)

Receptacles with less than 30 litres capacity, are not subject to the regulations of IMDG chapters 4.1, 5.2 and 6.1 (see IMDG 2.3.2.5)

14.5 Environmental hazards
Information on environmental hazards, if relevant, pls. see 14.1 - 14.3.

14.6 Special precautions for user
For personal protection see section 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 1999/13/EC	:	VOC content excluding water	27 % 475 g/l
Other regulations	:	The information given in this material safety data sheet does not release the user from its duty of risk assessment and control in the work place defined in other health and safety law. Adhere to the national sanitary and occupational safety regulations when using this product.	

15.2 Chemical Safety Assessment

SECTION 16: Other information

Full text of R-Phrases

R10	Flammable.
R20/21	Harmful by inhalation and in contact with skin.
R22	Harmful if swallowed.
R36	Irritating to eyes.
R36/37/38	Irritating to eyes, respiratory system and skin.
R37	Irritating to respiratory system.
R38	Irritating to skin.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R61	May cause harm to the unborn child.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

Full text of H-Statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H360D	May damage the unborn child.
H411	Toxic to aquatic life with long lasting effects.
Acute Tox.	Acute toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.

Further information

Note C	Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.
Note H (Table 3.1)	The classification and labelling shown for this substance applies to the hazardous property(ies) indicated by the hazard statement(s) in combination with the hazard class(es) and category(ies) shown. The requirements of Article 4 for manufacturers, importers or downstream users of this substance apply to all other hazard classes and categories. For hazard classes where the route of exposure or the nature of the effects leads to a differentiation of the classification of the hazard class, the manufacturer, importer or downstream user is required to consider the routes of exposure or the nature of the effects not already considered. The final label shall follow the requirements of Article 17 and of section 1.2 of Annex I.
Note P	The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7). When the substance is not classified as a carcinogen at least the precautionary statements (P102-)P260-P262-P301 + P310-P331 (Table 3.1) or the S-phrases (2-)23-24-62 (Table 3.2) shall apply. This note applies only to certain complex oil-derived substances in Part 3.

Further information

Other information : This safety datasheet complies with the requirements of regulation (EC) No 1907/2006(453/2010).

Department issuing safety data sheet

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	:	ALEXIT-Zusatz / Hardener 495-20
Use of the Substance/Mixture	:	Industrial serial painting
Company	:	Mankiewicz Coatings L.L.C 415 Jessen Lane Charleston, South Carolina 29492 USA
Telephone	:	+1 (843) 6547755
Emergency Telephone	:	CHEMTREC +1 (800) 4249300 or +1 (703) 5273887

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Warning

Form: liquid, Color: according product name, Odor: characteristic

OSHA Hazards : TOXIC BY INHALATION.
RESPIRATORY SENSITIZER
SKIN SENSITIZER
MODERATE SKIN IRRITANT
MODERATE EYE IRRITANT
MODERATE RESPIRATORY IRRITANT
CARCINOGEN

Potential Health Effects

Inhalation	:	Harmful if inhaled. May cause allergic respiratory reaction. May cause respiratory tract irritation. Individuals with lung or breathing problems or prior reaction to isocyanates must not be exposed to vapor or spray mist.
Skin	:	May cause allergic skin reaction. May cause skin irritation.
Eyes	:	May cause eye irritation.
Ingestion	:	May cause vomiting.
Chronic Exposure	:	Suspect cancer hazard - contains material which may cause cancer.
Symptoms of Overexposure	:	No information available.

Carcinogenicity:

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. CYCLOHEXANONE 108-94-1

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Hardener based on polyisocyanates

Hazardous ingredients

Component	CAS-No.	Weight %
Diphenylmethanediisocyanate	9016-87-9	60.00 - 100.00
CYCLOHEXANONE	108-94-1	0.10 - 1.00

SECTION 4. FIRST AID MEASURES

First aid procedures

General advice : In all cases of doubt, or when sickness symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation : Remove to fresh air, keep patient warm and at rest.
Irregular breathing/no breathing: artificial respiration.
If unconscious place in recovery position and seek medical advice.

Skin contact : Take off all contaminated clothing immediately.
Wash skin thoroughly with soap and water or use recognised skin cleanser.
Do NOT use solvents or thinners !

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.

Ingestion	:	Do NOT induce vomiting. If accidentally swallowed obtain immediate medical attention. Never give anything by mouth to an unconscious person. Keep at rest.

Notes to physician

Symptoms	:	No information available.
Treatment	:	No information available.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	:	464 °F (240 °C) Method: ISO 2719
Ignition temperature	:	> 752 °F (> 400 °C)
Lower explosion limit	:	1.0 %(V)
Upper explosion limit	:	10.0 %(V)

Fire fighting

Suitable extinguishing media	:	Alcohol resistant foam, CO2, powders, water spray
Unsuitable extinguishing media	:	High volume water jet
Further information	:	Cool endangered containers with water in case of fire. DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES!!

Protective equipment and precautions for firefighters

Specific hazards during fire fighting	:	Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
Special protective equipment for fire-fighters	:	As in any fire, wear self-contained breathing apparatus pressure - demand, MSHA / NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Exclude sources of ignition and ventilate the area. Do not inhale vapors. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Do not let product enter drains. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

Add the same decontaminant to the remnants and let stand for several days until no further reaction in non-sealed container. Once this stage is reached, close container and dispose according to local regulations.

Methods for containment / Methods for cleaning up : Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see chapter 13).
Clean preferably with a detergent; avoid use of solvents.

Additional advice : Immediately clean contaminated areas with following substances:

Water	45 Vol.%
Ethanol or Isopropyl Alcohol	50 Vol.%
Ammonia solution (density=0,88)	5 Vol.%

Alternative applicable to that (not flammable):

Sodium Carbonate	5 Vol.%
Water	95 Vol.%

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used !
Prevent the creation of flammable or explosive concentrations of vapor in air and avoid vapor concentrations higher than the occupational exposure limits.
Comply with the health and safety at work laws.
Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : The product should only be used in areas from which all naked lights and other sources of ignition have been excluded.
Preparation may charge electrostatically: always use earthing leads whentransferring from one container to another.
Operators should wear anti-static footwear and clothing. No sparking tools should be used.
Vapors are heavier than air and may spread along floors.
Vapors may form explosive mixtures with air.

Storage

Requirements for storage areas and containers : Electrical equipment should be protected to the appropriate standard. Floors should be of the conducting type.
Keep container tightly closed. Never use pressure to empty: container isnot a pressure vessel. No smoking. Prevent unauthorized access.
Containers which are opened must be carefully resealed and

kept upright to prevent leakage.

Further information on storage conditions : Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight.
Keep container dry in a cool, well-ventilated place.
Precautions should be taken to minimise exposure to atmospheric humidityor water: CO2 will be formed which in closed containers can result in pressurisation. DO NOT KEEP THE CONTAINERS SEALED !!

Advice on common storage : Keep away from oxidizing agents and strongly acid or alkaline materials.

Storage temperature : 41 - 95 °F (5 - 35 °C)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Ingredients with workplace control parameters

Ingredients Source	Value	Control parameters
CYCLOHEXANONE CAS-No.108-94-1		
ACGIH	TWA	20 ppm
ACGIH	STEL	50 ppm
OSHA P1	TWA	50 ppm 200 mg/m3
OSHA P0	TWA	25 ppm 100 mg/m3

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
CYCLOHEXANONE	108-94-1	Immediately Dangerous to Life or Health Concentration Value 700 parts per million	1995-03-01

Engineering measures

Engineering measures : Provide adequate ventilation. Where reasonably practicable this shoud be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and below the OEL (= Occupational Exposure Limit), suitable respiratory protection must be worn.

Personal protective equipment

Protective measures : Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any

process in which this preparation is used.
Do not eat or drink during work - no smoking.
Avoid product contact with skin, eyes and clothing.
Avoid the inhalation of dust from sanding, particulates and spray mist arising from the application of this preparation.

Eye protection : Use safety glasses or face shield (ANSI Z87.1 or approved equivalent).

Hand protection : Glove permeation data does not exist for this material.
The following glove(s) should be used for splash protection only:
Appropriate material: nitrile

Skin and body protection : Personal should wear protective clothing as necessary to prevent skin contact. All parts of the body should be washed after contact.

Respiratory protection : By spraying: air-fed respirator(MHSA/NIOSH approved)

By other operations than spraying: in well ventilated areas, air-fed respirators could be replaced by a combination of charcoal filter and particulate filter mask(it should be MHSA/NIOSH approved).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form : liquid
Color : according product name

Odor : characteristic

Safety data

Flash point : 464 °F (240 °C)
Method: ISO 2719

Ignition temperature : > 752 °F (> 400 °C)

Lower explosion limit : 1 %(V)

Upper explosion limit : 10.0 %(V)

Boiling point/boiling range : ca. 248 °F (120 °C)

Vapor pressure : 100 hPa (75 mmHg)
at 122 °F (50 °C)

Density : 10.0 lb/gal (1.2 g/cm3)

		at 68 °F (20 °C)
Water solubility	:	Note: insoluble
Flow time	:	56 s 4 mm Method: DIN 53211

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Remarks: Stable under recommended storage and handling conditions (See section 7).
Materials to avoid	:	Remarks: Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. The product reacts slowly with water resulting in evolution of carbon dioxide. In closed containers, pressure build up could result distortion blowing and in extreme cases bursting of the container.
Hazardous decomposition products	:	Note: In a fire, hazardous decomposition products, such as smoke, carbon monoxide, carbon dioxiode, oxides of nitrogen, hydrogen cyanide, monomers of isocyanates, amines and alcohols may be produced.
Hazardous reactions	:	No dangerous reaction known under conditions of normal use. There are no data available on the preparation itself.

SECTION 11. TOXICOLOGICAL INFORMATION

Further information	:	Exposure of vapor concentration in excess of the stated OEL's may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue muscular weakness, drowsiness and in extrem cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage. Based on the properties of the isocyanate components and considering toxicological data on similar preparations: This preparation may cause acute irritation and/or sensitization of the respiratory system leading to an asthmatic condition, wheeziness and a thightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

SECTION 12. ECOLOGICAL INFORMATION

Biodegradability : Remarks:
There are no data available on the preparation itself.

Bioaccumulation : Remarks:
There are no data available on the preparation itself.

Additional ecological information : There are no data available on the preparation itself.

The product should not be allowed to enter drains or water courses.

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

DOT
Not dangerous goods

IATA
Not dangerous goods

IMDG
Not dangerous goods

Other information : If transported within the user's premises: To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Toxic by inhalation., Respiratory sensitizer, Skin sensitizer, Moderate skin irritant, Moderate eye irritant, Moderate respiratory irritant, Carcinogen

TSCA Status : y (positive listing)
All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Clean Water Act
The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
PHOSPHORIC ACID 7664-38-2

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
PHOSPHORIC ACID 7664-38-2

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

SARA 302 Reportable Quantity : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Ingredients : DIPHENYLMETHANE-4,4'-DIISOCYANATE, ISOMERES AND HOMOLOGUES 9016-87-9

US CAA HAP This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

CAA112(r) This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

CAA111 This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know Ingredients : CYCLOHEXANONE 108-94-1
PHOSPHORIC ACID 7664-38-2

New Jersey Right To Know Ingredients : DIPHENYLMETHANE-4,4'-DIISOCYANATE, ISOMERES AND HOMOLOGUES 9016-87-9

California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

US Federal Regulations

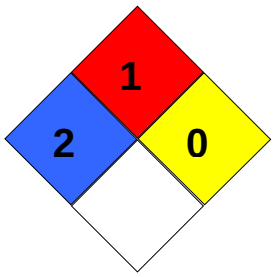
Volatile organic compounds (VOC) content : VOC content excluding water:
0.02 lb/gal (0.00 g/cm3)

SECTION 16. OTHER INFORMATION

Further information

HMIS Classification : Health Hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Classification : Health Hazard: 2
Fire Hazard: 1
Reactivity Hazard: 0



Department issuing safety data sheet

UMCO Umwelt Consult GmbH
Georg-Wilhelm-Str. 183, D-21107 Hamburg
Telefon: +49 (0)40 / 79 02 36 300 Fax: +49 (0)40 / 79 02 36 357 e-mail: umco@umco.de

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Gurit

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/06/2015 Reviewed on 05/06/2015

*

1 Identification

· **Product identifier**

· **Trade name: Ampreg 21 Fast Hardener**
· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture** Epoxy curing agent

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
.

GURIT (UK) Ltd
St. Cross Business Park
Newport I.O.W.
PO30 5WU
United Kingdom
T:+44(0)1983 828000
F:+44(0)1983 828100

GURIT (Canada) Inc.
175, rue Péladeau
Magog (Québec)
J1X 5G9
Canada
T: +1 819 847 2182
F: +1 819 847 2572

For SDS information or queries contact regulatory@gurit.com

· **Information department:** Regulatory department.
· **Emergency telephone number:** Contact as above

*

2 Hazard(s) identification

· **Classification of the substance or mixture**
· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


C; Corrosive

R34: Causes burns.


Xn; Harmful

R21/22: Harmful in contact with skin and if swallowed.


Xi; Irritant

R43: May cause sensitization by skin contact.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with directives on hazardous materials.
The product has been marked in accordance with national laws.
Observe the general safety regulations when handling chemicals.

· **Code letter and hazard designation of product:**
C Corrosive

· **Hazard-determining components of labeling:**
2-piperazin-1-ylethylamine
3,6-diazaoctanethylenediamin

· **Risk phrases:**
21/22 Harmful in contact with skin and if swallowed.
34 Causes burns.

(Contd. on page 2)

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 1)

43 May cause sensitization by skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Safety phrases:**
20 When using do not eat or drink.
23 Do not breathe vapour.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets
· **Hazard description:**
· **WHMIS classification**
B3 - Combustible liquid
D2B - Toxic material causing other toxic effects
E - Corrosive material

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 2
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 3
Fire = 2
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
140-31-8	2-piperazin-1-ylethylamine	10-30%
112-24-3	3,6-diazaoctanethylenediamin	1-5%
98-54-4	4-tert-butylphenol	1-5%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

*
4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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Safety Data Sheet
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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 2)

· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
A person vomiting while lying on their back should be turned onto their side.
Do not induce vomiting; immediately call for medical help.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

*
5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Water haze
Foam
Fire-extinguishing powder
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
· **Advice for firefighters**
· **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

*
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

*
7 Handling and storage

· **Handling:**
· **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

(Contd. on page 4)

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 3)

· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
112-24-3 3,6-diazaoctanethylenediamin (2.5-10%)	
EV	3 mg/m³, 0.5 ppm Skin

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Filter P2
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Use suitable respiratory protective device in case of insufficient ventilation.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
· **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
· **Eye protection:**

Tightly sealed goggles

(Contd. on page 5)

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 4)

· **Body protection:** Protective work clothing

*
9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Solid material
Color:	Light brown
· **Odor:**	Amine-like
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	220 °C
· **Flash point:**	88 °C
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	315 °C
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	2.1 Vol %
Upper:	10.5 Vol %
· **Vapor pressure at 20 °C:**	0.1 hPa
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic at 20 °C:	1222 mPas
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	0.0 %
Solids content:	70.7 %
· **Other information**	No further relevant information available.

*
10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 5)

· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** Danger of toxic pyrolysis products.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
140-31-8 2-piperazin-1-ylethylamine		
Oral	LD50	1470 mg/kg (rat)
Dermal	LD50	866 mg/kg (rbt)

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

*
12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Harmful to fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

(Contd. on page 7)

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 6)

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:**
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

*

14 Transport information

· **UN-Number**	
· **DOT, TDG, IMDG, IATA**	UN2735
· **UN proper shipping name**	
· **DOT**	Polyamines, liquid, corrosive, n.o.s. (N-Aminoethylpiperazine, Triethylenetetramine)
· **TDG**	2735 Polyamines, liquid, corrosive, n.o.s. (N-Aminoethylpiperazine, Triethylenetetramine)
· **IMDG, IATA**	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (N-AMINOETHYLPIPERAZINE, TRIETHYLENETETRAMINE)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	8 Corrosive substances
· **Label**	8
· **TDG, IMDG, IATA**	

· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, TDG, IMDG, IATA**	III
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Corrosive substances
· **Danger code (Kemler):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Alkalis
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 7)

· **UN "Model Regulation":** UN2735, Polyamines, liquid, corrosive, n.o.s. (N-Aminoethylpiperazine, Triethylenetetramine), 8, III

*
15 Regulatory information

· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **National regulations:**

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Classification of the substance or mixture**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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Trade name: Ampreg 21 Fast Hardener

(Contd. of page 8)

GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Department issuing MSDS:** Regulatory Affairs Department. regulatory@gurit.com
· **Contact:** regulatory@gurit.com
· **Date of preparation / last revision** 05/06/2015 / 12
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
· ***** Data compared to the previous version altered.**

SAFETY DATA SHEET

ARALDITE® 2010-1 A US

Section 1. Identification

GHS product identifier : **ARALDITE® 2010-1 A US**

Product code : 00067945

Other means of identification : Not available.

Product type : Liquid.

Material uses : Resin for adhesive systems

Supplier's details : Huntsman Advanced Materials Americas LLC
P.O. Box 4980
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

Precautionary statements : Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL), nitrile rubber, neoprene, Polyvinyl Chloride (PVC). Wear eye or face protection. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Collect spillage. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Section 2. Hazards identification

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Bisphenol A epoxy resin	60 - 100	25068-38-6
Bisphenol F epoxy resin	3 - 7	9003-36-5
Bisphenol A epoxy resin	3 - 7	25085-99-8
terphenyl	0.1 - 1	26140-60-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 4. First aid measures

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point : Closed cup: >149°C (>300.2°F) [PMCC]

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters :

Section 5. Fire-fighting measures

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities :

Section 7. Handling and storage

Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL), nitrile rubber, neoprene, Polyvinyl Chloride (PVC)

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Thermal hazards : Not available.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Paste.]

Color : Cream

Odor : Slight

Odor threshold : Not available.

pH : 7 [Conc. (% w/w): 50%]

Melting point/Freezing point : Not available.

Boiling/condensation point : Not available.

Flash point : Closed cup: >149°C (>300.2°F) [PMCC]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.17

Solubility in water : practically insoluble

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Density : 1.17 g/cm³ [25°C (77°F)]

Viscosity : Dynamic (room temperature): >100000 mPa·s (>100000 cP)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
Bisphenol A epoxy resin	-	LC0 Inhalation Vapor	Rat - Male	0.00001 ppm
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat - Male, Female	>2000 mg/kg
	OECD 420 Acute Oral Toxicity - Fixed Dose Method	LD50 Oral	Rat - Female	>2000 mg/kg
Bisphenol F epoxy resin	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat - Male, Female	>2000 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	>5000 mg/kg
ARALDITE 2010-1 A US	-	LD50 Oral	Rat	>5000 mg/kg

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Bisphenol A epoxy resin	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant
	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes - Mild irritant
Bisphenol F epoxy resin	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes - Non-irritant.
	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant

Conclusion/Summary

Skin :

Bisphenol A epoxy resin	Irritating to skin.
Bisphenol F epoxy resin	Slightly irritating to the skin.
Bisphenol A epoxy resin	No additional information.
terphenyl	No additional information.

Eyes :

Bisphenol A epoxy resin	Irritating to eyes.
Bisphenol F epoxy resin	Non-irritating to the eyes.
Bisphenol A epoxy resin	No additional information.
terphenyl	No additional information.

Respiratory :

Bisphenol A epoxy resin	No additional information.
Bisphenol F epoxy resin	No additional information.
Bisphenol A epoxy resin	No additional information.
terphenyl	No additional information.

Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result
Bisphenol A epoxy resin	-	skin	Mouse	Sensitizing
Bisphenol F epoxy resin	-	skin	Mouse	Sensitizing
ARALDITE 2010-1 A US	-	skin	Guinea pig	Sensitizing

Mutagenicity

Section 11. Toxicological information

Product/ingredient name	Test	Result
Bisphenol A epoxy resin	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Positive
	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Positive
	Experiment: In vivo Subject: Mammalian-Animal Cell: Germ	Negative
	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
Bisphenol F epoxy resin	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Positive
	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Positive
	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: +/-	Positive
	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative

Carcinogenicity

Product/ingredient name	Test	Species	Dose	Exposure	Result/Result type
Bisphenol A epoxy resin	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat - Male, Female	15 mg/kg	2 years; 7 days per week	Negative - Oral - NOAEL
	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat - Female	1 mg/kg	2 years; 5 days per week	Negative - Dermal - NOEL
	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Mouse - Male	0.1 mg/kg	2 years; 3 days per week	Negative - Dermal - NOEL

Reproductive toxicity

Section 11. Toxicological information

Product/ingredient name	Test	Species	Maternal toxicity	Fertility	Developmental effects
Bisphenol A epoxy resin	OECD 416 Two-Generation Reproduction Toxicity Study	Rat - Male, Female	Negative	Negative	Negative
Bisphenol F epoxy resin	OECD 416 Two-Generation Reproduction Toxicity Study	Rat - Male, Female	Negative	Negative	Negative

Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
Bisphenol A epoxy resin	OECD 414 Prenatal Developmental Toxicity Study	Rat - Female	Negative - Oral
	EPA CFR	Rabbit - Female	Negative - Dermal
	OECD 414 Prenatal Developmental Toxicity Study	Rabbit - Female	Negative - Oral
Bisphenol F epoxy resin	EPA CFR	Rabbit - Female	Negative - Dermal

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
Bisphenol A epoxy resin	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg
	OECD 411 Subchronic Dermal Toxicity: 90-day Study	Sub-chronic NOEL Dermal	Rat - Male, Female	10 mg/kg
	OECD 411 Subchronic Dermal Toxicity: 90-day Study	Sub-chronic NOAEL Dermal	Mouse - Male	100 mg/kg
Bisphenol F epoxy resin	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	250 mg/kg

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Endpoint		Exposure	Species	Result	
Bisphenol A epoxy resin	EPA CFR	Acute	EC50	72 hours Static	Algae	9.4	mg/l
	OECD 202 *Daphnia* sp. Acute Immobilisation Test	Acute	EC50	48 hours Static	Daphnia	1.7	mg/l
	Unknown guidelines	Acute	IC50	3 hours Static	Bacteria	>100	mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute	LC50	96 hours Static	Fish	1.5	mg/l
	OECD 211 *Daphnia Magna* Reproduction Test	Chronic	NOEC	21 days Semi-static	Daphnia	0.3	mg/l
Bisphenol F epoxy resin	OECD 201 Alga, Growth Inhibition Test	Acute	EC50	72 hours Static	Algae	1.8	mg/l
	OECD 202: Part I (Daphnia sp., Acute Immobilisation test)	Acute	EC50	48 hours Static	Daphnia	1.6	mg/l
	-	Acute	IC50	3 hours Static	Bacteria	>100	mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute	LC50	96 hours Semi-static	Fish	0.55	mg/l
	OECD 211 *Daphnia Magna* Reproduction Test	Chronic	NOEC	21 days Semi-static	Daphnia	0.3	mg/l

Persistence and degradability

Product/ingredient name	Test	Period	Result
Bisphenol A epoxy resin	OECD Derived from OECD 301F (Biodegradation Test)	28 days	5 %
Bisphenol F epoxy resin	EU	28 days	0 %

Conclusion/Summary : Bisphenol A epoxy resin Not readily biodegradable.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Bisphenol A epoxy resin	Fresh water 4.83 days Fresh water 3.58 days Fresh water 7.1 days	-	Not readily
Bisphenol F epoxy resin	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Bisphenol A epoxy resin	3.242	31	low
Bisphenol F epoxy resin	2.7 to 3.6	-	low

Mobility in soil

Not available.

Other adverse effects : No known significant effects or critical hazards.

Other ecological information

Section 12. Ecological information

BOD5 : Not determined.

COD : Not determined.

TOC : Not determined.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

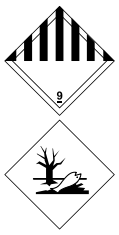
Proper shipping name

DOT : Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A/F EPOXY RESIN). Marine pollutant (Bisphenol A epoxy resin, Bisphenol F epoxy resin)

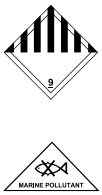
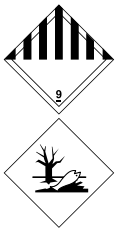
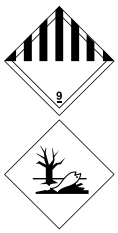
TDG : Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A/F EPOXY RESIN). Marine pollutant (Bisphenol A epoxy resin, Bisphenol F epoxy resin)

IMDG : Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A/F EPOXY RESIN). Marine pollutant (Bisphenol A epoxy resin, Bisphenol A epoxy resin)

IATA : Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A/F EPOXY RESIN)

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	UN3082	9	III		Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.

Section 14. Transport information

TDG Classification	UN3082	9	III		The product is not regulated as a dangerous good when transported by road or rail.
IMDG Classification	UN3082	9	III		The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-A S-F
IATA Classification	UN3082	9	III		The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Passenger and Cargo Aircraft** Quantity limitation: 450 L Packaging instructions: 964 **Cargo Aircraft Only** Quantity limitation: 450 L Packaging instructions: 964

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard

Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

Section 15. Regulatory information

SARA 313 : No ingredients listed.

CERCLA Hazardous substances : No ingredients listed.

State regulations

PENNSYLVANIA - RTK : Terphenyl, hydrogenated

California Prop 65 : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL : All components are listed or exempted.

WHMIS Classes : Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

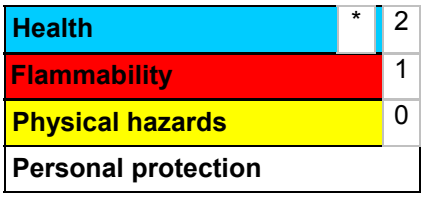
Brazil Regulations

Classification system used : **Norma ABNT-NBR 14725-2:2012**

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: At least one component is not listed.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.) :

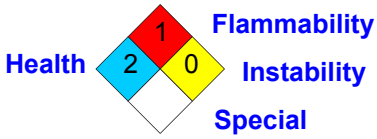


The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

Section 16. Other information

National Fire Protection Association (U.S.A.) :



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Further information :

Date of printing : **2/13/2015.**

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Date of previous issue : 2/13/2015.

Version : 2

Indicates information that has changed from previously issued version.

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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SAFETY DATA SHEET

ARALDITE® 2010-1 B US

Section 1. Identification

GHS product identifier : **ARALDITE® 2010-1 B US**

Product code : 00073215

Other means of identification : Not available.

Product type : Liquid.

Material uses : Hardener for adhesive systems

Supplier's details : Huntsman Advanced Materials Americas LLC
P.O. Box 4980
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION/IRRITATION - Category 1C
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 72.3%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 72.3%

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Section 2. Hazards identification

Precautionary statements : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Get medical attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
triethylene glycol dimercaptan	3 - 7	14970-87-7
2,4,6-tris(dimethylaminomethyl)phenol	3 - 7	90-72-2
Dimethyldipropyltriamine	1 - 3	10563-29-8
Terphenyl	0.1 - 1	26140-60-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point : Closed cup: 100°C (212°F) [ASTM D 93 (Pensky-Martens Closed Cup)]

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
halogenated compounds

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 6. Accidental release measures

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Thermal hazards : Not available.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Paste.]

Color : Pale yellow.

Odor : Mercaptan

Odor threshold : Not available.

pH : Not available.

Melting point/Freezing point : Not available.

Boiling/condensation point : Not available.

Flash point : Closed cup: 100°C (212°F) [ASTM D 93 (Pensky-Martens Closed Cup)]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.14

Solubility in water : very slightly soluble

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

VOC : 3.6 % (w/w)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
2,4,6-tris (dimethylaminomethyl) phenol	Unknown guidelines	LD50 Dermal	Rat - Male	>971 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	2169 mg/kg
Dimethyldipropyltriamine	Unknown guidelines	LD50 Dermal	Rabbit	1310 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	1669 mg/kg

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
2,4,6-tris(dimethylaminomethyl) phenol	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Corrosive
	EPA CFR	Rabbit	Eyes - Corrosive
Dimethyldipropyltriamine	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Corrosive

Conclusion/Summary

Skin :

triethylene glycol dimercaptan	No additional information.
2,4,6-tris (dimethylaminomethyl) phenol	Corrosive to the skin.
Dimethyldipropyltriamine	Corrosive to the skin.
Terphenyl	No additional information.

Eyes :

Section 11. Toxicological information

	triethylene glycol dimercaptan	No additional information.
	2,4,6-tris (dimethylaminomethyl) phenol	Corrosive to eyes.
	Dimethyldipropyltriamine	Corrosive to eyes.
	Terphenyl	No additional information.
Respiratory :	triethylene glycol dimercaptan	No additional information.
	2,4,6-tris (dimethylaminomethyl) phenol	No additional information.
	Dimethyldipropyltriamine	No additional information.
	Terphenyl	No additional information.

Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result
2,4,6-tris (dimethylaminomethyl) phenol	-	skin	Guinea pig	Not sensitizing
Dimethyldipropyltriamine	-	skin	Guinea pig	Sensitizing

Mutagenicity

Product/ingredient name	Test	Result
2,4,6-tris (dimethylaminomethyl)phenol	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: +/-	Negative
Dimethyldipropyltriamine	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Human Metabolic activation: +/-	Negative

Conclusion/Summary :

2,4,6-tris (dimethylaminomethyl) phenol	Not mutagenic in a standard battery of genetic toxicological tests.
Dimethyldipropyltriamine	Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Section 11. Toxicological information

Product/ingredient name	Test	Species	Dose	Exposure	Result/Result type
Dimethyldipropyltriamine	No official guidelines	Mouse - Male	-	20 months; 3 days per week	Negative - Dermal - NOAEL

Reproductive toxicity

Product/ingredient name	Test	Species	Maternal toxicity	Fertility	Developmental effects
2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female	Negative	Negative	Negative

Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
Dimethyldipropyltriamine	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female	Positive - Oral

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,4,6-tris(dimethylaminomethyl)phenol	Category 2	Not determined	brain

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Sub-acute NOEL Oral	Rat - Male, Female	15 mg/kg
Dimethyldipropyltriamine	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	1000 ppm
	No official guidelines	Chronic NOAEL Dermal	Mouse - Male	>56.3 mg/kg/d
	No official guidelines	Sub-acute NOEC Inhalation Vapor	Rat - Male, Female	550 mg/m³

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Oral Dermal Inhalation (vapors)	1932.6 mg/kg 13630.6 mg/kg 57.26 mg/l

Other information : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Endpoint		Exposure	Species	Result	
2,4,6-tris (dimethylaminomethyl)phenol	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Static	Algae	84	mg/l
	Unknown guidelines	Acute	LC50	96 hours Static	Daphnia	718	mg/l
	-	Acute	LC50	96 hours Static	Fish	175	mg/l
	-	Chronic	NOEC	72 hours	Algae	6.25	mg/l
Dimethyldipropyltriamine	DIN DIN 38412 Part 8	Acute	EC50	16 hours Static	Bacteria	181	mg/l
	OECD 202 *Daphnia* sp. Acute Immobilisation Test	Acute	EC50	48 hours Static	Daphnia	9.2	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Static	Algae	21	mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute	LC50	96 hours Static	Fish	>100	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic	LOAEL	72 hours Static	Algae	5.7	mg/l

Persistence and degradability

Product/ingredient name	Test	Period	Result
2,4,6-tris (dimethylaminomethyl)phenol	OECD 301D Ready Biodegradability - Closed Bottle Test	28 days	4 %
Dimethyldipropyltriamine	ISO ISO 7827, 1984 - Evaluation in an aqueous medoum of the ultimate aerobic biodegradability of organic compounds	28 days	100 %

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2,4,6-tris (dimethylaminomethyl)phenol	-	-	Not readily
Dimethyldipropyltriamine	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2,4,6-tris (dimethylaminomethyl)phenol	0.219	-	low
Dimethyldipropyltriamine	0.5	-	low

Section 12. Ecological information

Mobility in soil

Not available.

Other adverse effects : No known significant effects or critical hazards.

Other ecological information

BOD5 : Not determined.

COD : Not determined.

TOC : Not determined.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

DOT : Polyamines, liquid, corrosive, n.o.s. (2,4,6-Tris(dimethylaminomethyl)phenol , Dimethyl dipropyl triamine)

TDG : Polyamines, liquid, corrosive, n.o.s. (2,4,6-Tris(dimethylaminomethyl)phenol , Dimethyl dipropyl triamine)

IMDG : Polyamines, liquid, corrosive, n.o.s. (2,4,6-Tris(dimethylaminomethyl)phenol , Dimethyl dipropyl triamine)

IATA : Polyamines, liquid, corrosive, n.o.s. (2,4,6-Tris(dimethylaminomethyl)phenol , Dimethyl dipropyl triamine)

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	UN2735	8	III		-
TDG Classification	UN2735	8	III		-

Section 14. Transport information

IMDG Classification	UN2735	8	III		**Emergency schedules (EmS)** F-A S-B
IATA Classification	UN2735	8	III		**Passenger and Cargo Aircraft** Quantity limitation: 5 L Packaging instructions: 852 **Cargo Aircraft Only** Quantity limitation: 60 L Packaging instructions: 856

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard
Delayed (chronic) health hazard

Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 : No ingredients listed.

CERCLA Hazardous substances : No ingredients listed.

State regulations

PENNSYLVANIA - RTK : Terphenyl, hydrogenated

California Prop 65 : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL : At least one component is not listed.

Section 15. Regulatory information

WHMIS Classes : Class E: Corrosive material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

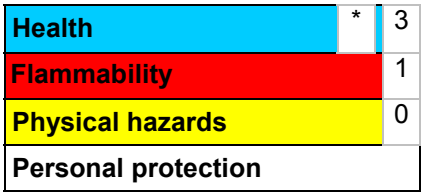
Brazil Regulations

Classification system used : **Norma ABNT-NBR 14725-2:2012**

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: At least one component is not listed.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed.
Philippines inventory (PICCS): At least one component is not listed.
Taiwan inventory (CSNN): Not determined.

Section 16. Other information

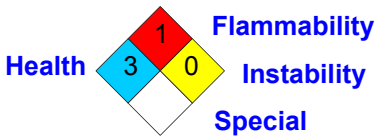
Hazardous Material Information System (U.S.A.) :



The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.) :



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Further information :

Date of printing : **3/30/2015.**

Date of issue : 3/30/2015.

Date of previous issue : 3/30/2015.

Section 16. Other information

Version : 5

Indicates information that has changed from previously issued version.

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Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.

Material Safety Data Sheet

HUNTSMAN
Enriching lives through innovation

ARALDITE® 2021 B US

1 . Product and company identification

Product name : **ARALDITE® 2021 B US**
Material uses : Acrylate activator
MSDS # : 00048083
Validation date : 8/4/2012.
Print date : 8/4/2012.

Supplier/Manufacturer : Huntsman Advanced Materials Americas LLC
P.O. Box 4980
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

E-Mail: MSDS@huntsman.com

In case of emergency : Chemtrec: (800) 424-9300 or (703) 527-3887

2 . Hazards identification

Physical state : Liquid. [Viscous liquid.]
Odor : Pungent.
Color : Yellow.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!

FLAMMABLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Flammable liquid. Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not get on skin or clothing. Avoid contact with eyes. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

See toxicological information (Section 11)

GENERAL INFORMATION : Read the entire MSDS for a more thorough evaluation of the hazards.

3 . Composition/information on ingredients

Name	CAS number	%
Methyl methacrylate	80-62-6	60 - 100
3,5-diethyl-1,2-dihydro-1-phenyl-2-propylpyridine	34562-31-7	1 - 3

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Notes to physician : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

5 . Fire-fighting measures

Flash point : Closed cup: 10.6°C (51.1°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]

Flammable limits : Lower: 2%
Upper: 12.5%

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the

6 . Accidental release measures

same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
methyl methacrylate	**ACGIH TLV (United States, 2/2010). Skin sensitizer.** TWA: 50 ppm 8 hour(s). STEL: 100 ppm 15 minute(s). **OSHA PEL (United States, 6/2010).** TWA: 100 ppm 8 hour(s). TWA: 410 mg/m³ 8 hour(s).

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

8 . Exposure controls/personal protection

Respiratory	: In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)
Eyes	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

General information

Appearance

Physical state	: Liquid. [Viscous liquid.]
Color	: Yellow.
Odor	: Pungent.

Important health, safety and environmental information

pH	: 8.5
Boiling/condensation point	: 101°C (213.8°F)
Melting/freezing point	: Not available.
Flash point	: Closed cup: 10.6°C (51.1°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
Flammable limits	: Lower: 2% Upper: 12.5%
Auto-ignition temperature	: Not available.
Decomposition temperature	: >200°C (>392°F)
Vapor pressure	: 3.7 kPa (27.75 mm Hg) [20°C]
Specific gravity	: Not available.
Water solubility	: Insoluble
Partition coefficient: n-octanol/water (log Kow)	: Not available.
Viscosity	: Dynamic: 40000 mPa·s (40000 cP)
Density	: 0.96 g/cm³ [25°C (77°F)]
Vapor density	: Not available.
Evaporation rate (butyl acetate = 1)	: Not available.
VOC	: Not available.

10 . Stability and reactivity

Chemical stability : The product is stable.
Under normal conditions of storage and use, hazardous reactions will not occur.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Materials to avoid : strong acids, strong bases, strong oxidising agents

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Potential acute health effects

Inhalation : Irritating to respiratory system. May cause sensitization by inhalation.

Ingestion : No known significant effects or critical hazards.

Skin : Irritating to skin. May cause sensitization by skin contact.

Eyes : Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methyl methacrylate	LD50 Oral	Rat	7872 mg/kg	-

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
methyl methacrylate	-	-	-

Carcinogenic class

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
methyl methacrylate	A4	3	-	-	-	-

Potential chronic health effects

Chronic effects : Contains material that can cause target organ damage. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Target organs : Contains material which causes damage to the following organs: kidneys, liver.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure

Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Biodegradability

Other ecological information

Biological Oxygen Demand (BOD 5 DAY) : Not Determined

Chemical Oxygen Demand (COD) : Not Determined

Other adverse effects : No known significant effects or critical hazards.

PBT : Not applicable.

Other information

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14 . Transport information

Proper shipping name

DOT : ADHESIVES

TDG : ADHESIVES

IMDG : ADHESIVES

IATA : ADHESIVES

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	UN1133	3	II		-
TDG Classification	UN1133	3	II		-

14 . Transport information

IMDG Class	UN1133	3	II		**Emergency schedules (EmS)** F-E, S-D
IATA-DGR Class	UN1133	3	II		**Passenger and Cargo Aircraft** Quantity limitation: 5 L Packaging instructions: 353 **Cargo Aircraft Only** Quantity limitation: 60 L Packaging instructions: 364

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations

HCS Classification : Flammable liquid
Irritating material
Sensitizing material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : None.

TSCA 5(e) substance consent order : None.

TSCA 12(b) export notification : None.

TSCA 12(b) annual export notification : None.

SARA 302/304/311/312 extremely hazardous substances : **SARA 302/304/311/312 extremely hazardous substances**: No Ingredient Listed

SARA 311/312 hazard identification : **SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** Fire hazard, reactive, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Air Act Section 111 - Volatile Organic Compounds (VOC) Not available.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) :

Product name	CAS number	Concentration
methyl methacrylate	80-62-6	60 - 100

Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 No ingredients listed.

15 . Regulatory information

CERCLA Hazardous substances : No ingredients listed.

STATE REGULATIONS:

PENNSYLVANIA - RTK: None

California Prop 65 : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2B: Material causing other toxic effects (Toxic).

CEPA DSL : All components are listed or exempted.

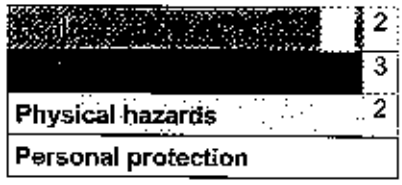
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International lists : **Australia inventory (AICS):** All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: At least one component is not listed.
Korea inventory: At least one component is not listed.
New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed.
Philippines inventory (PICCS): All components are listed or exempted.

16 . Other information

Label requirements : FLAMMABLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) :



The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :

Date of printing : 8/4/2012.

Date of issue : 8/4/2012.

Date of previous issue : 6/29/2012.

16 . Other information

Version : 3

☑ Indicates information that has changed from previously issued version.

Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.

SAFETY DATA SHEET

ARALDITE® AV 4076-1

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : ARALDITE® AV 4076-1

Registration number : Not available.

Product code : 00051026

Product description :

Other means of identification : Not available.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product use : Resin for adhesive systems

1.3 Details of the supplier of the safety data sheet

Supplier : Huntsman Advanced Materials (Europe)BVBA
Everslaan 45
3078 Everberg / Belgium
Tel.: +41 61 299 20 41
Fax: +41 61 299 20 40

e-mail address of person responsible for this SDS : Global_Product_EHS_AdMat@huntsman.com

E-mail address to request full REACH registration number upon EU member State Authority request :
REACH_Registration_Nr_AM@huntsman.com

1.4 Emergency telephone number

Supplier

Telephone number : EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
India: +91 22 4050 6333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Irrit. 2, H315
Eye Irrit. 2, H319
Skin Sens. 1, H317
Aquatic Chronic 2, H411

Ingredients of unknown toxicity :

Ingredients of unknown ecotoxicity :

Classification according to Directive 1999/45/EC [DPD]

SECTION 2: Hazards identification

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xi; R36/38
R43
N; R51/53

Human health hazards : Irritating to eyes and skin. May cause sensitisation by skin contact.

Environmental hazards : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : Wear protective gloves: > 8 hours (breakthrough time): Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber. Wear eye or face protection. Avoid release to the environment.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)

Supplemental label elements : Not applicable.

Supplemental label elements : Contains epoxy constituents. See information supplied by the manufacturer.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification 67/548/EEC	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	CAS: 25068-38-6 EC: 500-033-5 RRN: 01-2119456619-26	60-100	Xi; R36/38 R43 N; R51/53 **See Section 16 for the full text of the R-phrases declared above.**	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411 **See Section 16 for the full text of the H statements declared above.**	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such

SECTION 4: First aid measures

as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds

5.3 Advice for firefighters

SECTION 5: Firefighting measures

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

SECTION 7: Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Storage hazard class Huntsman Advanced Materials : Storage class 10, Environmentally hazardous liquids

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

No DELs available.

Predicted effect concentrations

No PECs available.

8.2 Exposure controls

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Material of gloves for long term application (BTT>480min): : Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber

Material of gloves for short term/splash application (10min <BTT<480min): : neoprene, nitrile rubber

(BTT = Break Through Time)

Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at www.gisbau.de.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Paste.]

Colour : Off-white.

Odour : Slight

Odour threshold : Not available.

SECTION 9: Physical and chemical properties

pH : 7 [Conc. (% w/w): 50%]

Melting point/freezing point : Not available.

Initial boiling point and boiling range : >200°C

Flash point : Closed cup: 200°C [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Burning time : Not applicable.

Burning rate : Not applicable.

Upper/lower flammability or explosive limits : Not available.

Vapour pressure : 0.001 kPa [room temperature]

Vapour density : Not available.

Relative density : Not available.

Solubility(ies)

Water solubility : practically insoluble

20 deg C

Partition coefficient: n-octanol/water ($LogK_{ow}$) : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : >200°C

Viscosity : Dynamic: Not available.
Kinematic: Not available.
Kinematic (40°C): Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

9.2 Other information

Density : 1.16 g/cm³ [25°C (77°F)]

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : strong acids, strong bases, strong oxidising agents

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Decomposition products may include the following materials:Carbon oxides, Burning produces obnoxious and toxic fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	LC0 Inhalation Vapour	Rat - Male	0.00001 ppm	5 hours
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2000 mg/kg	-

Conclusion/Summary : No additional information.

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Test	Species	Route of exposure	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	Mild irritant
	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes	Mild irritant

Conclusion/Summary

Skin : reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700) — Irritating to skin.

Eyes : reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700) — Irritating to eyes.

Respiratory : No additional information.

Sensitiser

Product/ingredient name	Test	Route of exposure	Species	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 429 Skin Sensitisation: Local Lymph Node Assay	skin	Mouse	Sensitising

Conclusion/Summary

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

SECTION 11: Toxicological information

Product/ingredient name	Test	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 471 Bacterial Reverse Mutation Test	Positive
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Positive
	OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Negative
	EPA OPPTS	Negative

Conclusion/Summary : No additional information.

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Route of exposure	Target organs
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	2 years; 7 days per week	Negative	Oral	-
	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	2 years; 5 days per week	Negative	Dermal	-
	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Mouse	2 years; 3 days per week	Negative	Dermal	-

Conclusion/Summary : No additional information.

Reproductive toxicity

Product/ingredient name	Test	Species	Result/Result type	Target organs
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 416 Two-Generation Reproduction Toxicity Study	Rat	Oral: 540 mg/kg NOEL	-

Conclusion/Summary : No additional information.

Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 414 Prenatal Developmental Toxicity Study	Rat - Female	>540 mg/kg NOEL
	EPA CFR	Rabbit - Female	>300 mg/kg NOEL
	OECD 414 Prenatal Developmental Toxicity Study	Rabbit - Female	180 mg/kg NOAEL

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

SECTION 11: Toxicological information

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : Irritating to mouth, throat and stomach.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Eye contact : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Test	Result type	Result	Target organs
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	NOAEL -	50 mg/kg	-
	OECD 411 Subchronic Dermal Toxicity: 90-day Study	NOEL	10 mg/kg	-
	OECD 411 Subchronic Dermal Toxicity: 90-day Study	NOAEL	100 mg/kg	-

Conclusion/Summary : No additional information.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	-	Acute EC50	72 hours Static	Algae	9.4 mg/l
	OECD 202 *Daphnia* sp. Acute Immobilisation Test	Acute EC50	48 hours Static	Daphnia	1.7 mg/l
	-	Acute IC50	3 hours Static	Bacteria	>100 mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hours Static	Fish	1.5 mg/l
	OECD 211 Daphnia Magna Reproduction Test	Chronic NOEC	21 days Semi-static	Daphnia	0.3 mg/l

Conclusion/Summary : No additional information.

12.2 Persistence and degradability

Product/ingredient name	Test	Period	Result
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	OECD Derived from OECD 301F (Biodegradation Test)	28 days	5 %

Conclusion/Summary : reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700) Not readily biodegradable.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	Fresh water 4.83 days Fresh water 3.58 days Fresh water 7.1 days	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)	3.242	31	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Not applicable.

SECTION 12: Ecological information

12.6 Other adverse effects : No known significant effects or critical hazards.

12.7 Other ecological information

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
07 02 08*	other still bottoms and reaction residues

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

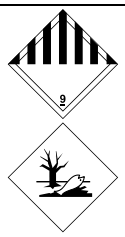
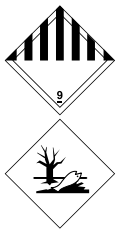
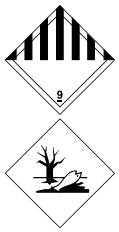
Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	14.1 UN number	14.2 UN proper shipping name
ADR/RID	UN3082	Environmentally hazardous substance, liquid, n.o.s. BISPHENOL A EPOXY RESIN
IMDG	UN3082	Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN). Marine pollutant (Bisphenol A epoxy resin)
IATA	UN3082	Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN)

	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards	14.6 Special precautions for user	Additional information

SECTION 14: Transport information

ADR/RID	9 	III	Yes.	**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	**Hazard identification number** 90 **Special provisions** 274, 335, 601 **Tunnel code** E
IMDG	9 	III	Yes.	**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	**Emergency schedules (EmS)** F-A, S-F
IATA	9 	III	Yes.	**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	**Passenger and Cargo Aircraft** Quantity limitation: 450 L Packaging instructions: 964 **Cargo Aircraft Only**Quantity limitation: 450 L Packaging instructions: 964

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

This product is compliant with the REACH Regulation EC 1907/2006.
Huntsman has pre-registered and is registering all of the substances that it manufactures in or imports into the European Economic Area (EEA) that are subject to Title II of the REACH Regulation.

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

National regulations

References : The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974.

Australia inventory (AICS) : All components are listed or exempted.

Canada inventory : All components are listed or exempted.

China inventory (IECSC) : All components are listed or exempted.

Japan inventory : All components are listed or exempted.

Korea inventory (KECI) : All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.

Philippines inventory (PICCS) : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

SECTION 15: Regulatory information

Chemical Weapons Convention List Schedule III Chemicals : Not listed

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements :
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] :
Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1

Full text of abbreviated R phrases : R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD] : Xi - Irritant
N - Dangerous for the environment

(M)SDS no. : 00051026

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Version : 2

Notice to reader

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN

SECTION 16: Other information

HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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1. PRODUCT AND COMPANY NAME

PRODUCT CODE AND NAME
31492 GASOLINE 95 RON, UNLEADED
DESCRIPTION
Unleaded Automotive Gasoline.
COMPANY
CHEVRON LIMITED
1 Westferry Circus, Canary Wharf
London E14 4HA
U.K.
Tel : 0044/20 7719 3000
Fax : 0044/20 7719 5130
Emergency Phone Number : 0044/(0)18 65 407 333

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Name	% Wt	CAS No.	EC No.
Gasoline	95 - 99,99	86290-81-5	289-220-8

F+ R 12 Extremely flammable.
Xn R 65 Harmful: may cause lung damage if swallowed.
Xi R 38 Irritating to skin.
T R 45 May cause cancer.
N R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 67 Vapours may cause drowsiness and dizziness

Product contains small amounts of additives.

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3. HAZARDS IDENTIFICATION

Product classification

EXTREMELY FLAMMABLE

CARCINOGENIC CATEGORY 2

DANGEROUS FOR THE ENVIRONMENT

Acute effects of exposure to man

Inhalation

Vapours or mist may cause irritation of the nose and throat , headache, nausea, vomiting, dizziness, drowsiness, euphoria, loss of coordination, and disorientation. In poorly ventilated areas or confined spaces or in case of deliberate inhalation ofvapour unconsciousness, asphyxiation and death may result.

Skin contact

Prolonged or widespread skin contact may result in the absorption of potentially harmful amounts of

	material. Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling. Believed not to be a skin sensitiser.
Eye contact	May cause irritation, experienced as mild discomfort and seen as slight excess redness of the eye.
Ingestion	If more than several mouthfuls are swallowed, abdominal discomfort, nausea and diarrhoea may occur. Although gasoline is of low to moderate oral toxicity to adults, ingestion of even small quantities may prove dangerous or fatal to children. Aspirationmay occur during swallowing or vomiting resulting in lung damage which may prove fatal.
Chronic effects of exposure to man	
Medical conditions aggravated by exposure	Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).
Other remarks	This product contains benzene. Prolonged and repeated exposure to benzene has been associated with aplastic anaemia and leukaemia in humans.
Effects of exposure to the environment	Consider that potential for bioaccumulation and/or persistence in the aquatic environment is low to non-existent.

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4. FIRST AID MEASURES

Route of exposure

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may administer oxygen. Get immediate medical attention. External cardiac massage may be instituted if the heart has stopped.
Skin contact	Wash skin with plenty of soap and water for several minutes. In extreme situations of saturation with this product, first drench with water, then remove clothing as soon as possible and wash skin with soap and water. Seek medical advice if skin becomes red, swollen or painful.

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.
Ingestion	Do not induce vomiting. Get medical attention. Never give anything by mouth to an unconscious or convulsing person.
Other recommendations	Aspiration of this product during induced vomiting can result in lung injury which may be fatal. If evacuation of stomach contents is considered necessary, use method least likely to cause aspiration, such as gastric lavage after endotrachealintubation. Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associatedwith handling contaminated clothing.

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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Use water fog, dry powder, foam or carbon dioxide. Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water fog to disperse the vapours and to provide protection for personnel attempting to stop the leak.
Extinguishing media which must not be used for safety reasons	Water jet
Special exposure hazards arising from the substance or preparation itself,	
combustion products, resulting gases	In case of fire - Always call the fire brigade. Small fires, such as those capable of being fought with a hand-held extinguisher, can normally be fought by a person who has received instruction on the hazards of flammable liquid fires. Fires that arebeyond that stage should only be tackled by people who have received hands-on training. Ensure escape path is available. Gasoline vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back. Flowing gasoline can generate static electricity and cause a fire or explosion if a spark occurs in a flammable vapour-air atmosphere.When handling, use non-sparking tools, ground and bond

all containers.

Special protective equipment for firefighters	The nature of special protective equipment required will depend upon the size of the fire, the degree of confinement of the fire and the natural ventilation available. Fire-resistant clothing and self-contained breathing apparatus is recommended forfires in confined spaces and poorly-ventilated areas. Full fire-proof clothing is recommended for any large fires involving this product.

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6. ACCIDENTAL RELEASE MEASURES

Procedures in case of accidental release or leakage	Eliminate all ignition sources including internal combustion engines and power tools. Ventilate area. Keep people away. Stay upwind and warn of possible downwind explosion hazard. Avoid breathing vapour. Use self-contained breathing apparatus orsupplied air mask for large spills or confined areas. Avoid contact with skin, eyes or clothing. Contain spill if possible. Remove with inert absorbent. Prevent entry into sewers and waterways.

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7. HANDLING AND STORAGE

Handling	Use spark-proof tools. Material may be at elevated temperatures and/or pressures. Exercise care when opening bleeders and sampling ports. Avoid spillage onto hot exhausts and engine parts during refuelling. Never syphon this product by mouth. Do not empty into drains. Use explosion-proof equipment to maintain adequate ventilation to meet occupational exposure limits, (see below), prevent accumulation of explosive air-gas mixtures, and avoid significant oxygen displacement. Oxygen levels should be at least 19.5% inconfined spaces or other work areas.
Storage	Transport, handle and store in accordance with applicable local regulations and only in labelled containers designed for this product. Ground and bond shipping container, transfer line, and receiving container. Keep away from sparks, flame and othersources of ignition. Protect containers against static electricity, lightning and physical damage. Hot work (eg cutting or welding) must not be carried out on or near any container used for storage of this product unless it has been made safe bypurging or

	other suitable means. Empty product containers may contain product residue. Do not reuse empty containers without commercial cleaning or reconditioning. Special health precautions must be taken during cleaning or maintenance operations of any storage tanks which may have contained leaded product at any time. In addition any sludge must be disposed of in accordance with local waste disposal regulations.
Specific use (s)	Never use for lighting fires. THIS PRODUCT IS INTENDED FOR USE AS A MOTOR FUEL ONLY.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection	Airborne concentrations should be kept to lowest levels possible. If vapour, mist or dust is generated, use approved Filtering half mask (disposable) respirator (A1P1-filter) as appropriate. Supplied air respiratory protection should be used forcleaning large spills or upon entry into tanks, vessels, or other confined spaces.
Hand and skin protection	Protective clothing such as Flame retardant uniforms, coveralls or lab coats should be worn. Launder or dry-clean when soiled. North Red PVC gloves (Ref. 725), Nitrile Rubber or Viton gloves and lace up safety boots with steel toecaps resistant tochemicals and petroleum distillates required.
Eye protection	Safety glasses, chemical type goggles or full face shield recommended to prevent eye contact.
Exposure limit for the product	Gasoline : OSHA PEL-TWA 300 ppm STEL 500 ppm ; ACGIH TLV-TWA 300 ppm STEL 500 ppm

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear liquid (some grades may be dyed)
Odour	Gasoline odour
Flash point, °C	- 40 (PMCC)
Relative density	0,72 - 0,78 @ 15 °C
Viscosity	< 7 mm^2/s @ 40 °C

Ignition temperature, °C	220
Flammable limits % lower/upper	1,4 - 7,6
Boiling point/range, °C	25 - 210
Vapour pressure, at °C	450 - 1000 hPa @ 37.8 °C
Vapour density (Air = 1)	3 - 4
Water solubility	Immiscible

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10. STABILITY AND REACTIVITY

Conditions to avoid	Sources of ignition such as flames, sparks, hot surfaces.
Materials to avoid	Avoid contact with strong oxidising agents.
Hazardous decomposition products	Carbon monoxide, carbon dioxide, aldehydes and ketones.

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11. TOXICOLOGICAL INFORMATION

Acute

Inhalation	Likely to be irritating to the respiratory tract if high concentrations of mists or vapour are inhaled. May cause nausea, dizziness, headaches and drowsiness if high concentrations of vapour are inhaled. ABUSE : Under normal conditions of use the product is not hazardous ; however, abuse involving deliberate inhalation of very high concentrations of vapour, even for short periods, can produce unconsciousness and/or result in a sudden fatality.
Skin contact	Irritating to the skin. Likely to result in chemical burns following prolonged wetting of the skin (eg. after a road traffic accident). Believed not to be a skin sensitiser.
Eye contact	Unlikely to cause more than transient stinging or redness if accidental eye contact occurs.
Ingestion	Unlikely to cause harm if accidentally swallowed in small doses, though larger quantities may cause

	nausea and diarrhoea. Will injure the lungs if aspiration occurs, eg. during vomiting.
Chronic	Exposure to benzene may result in affects to the hematopoietic system causing blood disorders including anaemia and leukaemia. Benzene is classified by EC as a category 1 carcinogen - substances known to be carcinogenic to man. IARC assessment :benzene - carcinogenic in humans (Group 1).

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12. ECOLOGICAL INFORMATION

Mobility	Spillages may penetrate the soil causing ground water contamination.
Persistence and degradability	Inherently biodegradable according to EU criteria.
Potential to bioaccumulate	Consider that potential for bioaccumulation and/or persistence in the aquatic environment is low to non-existent.
Aquatic toxicity	Some short-term toxicity to aquatic and marine organisms. WGK = 3

---

13. DISPOSAL CONSIDERATIONS

Disposal	Dispose in a safe manner in accordance with local/national regulations. Materials contaminated with product should be treated as highly flammable. EWC- No : 13 07 02

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14. TRANSPORT INFORMATION

Sea transport

UN No	1203
Proper shipping name	GASOLINE
IMO, IMDG Class/Packing group	3 / II
Marine pollutant	P
EmS No	3-07

Road/rail transport

UN No	1203
Proper shipping name	MOTOR SPIRIT
ADR/RID Class/Packing group	3 / II
Hazard identification No	33
CEFIC Tremcard No	30GF1-I+II
UK Emergency action code	3YE

Inland waterways

ADNR Class	3 / II

Air transport

UN No	1203
Proper shipping name	GASOLINE
IATA/ICAO Class/Packing group	3 / II

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15. REGULATORY INFORMATION

Classification/Labelling information

Under the criteria of Directive EEC/67/548 (dangerous substances) and EEC/1999/45 (dangerous preparations) :

Symbol (letter notation) + Indication of danger

F+ EXTREMELY FLAMMABLE

T

N DANGEROUS FOR THE ENVIRONMENT

Risk phrases

F+ R 12 Extremely flammable.

Xn R 65 Harmful: may cause lung damage if swallowed.

Xi R 38 Irritating to skin.

T R 45 May cause cancer.

R 67 Vapours may cause drowsiness and dizziness

N R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases

S 2 Keep out of the reach of children.

S 7 Keep container tightly closed.

S 16 Keep away from sources of ignition - No smoking.

S 23 Do not breathe vapour.

S 24 Avoid contact with skin.

S 43 In case of fire, use CO2, dry chemical or foam. Never use water.

S 53 Avoid exposure - obtain special instructions before use.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

S 29 Do not empty into drains.

S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Hazardous ingredients

Gasoline

Additional information

Refer to any national measures that may be relevant.

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16. OTHER INFORMATION

other information

The company recommends that all exposures to this product be minimized by strictly adhering to recommended occupational control procedures to avoid any potential adverse health effects.

Full text of risk phrases

F+ R 12 Extremely flammable.

Xn R 65 Harmful: may cause lung damage if swallowed.

Xi R 38 Irritating to skin.

T R 45 May cause cancer.

N R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 67 Vapours may cause drowsiness and dizziness

Changes were made in sections : 2, 3, 7, 8, 9, 12,14, 15, 16

DATE ISSUED : 07/01/2004 Supersedes : 07/01/2004

All information contained in this Material Safety Data Sheet and, in particular, the health and safety and environmental information is accurate to the best of our knowledge and belief as at the date of issue specified. However, the Company makes no warranty or representation, express or implied, as to the accuracy or completeness of such information.

The provision of this Material Safety Data Sheet is not intended, of itself, to obviate the need for all users to satisfy themselves that the product described is suitable for their individual purposes and that the safety precautions and environmental advice are adequate for their individual purposes and situation. Further, it is the user's obligation to use this product safely and to comply with all applicable laws and regulations concerning the use of the product.

The company accepts no responsibility for any injury, loss or damage, consequent upon any failure to follow the safety and other recommendations contained in this Material Safety Data Sheet, nor from any hazards inherent in the nature of the material, nor from any abnormal use of the material.

"Data sheet prepared by Chevron Energy Technology Company

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Version nr : 1.11

SAFETY DATA SHEET

1. Identification

Product identifier	**Brakleen® Brake Parts Cleaner - Non-Chlorinated**
Other means of identification	
Product code	05088
Recommended use	Brake parts cleaner
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Compressed gas
Health hazards	Acute toxicity, oral	Category 3
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 1
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word	Danger
Hazard statement	Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Toxic if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. May cause damage to organs (liver, kidneys, lungs, brain) through prolonged or repeated exposure. Suspected of damaging the unborn child. Causes damage to organs (eyes) by ingestion. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Do not breathe gas. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.
Response	If swallowed: Immediately call a poison center/doctor. Rinse mouth. Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If exposed: Call a poison center/doctor. If exposed or concerned: Get medical attention. Collect spillage.
Storage	Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information

16.8% of the mixture consists of component(s) of unknown acute oral toxicity. 66.2% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 62% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.
When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as formaldehyde.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Methanol		67-56-1	40 - 50
Toluene		108-88-3	10 - 20
Acetone		67-64-1	5 - 15
3-Methylhexane		589-34-4	5 - 10
Carbon dioxide		124-38-9	5 - 10
n-Heptane		142-82-5	5 - 10
Methylcyclohexane		108-87-2	3 - 5
Naphtha (petroleum), hydrotreated light		64742-49-0	3 - 5
Cyclohexane		110-82-7	1 - 3
Ethylbenzene		100-41-4	< 0.2

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Upper respiratory tract irritation. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Remove all possible sources of ignition in the surrounding area. Many vapors are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Prevent product from entering drains. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Avoid spark promoters. These alone may be insufficient to remove static electricity. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m3 5000 ppm
Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3 300 ppm
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3 100 ppm
Methanol (CAS 67-56-1)	PEL	260 mg/m3 200 ppm
Methylcyclohexane (CAS 108-87-2)	PEL	2000 mg/m3 500 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3 500 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
3-Methylhexane (CAS 589-34-4)	STEL	500 ppm
	TWA	400 ppm
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Cyclohexane (CAS 110-82-7)	TWA	100 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Methylcyclohexane (CAS 108-87-2)	STEL	500 ppm
	TWA	400 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm
Methanol (CAS 67-56-1)	STEL	325 mg/m3
		250 ppm
	TWA	260 mg/m3
		200 ppm
Methylcyclohexane (CAS 108-87-2)	TWA	1600 mg/m3
		400 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.
Toluene (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Methanol (CAS 67-56-1) Skin designation applies.
Toluene (CAS 108-88-3) Skin designation applies.

US - Tennessee OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower should be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as: Nitrile. Neoprene. Polyvinyl alcohol (PVA).

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Aerosol.

Color Clear.

Odor Solvent.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -195.9 °F (-126.6 °C) estimated

Initial boiling point and boiling range 132.9 °F (56.1 °C) estimated

Flash point 0 °F (-17.8 °C) Tag Closed Cup

Evaporation rate Fast.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1 % estimated

Flammability limit - upper (%)	36 % estimated
Vapor pressure	4438 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.84 estimated
Solubility (water)	Slightly soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	539.6 °F (282 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	92.4 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as formaldehyde.
Incompatible materials	Acids. Alkalies. Reducing agents. Strong oxidizing agents. Hypochlorites. Peroxides. Aluminum. Magnesium. Sodium. Zinc.
Hazardous decomposition products	Carbon oxides. Formaldehyde.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Toxic if swallowed. Even small amounts (30-250 ml methanol) may be fatal. Symptoms are stomach ache, nausea, vomiting, dullness, visual disorder and blindness. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Headache. May cause drowsiness and dizziness. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
Brakleen® Brake Parts Cleaner - Non-Chlorinated		
Acute		
Dermal		
LD50	Rabbit	6702 mg/kg estimated
Inhalation		
LC50	Rat	58 mg/l, 4 Hours estimated
Oral		
LD50	Human	110 mg/kg estimated
	Rat	5943 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not available.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure Causes damage to organs (eyes) by ingestion. May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure: Liver. Kidneys. Lungs. Brain.

Aspiration hazard May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.

Chronic effects May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	10294 - 17704 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
Cyclohexane (CAS 110-82-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	23.03 - 42.07 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	2.1 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	12.1 mg/l, 96 hours
Methanol (CAS 67-56-1)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	18000 - 20000 mg/l, 96 hours
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	18000 - 20000 mg/l, 96 hours
Methylcyclohexane (CAS 108-87-2)			
Aquatic			
Fish	LC50	Striped bass (Morone saxatilis)	5.8 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Acute			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.1 - 2.98 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours

Components		Species	Test Results
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Cyclohexane	3.44
Ethylbenzene	3.15
Methanol	-0.77
Methylcyclohexane	3.61
n-Heptane	4.66
Toluene	2.73

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products This material and its container must be disposed of as hazardous waste. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F
F005: Waste Non-halogenated Solvent - Spent Non-halogenated Solvent

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1950
UN proper shipping name Aerosols, flammable, Limited Quantity
Transport hazard class(es)
Class 2.1
Subsidiary risk 6.1(PGIII)
Label(s) 2.1
Packing group Not applicable.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions N82
Packaging exceptions 306
Packaging non bulk None
Packaging bulk None

IATA

UN number UN1950
UN proper shipping name Aerosols, flammable, containing substances in Division 6.1, Packing Group III
Transport hazard class(es)
Class 2.1
Subsidiary risk 6.1(PGIII)
Packing group Not applicable.
Environmental hazards No.
ERG Code 10P
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2
Subsidiary risk	6.1(PGIII)
Packing group	Not applicable.
Environmental hazards	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Cyclohexane (CAS 110-82-7)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)
Toluene (CAS 108-88-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)
Cyclohexane (CAS 110-82-7)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)
Toluene (CAS 108-88-3)

CERCLA Hazardous Substances: Reportable quantity

Acetone (CAS 67-64-1)	5000 LBS
Cyclohexane (CAS 110-82-7)	1000 LBS
Ethylbenzene (CAS 100-41-4)	1000 LBS
Methanol (CAS 67-56-1)	5000 LBS
Toluene (CAS 108-88-3)	1000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methanol (CAS 67-56-1)
Toluene (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Toluene (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV
Toluene (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Toluene (CAS 108-88-3)	594

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Acetone (CAS 67-64-1)	Low priority

Food and Drug Administration (FDA)	Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Acetone (CAS 67-64-1)
Ethylbenzene (CAS 100-41-4)
Methanol (CAS 67-56-1)
Naphtha (petroleum), hydrotreated light (CAS 64742-49-0)
Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

3-Methylhexane (CAS 589-34-4)
Acetone (CAS 67-64-1)
Carbon dioxide (CAS 124-38-9)
Methylcyclohexane (CAS 108-87-2)
n-Heptane (CAS 142-82-5)

US. Massachusetts RTK - Substance List

3-Methylhexane (CAS 589-34-4)
Acetone (CAS 67-64-1)
Carbon dioxide (CAS 124-38-9)
Cyclohexane (CAS 110-82-7)
Methanol (CAS 67-56-1)
Methylcyclohexane (CAS 108-87-2)
n-Heptane (CAS 142-82-5)
Toluene (CAS 108-88-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexane (CAS 110-82-7)
Methanol (CAS 67-56-1)
Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

Cyclohexane (CAS 110-82-7)
Methanol (CAS 67-56-1)
Toluene (CAS 108-88-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Cyclohexane (CAS 110-82-7)
Methanol (CAS 67-56-1)
Toluene (CAS 108-88-3)
Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Xylene (CAS 1330-20-7)
3-Methylhexane (CAS 589-34-4)
Carbon dioxide (CAS 124-38-9)
Methylcyclohexane (CAS 108-87-2)
n-Heptane (CAS 142-82-5)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Cumene (CAS 98-82-8)	Listed: April 6, 2010

Ethanal (CAS 75-07-0)	Listed: April 1, 1988
Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
Methanol (CAS 67-56-1)	Listed: March 16, 2012
Toluene (CAS 108-88-3)	Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s))	84 %
Consumer products (40 CFR 59, Subpt. C)	Not regulated

State

Consumer products	This product is regulated as a Brake Cleaner. This product is not compliant to be sold for use in California, Connecticut, Delaware, the District of Columbia, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island and parts of Utah and Virginia.
VOC content (CA)	84 %
VOC content (OTC)	84 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-13-2015
Revision date	01-13-2016
Prepared by	Allison Cho
Version #	02
Further information	CRC # 483A
HMIS® ratings	Health: 3* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 3 Flammability: 4 Instability: 0

NFPA ratings

Disclaimer

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.

SAFETY DATA SHEET
CondorLube Wire & Chain Spray

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name CondorLube Wire & Chain Spray

Applications Lubricant Anti-corrosion.

Supplier
Carl Stahl Evita Limited
Carl Stahl House,
Farfield Park Estate,
Rotherham, S63 5DB, GB
Tel: +44-1709-7630-61
Fax: +44-1709-7630-67
sales@carlstahlevita.co.uk
http://www.carlstahlevita.co.uk

Contact person Roy Fullthorpe

Manufacturer
Carl Stahl Câble SÂRL
Chemin du Neubrunnen 8
F-67140 Barr Cedex, France
Tel: +49-7162-40073075
Fax: +49-7162-40078839

Emergency telephone number National Poisons Information Service (NPIS), phone 0844 892 0111.
WEB: http://www.toxbase.org

2. HAZARDS IDENTIFICATION

Not regarded as a health, fire, explosion or environmental hazard under current legislation. Pressurized container - protect from sunlight and do not expose to temperatures exceeding 50°C.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS No.	Content	Symbol	Classification
nitrogen	231-783-9	7727-37-9	10-30 %	-	
ethanol	200-578-6	64-17-5	0-20 %	F	R-11

Section 16 contains detailed classification phrases.

Composition comments None of the components are subject to classification, or are present in quantities above regulatory disclosure limits.

4. FIRST AID MEASURES

General Remove victim immediately from source of exposure. Provide rest, warmth and fresh air.

Inhalation Move the exposed person to fresh air at once. Rinse nose and mouth with water.

Ingestion	Ingestion is not likely under the use as intended and described, product is an aerosol.
Skin	Wash the skin immediately with soap and water. Contact physician if irritation continues.
Eyes	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact physician if irritation persists. Make sure to remove any contact lenses from the eyes before rinsing.

5. FIRE-FIGHTING MEASURES

Extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
Special fire fighting procedures	Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid water in straight hose stream; will scatter and spread fire.
Specific hazards	Vapours are heavier than air and may spread near ground to sources of ignition.
Hazardous combustion products	Fire or high temperatures create: Carbon monoxide (CO). Carbon dioxide (CO2).
Protective measures in fire	Wear self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products.

6. ACCIDENTAL RELEASE MEASURES

Personal protection	Wear appropriate personal protective equipment - see Section 8.
Environmental protection	Prevent discharge of larger quantity to drain.
Spill cleanup methods	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Absorb in vermiculite, dry sand or earth and place into containers. Collect and reclaim or dispose in sealed containers in licensed waste.

7. HANDLING AND STORAGE

Usage precautions	Do not breathe of aerosol mist. Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Eliminate all sources of ignition.
Storage precautions	Keep in cool, dry, ventilated storage and closed containers. Keep away from heat, sparks and open flame. Pressurised container: Must not be exposed for temperatures above 50°C.
Storage criteria	Compressed gas storage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient name	CAS no.	Reference	LT Exp 8 Hrs	ST Exp 15 Min	Date
ethanol	64-17-5	WEL.	1000/1900 ppm/mg/m³		

Ingredient comments	WEL = Workplace exposure limits. SK= Skin absorbance, Rep= Reproduction, Carc= Carcinogenic Senz= Sensitisers, Mut= Carcinogenic
Ventilation	No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.
Respirators	If ventilation is insufficient, suitable respiratory protection must be provided. CCROVDM, CCR with organic vapour cartridge and dust and mist filter.
Protective gloves	Protective gloves must be used if there is a risk of direct contact or splash. Use protective gloves made of: Nitrile. Neoprene. Time of breakthrough is not known, change gloves regulary.
Eye protection	Wear approved chemical safety goggles where eye exposure is reasonably probable.
Other Protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygienic work practices	Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes wet or contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Fluid. Aerosol.		
Colour	Clear. Light brown.		
Odour	Mild (or faint). No characteristic odour.		
Solubility description	Insoluble in water. Soluble in: Organic solvents (most).		
Boiling point (°C, interval)	<30	**Pressure**	760mmHg
Density (g/cm3)	1,1 - 1,2	**Temperature (°C)**	20
Flash point (°C)	<0	**Method**	

10. STABILITY AND REACTIVITY

Stability	Stable under normal temperature conditions and recommended use.
Conditions to avoid	Avoid excessive heat, flames and other sources of ignition.
Hazardous polymerisation	Will not polymerise.
Materials to avoid	Strong oxides. Strong acids.
Hazardous decomp. products	No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

Sensitization	No allergic reaction is known.
Genotoxicity	No known heritable or mutagenic effects.
Carcinogenicity	This substance has no evidence of carcinogenic properties.
Reproduction toxicity	No known hazardous effects on reproduction, fertility or to the unborn child.
Inhalation	Gas or vapour displaces oxygen available for breathing (asphyxiant).
Ingestion	Ingestion is not a likely route of exposure, the product is supplied as an aerosol.
Skin	May cause defatting of the skin, but is not an irritant. Contact with liquefied gas might cause frostbites, in some cases tissue damage.
Eyes	Splashes may irritate and cause redness. Risk of frost bite in the eyes, aerosol.
Route of entry	Inhalation. Skin and/or eye contact.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Not classified as dangerous to the environment. However, the product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters.
Mobility	The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.
Bioaccumulative potential	The product is not bioaccumulating.
Persistence and degradability	The product is easily biodegradable. BOD: 60 % (28 days)

13. DISPOSAL CONSIDERATIONS

General/cleaning	Waste is classified as hazardous waste.
Disposal methods	Confirm disposal procedures with environmental engineer and local regulations.
Waste class	14 06 waste organic solvents, refrigerants and foam/aerosol propellants
Contaminated packaging	The product packaging must be disposed of in compliance with the country specific

regulations.

14. TRANSPORT INFORMATION

General	No dangerous goods (ADR/RID, IMDG, IATA/ICAO)
Proper shipping name (national)	Flammable liquid, n.o.s. (isopropyl alcohol)
ROAD TRANSPORT (ADR):	
RAIL TRANSPORT (RID):	
SEA TRANSPORT (IMDG):	

15. REGULATORY INFORMATION

Contains	nitrogen ethanol
Safety phrases	S-23 Do not breathe gas/fumes/vapour/spray. Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.
EU directives	67/548/EEC, 1999/45/EC, 2001/58/EC, 2008/58/EC (REACH), 1272/2008/EC (30ATP).

16. OTHER INFORMATION

Explanations to R-phrases in section 3	R-11 Highly flammable.

*** Information revised since the previous version of the SDS**

Issued by	Essenticon AS, Leif Weldingsvei 14, N-3208 Sandefjord, Norway. Tel.: +47 33 42 34 50 - Fax: +47 33 42 34 59 www.essenticon.com
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Safety Data Sheet status	30 ATP.
Signature	R. E. Lunde
Disclaimer	The information in this data sheet is considered to be correct according to present knowledge and experience, but there is no guarantee that it is complete. It is therefore in the user´s interest to ensure that the information is sufficient for the area it is intended for.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014 Version number 1 Revision: 25.06.2014

1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name:** ***RIDGID HIGH PERFORMANCE THREAD CUTTING OIL***

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture** Lubricant for Industrial use

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
RIDGE TOOL EUROPE
INTERLEUVENLAAN,
RESEARCH PARK
HAASRODE,
3001 LEUVEN
BELGIUM
Tel.: +32 (0) 16380211
Fax: +32 (0) 16380210

· **Further information obtainable from:** Customer Service +32 (0) 16380211 (Office hours)

· **1.4 Emergency telephone number:**
During normal opening times: ++49/2947/88100
Customer Service +32 (0) 16380211 (Office hours)

2 Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

F+; Extremely flammable

R12: Extremely flammable.

· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
Warning! Pressurized container.

· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **2.2 Label elements**

· **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals.
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**

F+ Extremely flammable

· **Risk phrases:**
12 Extremely flammable.

· **Safety phrases:**
1/2 Keep locked up and out of the reach of children.
16 Keep away from sources of ignition - No smoking.
29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
46 If swallowed, seek medical advice immediately and show this container or label.
51 Use only in well-ventilated areas.

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Safety data sheet

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· **Special labelling of certain preparations:**
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
Do not spray on a naked flame or any incandescent material.
· **Classification in accordance with Directive 75/324/EEC:** Extremely flammable
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **3.2 Chemical characterization: Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
	Zinc dialkyldithiophosphat Xi R38-41 N R51/53	0.1-<0.3%
CAS: 68476-86-8 EINECS: 270-705-8 Index number: 649-203-00-1	Petroleum gases, liquefied, sweetened F+ R12 Carc. Cat. 1, Muta. Cat. 2	25-50%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **4.1 Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Immediately rinse with water.
· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** Rinse out mouth and then drink plenty of water.
· **4.2 Most important symptoms and effects, both acute and delayed** Gastric or intestinal disorders
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
Foam
Sand
Carbon dioxide
CO2, sand, extinguishing powder. Do not use water.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **5.2 Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
· **5.3 Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.
· **Additional information** Cool endangered receptacles with water spray.

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Trade name: ***RIDGID HIGH PERFORMANCE THREAD CUTTING OIL***

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6 Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
Ensure adequate ventilation
Wear protective equipment. Keep unprotected persons away.
· **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Dispose of the material collected according to regulations.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **7.1 Precautions for safe handling**
Store in cool, dry place in tightly closed receptacles.
Open and handle receptacle with care.
· **Information about fire - and explosion protection:**
Do not spray onto a naked flame or any incandescent material.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C, i.e. electric lights. Do not pierce or burn, even after use.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Observe official regulations on storing packagings with pressurized containers.
· **Information about storage in one common storage facility:**
Store away from flammable substances.
Store away from oxidizing agents.
Store away from foodstuffs.
· **Further information about storage conditions:**
Store under lock and key and out of the reach of children.
Store in cool, dry conditions in well sealed receptacles.
Keep container tightly sealed.
Do not seal receptacle gas tight.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists valid during the making were used as basis.

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· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
· **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Use suitable respiratory protective device in case of insufficient ventilation.
· **Protection of hands:** Recommendation: Chemical resistant protective gloves (EN 374)
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

Use safety glasses according to EN 166 : 2001.

9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Aerosol
Colour:	Brown
· **Odour:**	Characteristic
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	-44 °C
· **Flash point:**	-60 °C
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	287 °C
· **Decomposition temperature:**	Not determined.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.
· **Explosion limits:**	
Lower:	0.9 Vol %
Upper:	9.5 Vol %
· **Vapour pressure at 20 °C:**	0.1 hPa

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Trade name: *RIDGID HIGH PERFORMANCE THREAD CUTTING OIL*

(Contd. of page 4)

· **Density at 20 °C:**	0.5 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with water:**	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
· **9.2 Other information**	No further relevant information available.

10 Stability and reactivity

· **10.1 Reactivity** Reacts with strong oxidants and strong reducing agents under severe heat.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known.
· **10.4 Conditions to avoid** Temperatures above 50 °C can result in breakage of the container
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:**
Emergence of flammable gases / vapors on contact with strong oxidizing agent' s possible.

11 Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**		
Zinc dialkyldithiophosphat		
Oral	LD50	>15000 mg/kg (rat)
Dermal	LD50	4100 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** May cause skin irritation after repeated contact.
· **on the eye:** May cause slight irritation to the eyes.
· **Sensitization:** No sensitizing effects known.

12 Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014 Version number 1 Revision: 25.06.2014

Trade name: *RIDGID HIGH PERFORMANCE THREAD CUTTING OIL*

(Contd. of page 5)

· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **14.1 UN-Number**	
· **ADR, IMDG, IATA**	UN1950
· **14.2 UN proper shipping name**	
· **ADR**	1950 AEROSOLS
· **IMDG**	AEROSOLS
· **IATA**	AEROSOLS, flammable
· **14.3 Transport hazard class(es)**	
· **ADR**	
· **Class**	2 5F Gases.
· **Label**	2.1
· **IMDG, IATA**	
· **Class**	2.1
· **Label**	2.1
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	Void
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Warning: Gases.
· **Danger code (Kemler):**	-
· **EMS Number:**	F-D,S-U
· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	1L
· **Transport category**	2

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014 Version number 1 Revision: 25.06.2014

Trade name: *RIDGID HIGH PERFORMANCE THREAD CUTTING OIL*

(Contd. of page 6)

· **Tunnel restriction code**	D

15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals.
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**

F+ Extremely flammable

· **Risk phrases:**
12 Extremely flammable.

· **Safety phrases:**
1/2 Keep locked up and out of the reach of children.
16 Keep away from sources of ignition - No smoking.
29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
46 If swallowed, seek medical advice immediately and show this container or label.
51 Use only in well-ventilated areas.

· **Special labelling of certain preparations:**
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
Do not spray on a naked flame or any incandescent material.

· **Classification in accordance with Directive 75/324/EEC:** Extremely flammable

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
R12 Extremely flammable.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Department issuing MSDS:** Customer Service +32 (0) 16380211 (Office hours)

Material Safety Data Sheet
The Dow Chemical Company

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
D.E.R. 330 EPO Y RESIN

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview
Color: Yellow
Physical State: viscous, Liquid.
Odor: Odorless to mild
Hazards of product:

WARNING May cause allergic skin reaction. May cause eye irritation. May cause skin irritation. Isolate area.

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects
Eye Contact: May cause moderate eye irritation.
Skin Contact: Brief contact may cause moderate skin irritation with local redness.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Skin Sensitization: Has caused allergic skin reactions in humans. Has demonstrated the potential for contact allergy in mice.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material, mist or aerosols may cause respiratory irritation.
Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.
Cancer Information: Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBPA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBPA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBPA is carcinogenic.

3. Composition Information

This product is a substance.

Component	CAS #	Amount
Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	100.0 %

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Inhalation: Move person to fresh air; if effects occur, consult a physician.
Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.
Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.
Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of immediate medical attention and special treatment needed
No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Suitable extinguishing media
Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phenolics. Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Sand. Polypropylene fiber products. Polyethylene fiber products. Remove residual with soap and hot water. Collect in suitable and properly labeled containers. Residual can be removed with solvent. Solvents are not recommended for clean-up unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent Safety Data Sheet for handling information and exposure guidelines. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling
General Handling: Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid use of electric band heaters. Failures of electric band heaters have been reported to cause drums of liquid epoxy resin to explode and catch fire.

Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire. See Section 8, E POSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Recommended pumping and storage temperature for bulk shipments is 60°C (140°F) Additional storage and handling information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure.

Shelf life: Use within	**Storage temperature:**
24 Months	2 - 43 °C 35.6 - 109.4 °F

8. Exposure Controls / Personal Protection

Exposure Limits

None established

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance	
Physical State	viscous, Liquid.
Color	Yellow
Odor	Odorless to mild
Odor Threshold	No test data available
pH	No test data available
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	320 °C (608 °F) *Differential Scanning Calorimetry (DSC)* decomposition.

Flash Point - Closed Cup	264 - 268 °C (507 - 514 °F) *EC Method A9*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No
Flammable Limits In Air	**Lower**: Not applicable **Upper**: Not applicable
Vapor Pressure	0.0000001 Pa 25 °C *EC Method A4*
Vapor Density (air = 1)	no data available
Specific Gravity (H2O = 1)	1.16 20 °C/20 °C *Literature*
Solubility in water (by weight)	5.4 - 8.4 mg/l 20 °C *EU Method A.6 (Water Solubility)*
Partition coefficient, n-octanol/water (log Pow)	3.242 *Estimated.*
Autoignition Temperature	Not applicable
Decomposition Temperature	No test data available
Dynamic Viscosity	7,000 - 10,000 mPa.s 25 °C *ASTM D445*
Kinematic Viscosity	No test data available
Explosive properties	No
Oxidizing properties	No
Liquid Density	1.16 g/cm3 25 °C *ASTM D4052*
Molecular Weight	Not determined
Particle Size	Not applicable
Henry's Law Constant (H)	4.93E-05 Pa m3/mole.; 25 °C

10. Stability and Reactivity

Reactivity
No dangerous reaction known under conditions of normal use.

Chemical stability
Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions
Polymerization will not occur by itself. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

Conditions to Avoid: Avoid short term exposures to temperatures above 300 °C (572 °F). Avoid prolonged exposure to temperatures above 250 °C (482 °F). Potentially violent decomposition can occur above 350 °C (662 °F). Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Acids. Bases. Avoid unintended contact with amines.

Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide, and water.

11. Toxicological Information

Acute Toxicity
Ingestion
LD50, rat > 15,000 mg/kg
Dermal

LD50, rabbit 23,000 mg/kg

Inhalation

The LC50 has not been determined.

Eye damage/eye irritation

May cause moderate eye irritation.

Skin corrosion/irritation

Brief contact may cause moderate skin irritation with local redness.

Sensitization

Skin

Has caused allergic skin reactions in humans. Has demonstrated the potential for contact allergy in mice.

Respiratory

No relevant data found.

Repeated Dose Toxicity

Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.

Chronic Toxicity and Carcinogenicity

Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBPA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBPA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBPA is carcinogenic.

Developmental Toxicity

Resins based on the diglycidyl ether of bisphenol A (DGEBPA) did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

Reproductive Toxicity

In animal studies, did not interfere with reproduction.

Genetic Toxicology

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

12. Ecological Information

Toxicity

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: 2 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 1.8 mg/l

Aquatic Plant Toxicity

ErC50, Scenedesmus capricornutum (fresh water algae), static test, Growth rate inhibition, 72 h: 11 mg/l

Toxicity to Micro-organisms

IC50; Bacteria, 18 h: > 42.6 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.3 mg/l

Persistence and Degradability

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
12 %	28 d	OECD 302B Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
6.69E-11 cm3/s	1.92 h	Estimated.

Theoretical Oxygen Demand: 2.35 mg/mg

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.242 Estimated.

Mobility in soil

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000)., Given its very low Henry s constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient, soil organic carbon/water (Koc): 1,800 - 4,400 Estimated.
Henry's Law Constant (H): 4.93E-05 Pa m3/mole.; 25 °C

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk

NOT REGULATED

DOT Bulk

NOT REGULATED

IMDG

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S
Technical Name: Epoxy resin
Hazard Class: 9 **ID Number:** UN 3082 **Packing Group:** PG III
EMS Number: F-A,S-F
Marine pollutant: Yes

ICAO/IATA

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: Epoxy resin
Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III
Cargo Packing Instruction: 964
Passenger Packing Instruction: 964

Additional Information

MARINE POLLUTANT (epoxy resin)

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

Remarks:

Liquid Epoxy Resins (LERs) are made by reacting bisphenol A and epichlorohydrin. Dow uses both CAS No. 25085-99-8 and 25068-38-6 for its LERs. Other manufacturers use CAS No. 25068-38-6 for their LERs. Accordingly, LER manufacturers consider that derivatives of LERs may be described using either CAS number as a starting material.

16. Other Information

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System

NFPA	Health	Fire	Reactivity
	1	1	2

Recommended Uses and Restrictions

Identified uses

Used in applications such as: Adhesives. Casting. Tooling. Civil engineering. Composites. Automotive coatings. Can coatings. Coil coatings. Marine and protective coatings. Photocure industrial coating. Potting and encapsulation.

Revision

Identification Number: 79629 / 0000 / Issue Date 06/16/2014 / Version: 5.2
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

SECTION 1: Identification

Product Identifier	**No. 2 Diesel Fuel**
Other means of identification	2DSL ULS (All Grades); 2DSL HS (All Grades); 2DSL LS (All Grades); CARB DSL (All Grades); DIST CARB-Diesel (All Grades); Distillate,Diesel (All Grades); Gas Oil (All Grades); Hydrodewaxer Diesel (All Grades); Diesel Fuel (All Grades); EPA Diesel Fuel (All Grades); No. 2 Diesel (All Grades); No. 2 Diesel Fuel Oil (All Grades); No. 2 Distillate; No. 2 Diesel with Renewable Diesel (All Grades); Super Diesel Fuel (All Grades); Distillate Blend Stock; Fuels, Diesel; Virgin Diesel Fuel; PCR - HOD – Heating Oil Distillate; Diesel, Dyed and Undyed
SDS Number	**001847**
MARPOL Annex I Category	Gas Oils, Including Ship s Bunkers
Relevant identified uses	Fuel
Uses advised against	All others
24 Hour Emergency Phone Number	CHEMTREC 1-800-424-9300 CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier	**SDS Information**
Phillips 66 Company P.O. Box 4428 Houston, Texas 77210	Phone: 800-762-0942 Email: SDS P66.com URL: www.Phillips66.com

SECTION 2: Hazard identification

Classified Hazards

H226 - Flammable liquids -- Category 3
H315 -- Skin corrosion/irritation -- Category 2
H304 -- Aspiration Hazard -- Category 1
H332 -- Acute toxicity, Inhalation -- Category 4
H373 -- Specific target organ toxicity (repeated exposure) -- Category 2
H351 -- Carcinogenicity -- Category 2
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2

Hazards Not Otherwise Classified (HNOC)

PHNOC: Electrostatic charge may be generated during pumping and other operations

HHNOC: None known

Label Elements

DANGER

Flammable liquid and vapor
Causes skin irritation
May be fatal if swallowed and enters airways
Harmful if inhaled
May cause damage to organs through prolonged or repeated exposure
Suspected of causing cancer
Toxic to aquatic life with long lasting effects

Obtain special instructions before use; Do not handle until all safety precautions have been read and understood; Keep away from heat/sparks/open flames/hot surfaces. - No smoking; Ground/bond container and receiving equipment; Use only non-sparking tools; Take precautionary measures against static discharge; Do not breathe dust/fume/gas/mist/vapours/spray; Wash skin thoroughly after handling; Use only outdoors or in a well-ventilated area; Avoid release to the environment; Wear protective gloves/protective clothing and eye/face protection; IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician; Do NOT induce vomiting; IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower; IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing; Call a POISON CENTER or doctor/physician if you feel unwell; Take off contaminated clothing and wash before reuse; In case of fire: Use CO2, dry chemical, or foam for extinction; Store in a well-ventilated place. Keep cool; Dispose of contents/container to an approved waste disposal plant

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration[1]
Fuels, diesel, no. 2	68476-34-6	95-100
Naphthalene	91-20-3	1

All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Most important symptoms and effects, both acute and delayed: While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to the hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 1 **Flammability:** 2 **Instability:** 0

0 (Minimal)
1 (Slight)
2 (Moderate)
3 (Serious)
4 (Severe)

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones,

computers, calculators, and pagers which have not been certified as intrinsically safe) Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

For use as a motor fuel only. Do not use as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Diesel engine exhaust contains hazardous combustion products and has been identified as a cancer hazard. Exposure should be minimized to reduce potential risk.

Static Accumulation Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that special slow load procedures for "switch loading" are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106, Flammable and Combustible Liquids , National Fire Protection Association (NFPA 77, Recommended Practice on Static Electricity , and/or the American Petroleum Institute (API) Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents .

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Chemical Name	ACGIH	OSHA	Phillips 66
Fuels, diesel, no. 2	TWA: 100 mg/m^3 inhalable fraction and vapor Skin	---	---
Naphthalene	TWA: 10 ppm Skin	TWA: 10 ppm TWA: 50 mg/m^3 Carcinogen	0.2 ppm TWA8hr

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator s use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer s instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly

clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance: Straw colored to dyed red
Physical Form: Liquid
Odor: Diesel fuel
Odor Threshold: No data
pH: Not applicable
Vapor Density (air=1): > 3
Upper Explosive Limits (vol % in air): 10.0
Lower Explosive Limits (vol % in air): 0.3
Evaporation Rate (nBuAc=1): 1
Particle Size: Not applicable
Percent Volatile: Negligible ambient conditions
Flammability (solid, gas): Not applicable

Flash Point: 125 - 180 °F / 52 - 82 °C
Test Method: Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
Initial Boiling Point/Range: 300 - 690 °F / 149 - 366 °C
Vapor Pressure: 0.40 mm Hg
Partition Coefficient (n-octanol/water) (Kow): No data
Melting/Freezing Point: No data
Auto-ignition Temperature: 500 °F / 260 °C
Decomposition Temperature: No data
Specific Gravity (water=1): 0.81-0.88 60 F (15.6 C)
Bulk Density: 7.08 lbs/gal
Viscosity: No data
Solubility in Water: Negligible

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Harmful if inhaled		4.65 mg/L (mist)
Dermal	Unlikely to be harmful		>2 g/kg
Oral	Unlikely to be harmful		> 5 g/kg

Aspiration Hazard: May be fatal if swallowed and enters airways

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated

exposure. Repeated dermal application of petroleum gas oils for 90 days resulted in decreased liver, thymus, and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy and necrosis, decreased hematopoesis and lymphocyte depletion.

Carcinogenicity: Suspected of causing cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity.

Other Comments: Diesel engine exhaust has been classified by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a carcinogen.

Information on Toxicological Effects of Components

Naphthalene

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

SECTION 12: Ecological information

GHS Classification:
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2
Toxic to aquatic life with long lasting effects.

Toxicity: Experimental studies of gas oils show that acute aquatic toxicity values are typically in the range 2-20 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. They should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment.

Persistence and Degradability: Gas oils are complex combinations of individual hydrocarbon species. Based on the known or expected properties of individual constituents, category members are not predicted to be readily biodegradable. Some hydrocarbon constituents of gas oils are predicted to meet the criteria for persistence; on the other hand, some components can be easily degraded by microorganisms under aerobic conditions.

Persistence per IOPC Fund definition: Non-Persistent

Bioaccumulative Potential: Gas oil components have measured or calculated Log Kow values in the range of 3.9 to 6 which indicates a high potential to bioaccumulate. Lower molecular weight compounds are readily metabolized and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

Mobility in Soil: Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilization is an important loss process and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapors react readily with hydroxyl radicals with half-lives of less than one day. Photoxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water, the majority of components will be adsorbed on sediment. Adsorption is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

EPA Waste Number(s)
• D001 - Ignitability characteristic

SECTION 14: Transport information

U.S. Department of Transportation (DOT)
UN Number: UN1202
UN proper shipping name: Diesel fuel
Transport hazard class(es): 3 *or* Combustible liquid
Packing Group: III
Environmental Hazards: Marine pollutant - Environmentally Hazardous
Special precautions for user: *Combustible liquid classification is dependent on a flash point of >60° C (140° F) and <93° C (200° F).*
NA1993 may be used instead of UN1202 for domestic land transportation.
If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.
Container(s) greater than 5 liters (liquids) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(l)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health Hazard:	Yes
Chronic Health Hazard:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

CERCLA/SARA - Section 313 and 40 CFR 372:
This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Chemical Name	Concentration[1]	de minimis
Naphthalene	1	0.1%

EPA (CERCLA) Reportable Quantity (in pounds):
EPA s Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65:
Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the warning requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Chemical Name	Type of Toxicity
Naphthalene	Cancer

Diesel engine exhaust is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

International Hazard Classification

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

International Inventories
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.

All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

SECTION 16: Other information

Issue Date:	Previous Issue Date:	SDS Number	Status:
27-Jul-2016	27-Jul-2016	001847	FINAL

Revised Sections or Basis for Revision:
Product Name / Synonyms (Section 1)

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS E PRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Safety Data Sheet
DIESTONE DLS SATWIPES PROSAT SOCOSAT - P29003A

Safety Data Sheet dated 6/8/2016, version 3

1. IDENTIFICATION

Product identifier

Mixture identification:

Trade name: DIESTONE DLS SATWIPES PROSAT SOCOSAT

Other means of identification:

MSDS code: P29003A

Recommended use of the chemical and restrictions on use

Recommended use:

Solvent

Cleaner

Industrial uses

Professional uses

Restrictions on use:

No uses advised against are identified.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Company:

SOCOMORE S.A.S.

Zone Industrielle du Prat - CS 23707 - 56037 VANNES CEDEX - France

Tel : +33 (0)2 97 43 76 83 - Fax : +33 (0)2 97 54 20 26

Distributor: Dysol Inc. - 2901 Shamrock Ave. - Forth Worth, TX 76107 / Phone: 1-817-335-1826 / csr-na@socomore.com/ Fax Number: 817-335-2405

Distributor: Socomore Ltd - 5, Coe Avenue - Loughborough - Leicestershire - LE11 4SE - UK - Tel: +44 1509 262040 - Fax: +44 1509 262046

Distributor: Socomore Iberia - Calle Diputació, 260 - 08007 Barcelona - Espana - Tel: +34 917 693 962 - Fax: +34 902 908 966

Distributor: MagChem Inc. 1271, rue Ampère, suite 101, Boucherville, QC, J4B 5Z5 Canada - Tel: 1-450 641 8500 - Fax: 1-450 655 1717

Distributor: Socomore GmbH - c/o MAZARS GmbH - Bernhard-Wicki-Straße 7 - 80636 München - Deutschland - Tel: +49 (0)89 20 70 28 83 - Fax: +49 (0) 89 88 91 98 16

Distributor: Socomore Trading Shangai - 355 East Kang Qiao Road - Kang Qiao Industrial Zone - Pudong - 201315 Shangai - Tel: 862158131133 - Fax: 862158131933

Dystrybutor : SOCOMORE SPzoo - Ul. Piekna 18, 00-549 Warszawa Polska - Tel : +48 (22) 486 084 41 14 - Fax : +48 (22) 621 61 09

Distributor/Manufacturer: Socomore Ireland Ltd. - Meenane, Watergrasshill, Co. Cork, Ireland - Tel +353 21 4889922 / Fax +353 21 4889923 / ireland@socomore.com

Competent person responsible for the safety data sheet:

techdirsocomore@socomore.com

Emergency phone number

CHEMTEL: 1-800-255-3924 (USA) / CANUTEC: 1-613-996-6666 (CANADA)

2. HAZARD(S) IDENTIFICATION

Classification of the chemical

- Warning, Flam. Liq. 3, Flammable liquid and vapour.
- Warning, STOT SE 3, May cause drowsiness or dizziness.

Label elements

The product is not classified as dangerous according to OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazard pictograms:

Warning

Hazard statements:

H226 Flammable liquid and vapour.
H336 May cause drowsiness or dizziness.

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing vapours.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves and eye/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor/... if you feel unwell.
P370+P378 In case of fire, use a CO2 fire extinguisher to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

None

Hazards not otherwise classified identified during the classification process:

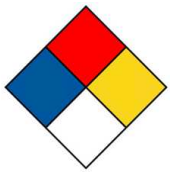
None

Ingredient(s) with unknown acute toxicity:

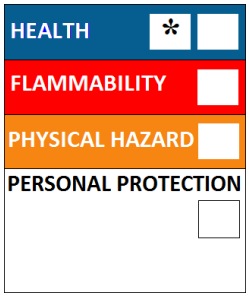
None.

Additional classification information

NFPA rating:



HMIS rating:



3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

N.A.

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

>= 50% - < 60% 1-methoxy-2-propanol; monopropylene glycol methyl ether

REACH No.: 01-2119457435-35, Index number: 603-064-00-3, CAS: 107-98-2, EC: 203-539-1

B.6/3 Flam. Liq. 3 H226

A.8/3 STOT SE 3 H336

>= 5% - < 7% HYDROCARBONS, C9-C11, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS

REACH No.: 01-2119463258-33, EC: 919-857-5

B.6/3 Flam. Liq. 3 H226

A.10/1 Asp. Tox. 1 H304

A.8/3 STOT SE 3 H336

4. FIRST-AID MEASURES

Description of necessary measures

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Do not induce vomiting. Obtain a medical examination.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

Most important symptoms/effects, acute and delayed

None

Indication of immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

No particular treatment.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

In case of fire, use a CO2 fire extinguisher to extinguish.

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the chemical

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

Hazardous combustion products:

None

Explosive properties: N.A.

Oxidizing properties: N.A.

Special protective equipment and precautions for fire-fighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Remove persons to safety.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

Methods and materials for containment and cleaning up

Wash with plenty of water.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Do not use on extensive surface areas in premises where there are occupants.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contamined clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Avoid accumulating electrostatic charge.
Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Cool and adequately ventilated.
Safety electric system.
Storage temperature:
Store at ambient temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

- OEL Type: National - LTE(8h): 188 mg/m3, 50 ppm - STE: 375 mg/m3, 100 ppm - Notes: FRENCH-INRS- TMP N°84
- OEL Type: National - LTE: 370 mg/m3, 100 ppm - Notes: GERMAN
- OEL Type: EU - LTE(8h): 375 mg/m3, 100 ppm - STE: 563 mg/m3, 150 ppm - Notes: Bold-type: Indicative Occupational Exposure Limit Values [2,3] and Limit Values for Occupational Exposure [4] (for references see bibliography)
- OEL Type: ACGIH - LTE(8h): 50 ppm - STE: 100 ppm - Notes: A4 - Eye and URT irr

DNEL Exposure Limit Values

N.A.

PNEC Exposure Limit Values

N.A.

Appropriate engineering controls:

None

Individual protection measures

Eye protection:

Safety goggles (EN 166)

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Suitable gloves type: NF EN374
Butyl caoutchouc (butyl rubber).

Respiratory protection:

Use adequate protective respiratory equipment.
Filtering Half-face mask (NF EN 149), class FFP1
Mask with filter "A1" , brown colour (NF EN14387)

Thermal Hazards:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Value	Method:	Notes
Appearance and colour:	SOLID	--	--
Odour:	N.A.	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	Not Relevant	--	--
Initial boiling point and boiling range:	117 °C	--	--
Flash Point:	--	--	--
Evaporation rate:	0.6	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	6,8 mmHg (20°C)	--	--
Vapour density:	3.4	--	--
Relative density:	< 1	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	N.A.	--	--
Auto-ignition temperature:	276°C	--	--
Decomposition temperature:	N.A.	--	--

Viscosity:	N.A.	--	--
Explosive properties:	N.A.	--	--
Oxidizing properties:	N.A.	--	--

9.2. Other information

Properties	**Value**	**Method:**	**Notes**
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

10. STABILITY AND REACTIVITY

Reactivity

It may generate dangerous reactions (See subsections below)

Chemical stability

It may generate dangerous reactions (See subsections below)

Possibility of hazardous reactions

None

Conditions to avoid

Avoid accumulating electrostatic charge.

Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

Hazardous decomposition products

None.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Toxicological information of the mixture:

N.A.

Toxicological information of the main substances found in the mixture:

HYDROCARBONS, C9-C11, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 4951 mg/m3

Substance(s) listed on the NTP report on Carcinogens:

None.

Substance(s) listed on the IARC Monographs:

None.

Substance(s) listed as OSHA Carcinogen(s):

None.

Substance(s) listed as NIOSH Carcinogen(s):

None.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Adopt good working practices, so that the product is not released into the environment.

HYDROCARBONS, C9-C11, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 1000 mg/l - Duration h: 96 - Notes: Oncorhynchus mykiss

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 72 - Notes: Pseudokirchnerella subcapitata

Persistence and degradability

N.A.

Bioaccumulative potential

N.A.

Mobility in soil

N.A.

Other adverse effects

No harmful effects expected.

13. DISPOSAL CONSIDERATIONS

Waste treatment and disposal methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

14. TRANSPORT INFORMATION

UN number

ADR-UN Number:	3175
DOT number:	UN3175
IATA-UN Number:	3175
IMDG-UN Number:	3175

UN proper shipping name

ADR-Shipping Name:	SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a

flash-point up to 60 °C (1-methoxy-2-propanol; monopropylene glycol methyl ether, 2-methoxy-1-methylethyl acetate)

DOT-Shipping Name:	SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a flash-point up to 60 °C (1-methoxy-2-propanol; monopropylene glycol methyl ether, 2-methoxy-1-methylethyl acetate)
IATA-Shipping Name:	SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a flash-point up to 60 °C (1-methoxy-2-propanol; monopropylene glycol methyl ether, 2-methoxy-1-methylethyl acetate)
IMDG-Shipping Name:	SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a flash-point up to 60 °C (1-methoxy-2-propanol; monopropylene glycol methyl ether, 2-methoxy-1-methylethyl acetate)

N.A.

Transport hazard class(es)

ADR-Class:	4.1
DOT Hazard Class:	4.1
IATA-Class:	4.1
IATA-Label:	4.1
IMDG-Class:	4.1

N.A.

Packing group

ADR-Packing Group:	II
DOT Packing group:	II
IATA-Packing group:	II
IMDG-Packing group:	II

Environmental hazards

ADR-Enviromental Pollutant:	No
IMDG-Marine pollutant:	No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

N.A.

Special precautions

DOT Special provisions:	47, IB6, IP2, T3, TP33
DOT Labels: 4.1	
ADR-Subsidiary risks:	-
ADR-S.P.:	216 274 601
ADR-Tunnel Restriction Code:	2 (E)
IATA-Passenger Aircraft:	445
IATA-Subsidiary risks:	-
IATA-Cargo Aircraft:	448
IATA-S.P.:	A46
IATA-ERG:	3L
IMDG-EmS:	F-A , S-I
IMDG-Subsidiary risks:	-

IMDG-Storage category: Category B
IMDG-Storage notes: -
Q.L.: 1K
Q.E.: E2

15. REGULATORY INFORMATION

USA - Federal regulations

TSCA - Toxic Substances Control Act
TSCA inventory: all the components are listed on the TSCA inventory.
TSCA listed substances:
1-methoxy-2-propanol; monopropylene glycol methyl ether is listed in TSCA Section 8b, Section 8d HSDR.

SARA - Superfund Amendments and Reauthorization Act
Section 302 – Extremely Hazardous Substances: no substances listed.
Section 304 – Hazardous substances: no substances listed.
Section 313 – Toxic chemical list: no substances listed.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
No substances listed.

CAA - Clean Air Act
CAA listed substances:
1-methoxy-2-propanol; monopropylene glycol methyl ether is listed in CAA Section 112(b) - HON.

CWA - Clean Water Act
CWA listed substances:
None.

USA - State specific regulations

California Proposition 65
Substance(s) listed under California Proposition 65:
None.

Massachusetts Right to know
Substance(s) listed under Massachusetts Right to know:
1-methoxy-2-propanol; monopropylene glycol methyl ether.

New Jersey Right to know
Substance(s) listed under New Jersey Right to know:
1-methoxy-2-propanol; monopropylene glycol methyl ether.

Pennsylvania Right to know
Substance(s) listed under Pennsylvania Right to know:
1-methoxy-2-propanol; monopropylene glycol methyl ether.
The following substance(s) in this product has/have an identification by CAS number either in countries not affected by the REACH regulation or in regulations not yet updated to reflect the new naming convention for hydrocarbon solvents:
HYDROCARBONS, C9-C11, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS (CAS: 64742-48-9)

16. OTHER INFORMATION

Full text of phrases referred to in Section 3:

H226 Flammable liquid and vapour.
H336 May cause drowsiness or dizziness.
H304 May be fatal if swallowed and enters airways.

Safety Data Sheet dated 6/8/2016, version 3
Disclaimer:
The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. The information relates only to the specific material and may not be valid for such material used in combination with any other material or in any process.
This Safety Data Sheet cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
LTE:	Long-term exposure.
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STE:	Short-term exposure.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.

TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).

SAFETY DATA SHEET

DOW CORNING(R) 7091 ADHESIVE SEALANT BLACK

Version	Revision Date:	SDS Number:	Date of last issue: 09/23/2015
3.1	11/23/2015	935778-00006	Date of first issue: 12/11/2014

SECTION 1. IDENTIFICATION

Product name : DOW CORNING(R) 7091 ADHESIVE SEALANT BLACK

Product code : 000000000001781081

Manufacturer or supplier's details

Company name of supplier : Dow Corning Corporation

Address : South Saginaw Road
Midland Michigan 48686

Telephone : (989) 496-6000

Emergency telephone : 24 Hour Emergency Telephone : (989) 496-5900
CHEMTREC : (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Reproductive toxicity : Category 2

GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H361 Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
P405 Store locked up.
Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Silicone elastomer

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Calcium carbonate	471-34-1	>= 30 - 50
Carbon black	1333-86-4	>= 1 - 5
Stearic acid	57-11-4	>= 1 - 5
Octamethylcyclotetrasiloxane	556-67-2	>= 0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Suspected of damaging fertility or the unborn child.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.

Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Metal oxides Silicon oxides Formaldehyde
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under E POSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Do not swallow.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Calcium carbonate	471-34-1	TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
Carbon black	1333-86-4	TWA	3.5 mg/m3	NIOSH REL
		TWA	3.5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	3 mg/m3	ACGIH
Stearic acid	57-11-4	TWA	10 mg/m3	ACGIH
Octamethylcyclotetrasiloxane	556-67-2	TWA	10 ppm	DCC OEL

Engineering measures : Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.
Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limi-

tations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m3 - respirable particles, 10 mg/m3 - inhalable particles.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Impervious gloves

Remarks : For prolonged or repeated contact use protective gloves. Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:
Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Color	:	black
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	Not applicable
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	Not applicable
Flash point	:	> 100 °C Method: closed cup
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Not classified as a flammability hazard
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	Not applicable
Relative vapor density	:	No data available
Relative density	:	1.39
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Methyl alcohol is formed upon contact with water or humid air. Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents

Hazardous decomposition products

Thermal decomposition	:	Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Ingredients:

Calcium carbonate:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 420 Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat): > 3 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Carbon black:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0046 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Stearic acid:
Acute oral toxicity : LD50: > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 0.1621 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Octamethylcyclotetrasiloxane:
Acute oral toxicity : LD50 (Rat): > 4,800 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on test data

Acute inhalation toxicity : LC50 (Rat): 2975 ppm
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on test data

Acute dermal toxicity : LD50 (Rabbit): > 2.5 ml/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on test data

Skin corrosion/irritation

Not classified based on available information.

Ingredients:

Calcium carbonate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Carbon black:
Species: Rabbit
Result: No skin irritation

Stearic acid:
Species: Rabbit
Result: No skin irritation

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No skin irritation
Remarks: Based on test data

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients:

Calcium carbonate:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Carbon black:
Species: Rabbit
Result: No eye irritation

Stearic acid:
Species: Rabbit
Result: No eye irritation

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No eye irritation
Remarks: Based on test data

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Ingredients:

Calcium carbonate:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative

Carbon black:
Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Stearic acid:
Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Octamethylcyclotetrasiloxane:
Assessment: Does not cause skin sensitization.

Test Type: Maximization Test
Species: Guinea pig
Remarks: Based on test data

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Calcium carbonate:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Result: negative

Carbon black:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Stearic acid:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Octamethylcyclotetrasiloxane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

: Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: negative
Remarks: Based on test data

: Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on test data

: Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative
Remarks: Based on test data

: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative
Remarks: Based on test data

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: inhalation (vapor)
Result: negative

Remarks: Based on test data

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Not classified based on available information.

IARC Group 2B: Possibly carcinogenic to humans

Carbon black 1333-86-4

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Ingredients:

Calcium carbonate:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Stearic acid:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Octamethylcyclotetrasiloxane:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat, male and female
Application Route: inhalation (vapor)
Symptoms: Effects on fertility.
Remarks: Based on test data

Effects on fetal development : Test Type: Prenatal development toxicity study (teratogenicity)
Species: Rabbit
Application Route: inhalation (vapor)
Symptoms: No effects on fetal development.
Remarks: Based on test data

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Ingredients:

Carbon black:
Routes of exposure: inhalation (dust/mist/fume)
Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Octamethylcyclotetrasiloxane:
Routes of exposure: Ingestion
Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Routes of exposure: inhalation (vapor)
Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

Routes of exposure: Skin contact
Assessment: No significant health effects observed in animals at concentrations of 200 mg/kg bw or less.

Repeated dose toxicity

Ingredients:

Calcium carbonate:
Species: Rat

NOAEL: 1,000 mg/kg
Application Route: Ingestion
Exposure time: 6 Weeks
Method: OECD Test Guideline 422

Carbon black:
Species: Rat
NOAEL: 1 mg/m3
LOAEL: 7 mg/m3
Application Route: Inhalation
Test atmosphere: dust/mist
Exposure time: 90 d
Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Stearic acid:
Species: Rat
NOAEL: 1,000 mg/kg
Application Route: Ingestion
Exposure time: 42 Days
Method: OECD Test Guideline 422

Octamethylcyclotetrasiloxane:
Species: Rat
Application Route: Ingestion
Remarks: Based on test data

Species: Rat
Application Route: inhalation (vapor)
Remarks: Based on test data

Species: Rabbit
Application Route: Skin contact
Remarks: Based on test data

Aspiration toxicity

Not classified based on available information.

Further information

Ingredients:

Octamethylcyclotetrasiloxane:
Remarks: Results from a 2 year repeated vapor inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Calcium carbonate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	ErC50 (Desmodesmus subspicatus (green algae)): > 14 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

Carbon black:

Toxicity to fish	:	LC0 (Danio rerio (zebra fish)): 1,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 5,600 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to algae	:	NOEC (Desmodesmus subspicatus (green algae)): 10,000 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

Stearic acid:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): > 10,000 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 4.8 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: No toxicity at the limit of solubility.
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.9 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 0.22 mg/l Exposure time: 21 d Method: OECD Test Guideline 211 Remarks: No toxicity at the limit of solubility.

Toxicity to bacteria	:	EC10 (Pseudomonas putida): 883 mg/l Exposure time: 16 h

Octamethylcyclotetrasiloxane:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.022 mg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia sp.): > 0.015 mg/l Exposure time: 48 h Remarks: No toxicity at the limit of solubility.
Toxicity to algae	:	EC50: > 0.022 mg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility. NOEC: 0.022 mg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility.
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): >= 0.0044 mg/l Remarks: No toxicity at the limit of solubility.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 0.0079 mg/l Exposure time: 21 d Remarks: No toxicity at the limit of solubility.
Toxicity to bacteria	:	IC50: > 10,000 mg/l Method: ISO 8192
Ecotoxicology Assessment Chronic aquatic toxicity	:	May cause long lasting harmful effects to aquatic life.

Persistence and degradability

Ingredients:

Stearic acid:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 93 % Exposure time: 28 d Method: OECD Test Guideline 301B

Octamethylcyclotetrasiloxane:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 3.7 % Exposure time: 28 d Method: OECD Test Guideline 310
Stability in water	:	Degradation half life: 69.3 - 144 h (24.6 °C) pH: 7 Method: OECD Test Guideline 111

Bioaccumulative potential

Ingredients:

Stearic acid:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 238 - 288
Remarks: Based on data from similar materials

Partition coefficient: n-octanol/water : log Pow: > 5

Octamethylcyclotetrasiloxane:

Partition coefficient: n-octanol/water : log Pow: 6.48 (25.1 °C)

Mobility in soil

No data available

Other adverse effects

Ingredients:

Octamethylcyclotetrasiloxane:

Results of PBT and vPvB assessment : Remarks: Octamethylcyclotetrasiloxane (D4) meets the current REACh Annex III criteria for PBT and vPvB. In Canada, D4 has been assessed and deemed to meet the PiT criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Resource Conservation and Recovery Act (RCRA) : This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Methanol	67-56-1	5000	
Ethylenediamine	107-15-3	5000	

: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	

: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Calcium carbonate	471-34-1	30 - 50 %
Dimethyl siloxane, hydroxy-terminated	70131-67-8	30 - 50 %
Dimethyl siloxane, trimethylsiloxy-terminated	63148-62-9	5 - 10 %
Carbon black	1333-86-4	1 - 5 %
Methanol	67-56-1	0 - 0.1 %

New Jersey Right To Know

Calcium carbonate	471-34-1	30 - 50 %
Dimethyl siloxane, hydroxy-terminated	70131-67-8	30 - 50 %
Dimethyl siloxane, trimethylsiloxy-terminated	63148-62-9	5 - 10 %
Carbon black	1333-86-4	1 - 5 %
Stearic acid	57-11-4	1 - 5 %

California Prop. 65 WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Methanol	67-56-1

The ingredients of this product are reported in the following inventories:

NZIoC : All ingredients listed or exempt.

REACH : All ingredients (pre-)registered or exempt.

TSCA : All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

PICCS : All ingredients listed or exempt.

KECI : All ingredients listed, exempt or notified.

ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from inventory listing.

IECSC : All ingredients listed or exempt.

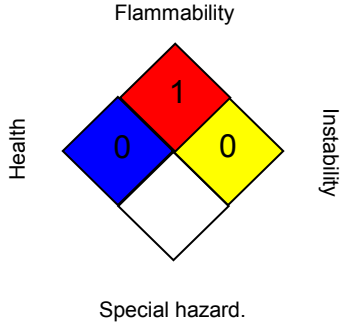
AICS : All ingredients listed or exempt.

DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	0*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, = Chronic

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
DCC OEL	:	Dow Corning Guide
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
DCC OEL / TWA	:	Time weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA Z-1 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR -

No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Revision Date	:	11/23/2015

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

SAFETY DATA SHEET

DOW CORNING

DOW CORNING(R) 7091 ADHESIVE SEALANT GREY

Version	Revision Date:	MSDS Number:	Date of last issue: 12/11/2014
2. 0	03/16/2015	936009-00002	Date of first issue: 12/11/2014

SECTION 1. IDENTIFICATION

Product name : DOW CORNING(R) 7091 ADHESIVE SEALANT GREY

Product code : 000000000004086296

Manufacturer or supplier's details

Company name of supplier : Dow Corning Corporation

Address : South Saginaw Road
Midland Michigan 48686

Telephone : (989) 496-6000

Emergency telephone : 24 Hour Emergency Telephone : (989) 496-5900
CHEMTREC : (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Reproductive toxicity : Category 2

GHS Label element

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H361 Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
P405 Store locked up.
Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Silicone elastomer

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Calcium carbonate	471-34-1	>= 30 - < 50
Titanium dioxide	13463-67-7	>= 1 - < 5
Stearic acid	57-11-4	>= 1 - < 5
Distillates (petroleum), hydrotreated middle	64742-46-7	>= 1 - < 5
Carbon black	1333-86-4	>= 0.1 - < 1
Octamethylcyclotetrasiloxane	556-67-2	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.
Get medical attention if symptoms occur.

In case of eye contact : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Suspected of damaging fertility or the unborn child.

Protection of first-aiders : No special precautions are necessary for first aid responders.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Dry chemical

Carbon dioxide (CO2)

Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Metal oxides Silicon oxides Formaldehyde
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	Use only with adequate ventilation.
Advice on safe handling	:	Avoid prolonged or repeated contact with skin. Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.
Conditions for safe storage	:	Keep in properly labeled containers. Store in accordance with the particular national regulations.
Materials to avoid	:	Do not store with the following product types: Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Calcium carbonate	471-34-1	TWA (Respirable)	5 mg/m3 (Calcium carbonate)	NIOSH REL
		TWA (total)	10 mg/m3 (Calcium carbonate)	NIOSH REL
Titanium dioxide	13463-67-7	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA	10 mg/m3 (Titanium dioxide)	ACGIH
Stearic acid	57-11-4	TWA	10 mg/m3	ACGIH
Distillates (petroleum), hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
		TWA (Mist)	5 mg/m3	OSHA Z-1
Carbon black	1333-86-4	TWA	3.5 mg/m3	NIOSH REL
		TWA	3.5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	3 mg/m3	ACGIH
Octamethylcyclotetrasiloxane	556-67-2	TWA	10 ppm	DCC OEL

Engineering measures : Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.
Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at work-

places have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m3 - respirable particles, 10 mg/m3 - inhalable particles.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks : For prolonged or repeated contact use protective gloves. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment: Safety glasses

Skin and body protection : Skin should be washed after contact.

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : paste

Color : gray

Odor : No data available

Odor Threshold : No data available

pH : Not applicable

Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	Not applicable
Flash point	:	> 100 °C Method: Seta closed cup
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Not classified as a flammability hazard
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	Not applicable
Relative vapor density	:	No data available
Relative density	:	1.39
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Methyl alcohol is formed upon contact with water or humid air.

Hazardous decomposition products will be formed at elevated temperatures.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products
Thermal decomposition : Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Skin contact
Ingestion
Eye contact

Acute toxicity
Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Ingredients:

Calcium carbonate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Titanium dioxide:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Stearic acid:

Acute oral toxicity : LD50: > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 0.1621 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Distillates (petroleum), hydrotreated middle:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5,000 mg/m3
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Carbon black:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0046 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Octamethylcyclotetrasiloxane:

Acute oral toxicity : LD50 (Rat): > 4,800 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on test data

Acute inhalation toxicity : LC50 (Rat): 2975 ppm
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on test data

Acute dermal toxicity : LD50 (Rabbit): > 2.5 ml/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on test data

Skin corrosion/irritation

Not classified based on available information.

Ingredients:

Calcium carbonate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Titanium dioxide:
Species: Rabbit
Result: No skin irritation

Stearic acid:
Species: Rabbit
Result: No skin irritation

Distillates (petroleum), hydrotreated middle:
Assessment: Repeated exposure may cause skin dryness or cracking.

Carbon black:
Species: Rabbit
Result: No skin irritation

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No skin irritation
Remarks: Based on test data

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients:

Calcium carbonate:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Titanium dioxide:
Species: Rabbit
Result: No eye irritation

Stearic acid:
Species: Rabbit
Result: No eye irritation

Distillates (petroleum), hydrotreated middle:
Result: No eye irritation

Carbon black:
Species: Rabbit
Result: No eye irritation

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No eye irritation
Remarks: Based on test data

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Ingredients:

Calcium carbonate:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative

Titanium dioxide:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: negative

Stearic acid:
Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Distillates (petroleum), hydrotreated middle:
Test Type: Human repeat insult patch test (HRIPT)
Routes of exposure: Skin contact
Result: negative

Carbon black:
Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Octamethylcyclotetrasiloxane:
Assessment: Does not cause skin sensitization.

Test Type: Maximization Test (GPMT)
Species: Guinea pig
Remarks: Based on test data

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Calcium carbonate:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Result: negative

Titanium dioxide:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Stearic acid:
Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), hydrotreated middle:
Genotoxicity in vitro : Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative

Carbon black:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Octamethylcyclotetrasiloxane:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

: Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: negative
Remarks: Based on test data

: Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on test data

: Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative
Remarks: Based on test data

: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative
Remarks: Based on test data

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: inhalation (vapor)
Result: negative

Remarks: Based on test data

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Not classified based on available information.

Ingredients:

Titanium dioxide:
Species: Rat
Application Route: inhalation (dust/mist/fume)
Exposure time: 24 Months
Method: OECD Test Guideline 453
Result: positive
Remarks: The mechanism or mode of action may not be relevant in humans.
The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in inhalation studies with animals.

Carbon black:
Species: Rat
Application Route: Inhalation
Exposure time: 2 Years
Result: positive
Target Organs: Lungs
Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Carcinogenicity - Assessment : Sufficient evidence of carcinogenicity in inhalation studies with animals

IARC	Group 2B: Possibly carcinogenic to humans	
	Titanium dioxide	13463-67-7
	Carbon black	1333-86-4
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.	

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Ingredients:

Calcium carbonate:

Effects on fertility	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative
Effects on fetal development	:	Test Type: Reproduction/Developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative

Stearic acid:

Effects on fertility	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative
Effects on fetal development	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative

Octamethylcyclotetrasiloxane:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat, male and female Application Route: inhalation (vapor) Symptoms: Effects on fertility. Remarks: Based on test data
Effects on fetal development	:	Test Type: Prenatal development toxicity study (teratogenicity) Species: Rabbit Application Route: inhalation (vapor) Symptoms: No effects on fetal development. Remarks: Based on test data
Reproductive toxicity - Assessment	:	Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Ingredients:

Carbon black:
Routes of exposure: inhalation (dust/mist/fume)
Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Octamethylcyclotetrasiloxane:
Routes of exposure: Ingestion
Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Routes of exposure: inhalation (vapor)
Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

Routes of exposure: Skin contact
Assessment: No significant health effects observed in animals at concentrations of 200 mg/kg bw or less.

Repeated dose toxicity

Ingredients:

Calcium carbonate:
Species: Rat
NOAEL: 1,000 mg/kg
Application Route: Ingestion
Exposure time: 6 w
Method: OECD Test Guideline 422

Titanium dioxide:
Species: Rat
NOAEL: 24,000 mg/kg
Application Route: Ingestion
Exposure time: 28 d

Species: Rat
NOAEL: 10 mg/m3
Application Route: inhalation (dust/mist/fume)
Exposure time: 2 y
Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Stearic acid:
Species: Rat
NOAEL: 1,000 mg/kg
Application Route: Ingestion
Exposure time: 42 d

Method: OECD Test Guideline 422

Carbon black:
Species: Rat
NOAEL: 1 mg/m3
LOAEL: 7 mg/m3
Application Route: Inhalation
Test atmosphere: dust/mist
Exposure time: 90 d
Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Octamethylcyclotetrasiloxane:
Species: Rat
Application Route: Ingestion
Remarks: Based on test data

Species: Rat
Application Route: inhalation (vapor)
Remarks: Based on test data

Species: Rabbit
Application Route: Skin contact
Remarks: Based on test data

Aspiration toxicity

Not classified based on available information.

Ingredients:

Distillates (petroleum), hydrotreated middle:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Further information

Ingredients:

Octamethylcyclotetrasiloxane:
Remarks: Results from a 2 year repeated vapor inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Based on the available information on its potential to cause harm to human health, Health Canada, in a 2008 screening assessment, has concluded that octamethylcyclotetrasiloxane is not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health (http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=2481B508-1). Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Calcium carbonate:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	: ErC50 (Desmodesmus subspicatus (green algae)): > 14 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

Titanium dioxide:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae	: EC50 (Skeletonema costatum (marine diatom)): > 10,000 mg/l Exposure time: 72 h
Toxicity to bacteria	: EC50: > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Stearic acid:

Toxicity to fish	: LC50 (Leuciscus idus (Golden orfe)): > 10,000 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 4.8 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: No toxicity at the limit of solubility.
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.9 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): > 0.22 mg/l Exposure time: 21 d Method: OECD Test Guideline 211 Remarks: No toxicity at the limit of solubility.

Toxicity to bacteria : EC10 (Pseudomonas putida): 883 mg/l
Exposure time: 16 h

Distillates (petroleum), hydrotreated middle:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 87,556 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOELR: > 1,000 mg/l
Exposure time: 28 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: 5 mg/l
Exposure time: 21 d

Toxicity to bacteria : EC50: > 100 mg/l
Exposure time: 3 h

Carbon black:

Toxicity to fish : LC0 (Danio rerio (zebra fish)): 1,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 5,600 mg/l
Exposure time: 24 h
Method: OECD Test Guideline 202

Toxicity to algae : NOEC (Desmodesmus subspicatus (green algae)): 10,000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Octamethylcyclotetrasiloxane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.022 mg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp.): > 0.015 mg/l
Exposure time: 48 h
Remarks: No toxicity at the limit of solubility.

Toxicity to algae : EC50: > 0.022 mg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility.

NOEC: 0.022 mg/l

Exposure time: 96 h
Remarks: No toxicity at the limit of solubility.

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): >= 0.0044 mg/l
Remarks: No toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 0.0079 mg/l
Exposure time: 21 d
Remarks: No toxicity at the limit of solubility.

Toxicity to bacteria : IC50: > 10,000 mg/l
Method: ISO 8192

Ecotoxicology Assessment
Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

Persistence and degradability

Ingredients:

Stearic acid:
Biodegradability : Result: Readily biodegradable.
Biodegradation: 93 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Distillates (petroleum), hydrotreated middle:
Biodegradability : Result: Inherently biodegradable.

Octamethylcyclotetrasiloxane:
Biodegradability : Result: Not readily biodegradable.
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in water : Degradation half life: 69.3 - 144 h (24.6 °C) pH: 7
Method: OECD Test Guideline 111

Bioaccumulative potential

Ingredients:

Stearic acid:
Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 238 - 288
Remarks: Based on data from similar materials

Partition coefficient: n-octanol/water : log Pow: > 5

Octamethylcyclotetrasiloxane:
Partition coefficient: n-octanol/water : log Pow: 6.48 (25.1 °C)

Mobility in soil

No data available

Other adverse effects

Ingredients:

Octamethylcyclotetrasiloxane:

Results of PBT and vPvB assessment : Remarks: Octamethylcyclotetrasiloxane (D4) meets the current REACh Annex XIII criteria for PBT and vPvB. In Canada, D4 has been assessed and deemed to meet the PiT criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Resource Conservation and Recovery Act (RCRA)	: This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.
Waste from residues	: Dispose of in accordance with local regulations.
Contaminated packaging	: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Methanol	67-56-1	5000	*
Ethylenediamine	107-15-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Cobalt aluminate blue spinel	1345-16-0	0.41 %

US State Regulations

Pennsylvania Right To Know

Calcium carbonate	471-34-1	30 - 50 %
Dimethyl siloxane, hydroxy-terminated	70131-67-8	30 - 50 %
Dimethyl siloxane, trimethylsiloxy-terminated	63148-62-9	5 - 10 %
Titanium dioxide	13463-67-7	1 - 5 %
Distillates (petroleum), hydrotreated middle	64742-46-7	1 - 5 %
Methanol	67-56-1	0 - 0.1 %

New Jersey Right To Know

Calcium carbonate	471-34-1	30 - 50 %
Dimethyl siloxane, hydroxy-terminated	70131-67-8	30 - 50 %
Dimethyl siloxane, trimethylsiloxy-terminated	63148-62-9	5 - 10 %
Titanium dioxide	13463-67-7	1 - 5 %
Stearic acid	57-11-4	1 - 5 %
Cobalt aluminate blue spinel	1345-16-0	0.1 - 1 %
Carbon black	1333-86-4	0.1 - 1 %

California Prop 65 WARNING: This product contains a chemical known in the

	State of California to cause birth defects or other reproductive harm.	
Methanol		67-56-1

The ingredients of this product are reported in the following inventories:

NZIoC	:	All ingredients listed or exempt.
REACH	:	All ingredients (pre-)registered or exempt.
TSCA	:	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
PICCS	:	All ingredients listed or exempt.
KECI	:	All ingredients listed, exempt or notified.
ENCS/ISHL	:	All components are listed on ENCS/ISHL or exempted from inventory listing.
IECSC	:	All ingredients listed or exempt.
AICS	:	All ingredients listed or exempt.
DSL	:	All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

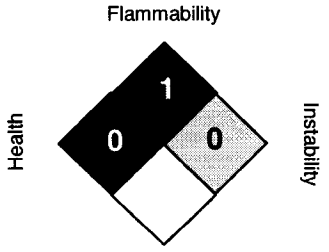
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	0*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
DCC OEL	:	Dow Corning Guide
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
DCC OEL / TWA	:	Time weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average
Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Revision Date	:	03/16/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

SAFETY DATA SHEET
DOWCAL 10 & SOLUTIONS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	DOWCAL 10 & SOLUTIONS
Product number	10410
Synonyms; trade names	DOWCAL10 30% SOL,DOWCAL 10 41% SOL,DOWCAL 10 45% SOL,DOWCAL 10 55% SOL,DOWCAL 10 70% SOL,DOWCAL 10,DOWCAL 10 50%,DOWCAL 10 44%,DOWCAL 10 25%,DOWCAL 10 39%,DOWCAL 10 21%,DOWCAL 34%

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Coolant

1.3. Details of the supplier of the safety data sheet

Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 sds@univar.com +44 1274 267306

1.4. Emergency telephone number

Emergency Contact Number (Office Hours)	+44 1274 267346
Emergency Contact Number (Outside Office Hours)	+441865 407333
Sds No.	10410

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302 STOT RE 2 - H373
Environmental hazards	Not Classified

Classification (67/548/EEC or 1999/45/EC)	Xn;R22.

2.2. Label elements

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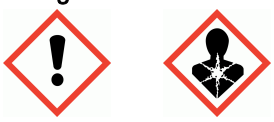
Pictogram



Signal word	Warning
Hazard statements	H302 Harmful if swallowed. H373 May cause damage to organs through prolonged or repeated exposure if swallowed.
Precautionary statements	P260 Do not breathe vapour/spray. P264 Wash contaminated skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P314 Get medical advice/attention if you feel unwell. P330 Rinse mouth. P501 Dispose of contents/container in accordance with national regulations.
Contains	ETHANEDIOL

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

ETHANEDIOL **60-100%**

CAS number: 107-21-1 EC number: 203-473-3 REACH registration number: 01-2119456816-28

Classification	Classification (67/548/EEC or 1999/45/EC)
Acute Tox. 4 - H302 STOT RE 2 - H373	Xn; R48/22, R22

SODIUM BENZOATE **1-5%**

CAS number: 532-32-1 EC number: 208-534-8 REACH registration number: 01-2119460683-35

Classification	Classification (67/548/EEC or 1999/45/EC)
Eye Irrit. 2 - H319	Xi;R36.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Get medical attention immediately. Rinse mouth thoroughly with water.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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4.2. Most important symptoms and effects, both acute and delayed

Ingestion Causes damage to organs through prolonged or repeated exposure if swallowed. Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol: loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Oxides of the following substances: Carbon.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

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Methods for cleaning up Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a well-ventilated place.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

ETHANEDIOL

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate
Sk
Long-term exposure limit (8-hour TWA): WEL 20 ppm 52 mg/m³ vapour
Short-term exposure limit (15-minute): WEL 40 ppm 104 mg/m³ vapour
Sk

WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

ETHANEDIOL (CAS: 107-21-1)

Ingredient comments WEL = Workplace Exposure Limits

DNEL
Industry - Inhalation; Short term : 35 mg/m³
Industry - Dermal; Long term : 106 mg/kg/day
Consumer - Dermal; Long term : 53 mg/kg/day
Consumer - Inhalation; Long term : 7 mg/m³

PNEC
- Fresh water; 10 mg/l
- Marine water; 1 mg/l
- Soil; 1.53 mg/l
- STP; 199.5 mg/l

SODIUM BENZOATE (CAS: 532-32-1)

Ingredient comments No exposure limits known for ingredient(s).

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DNEL	Industry - Dermal; Long term systemic effects: 34.7 mg/kg/day Consumer - Dermal; Long term systemic effects: 20.8 mg/kg/day Industry - Inhalation; Long term systemic effects: 10.4 mg/m³ Consumer - Inhalation; Long term systemic effects: 2.1 mg/m³ Consumer - Oral; Long term systemic effects: 25 mg/kg/day Industry - Inhalation; Long term local effects: 6.3 mg/m³ Consumer - Inhalation; Long term local effects: 1.3 mg/m³

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist.
Eye/face protection	The following protection should be worn: Chemical splash goggles or face shield. EN 166
Hand protection	For prolonged or repeated skin contact use suitable protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Rubber (natural, latex). Neoprene. Polyvinyl chloride (PVC). Nitrile rubber. Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). EN 374
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. EN 136/140/145/143/149

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Various colours.
Odour	Odourless.
pH	pH (concentrated solution): 7.0 - 8.5
Melting point	Not applicable.
Initial boiling point and range	Not determined.
Flash point	120°C
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 3.2
Vapour pressure	3 mbar @ °C
Vapour density	>1.0
Relative density	1.044 - 1.134 @ 20°C
Solubility(ies)	Soluble in water.

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Auto-ignition temperature	435°C
Viscosity	Data lacking.
Explosive properties	Data lacking.
Oxidising properties	Not available.

9.2. Other information

Other information	No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Does not decompose when used and stored as recommended.

10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid	Strong acids. Strong alkalis. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products	Oxides of the following substances: Carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)	555.56

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	22,270.0
Species	Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	2.5

Inhalation	Extensive use of the product in areas with inadequate ventilation may result in the accumulation of hazardous vapour concentrations. Gas or vapour in high concentrations may irritate the respiratory system. Vapours may cause headache, fatigue, dizziness and nausea.
Ingestion	May cause irritation. Symptoms following overexposure may include the following: Stomach pain. Nausea, vomiting. Diarrhoea. May cause liver and/or renal damage. NB. Ethylene glycol: lethal dose, adult: 100 ml Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure if swallowed.

DOWCAL 10 & SOLUTIONS

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact May cause temporary eye irritation.

Toxicological information on ingredients.

ETHANEDIOL

Acute toxicity - oral

ATE oral (mg/kg)	500.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	10,600.0
Species	Rabbit
Notes (dermal LD_{50})	LD_{50} > 10600 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	2.5
Species	Rat
Notes (inhalation LC_{50})	LD_{50} > 2.5 mg/l, Inhalation, Rat
ATE inhalation (vapours mg/l)	2.5

Skin corrosion/irritation

Animal data	Data lacking.

Serious eye damage/irritation

Serious eye damage/irritation	Data lacking.

Skin sensitisation

Skin sensitisation	Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vivo	This substance has no evidence of mutagenic properties.

Carcinogenicity

Carcinogenicity	There is no evidence that the product can cause cancer.

Reproductive toxicity

Reproductive toxicity - development	Symptoms following overexposure may include the following: Possible risk of adverse reproductive effects.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

Inhalation Vapour may irritate respiratory system/lungs.

DOWCAL 10 & SOLUTIONS

Ingestion	Harmful if swallowed. Lethal dose to humans 100ml
Skin contact	Prolonged and frequent contact may cause redness and irritation.
Eye contact	May cause temporary eye irritation.
Target organs	Liver Kidneys

SECTION 12: Ecological Information

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity Not considered toxic to fish.

Ecological information on ingredients.

ETHANEDIOL

Acute toxicity - fish	LC50, 96 hours, 96 hours: 72860 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours, 48 hours: > 100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 96 hours, 96 hours: 6500 - 13000 mg/l,
Acute toxicity - microorganisms	EC_{50}, 30 min, 30 minutes: 225 mg/l, Activated sludge

12.2. Persistence and degradability

Persistence and degradability The product is readily biodegradable.

Ecological information on ingredients.

ETHANEDIOL

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation (%) 90%: > 10 days OECD 301A

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Ecological information on ingredients.

ETHANEDIOL

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	-1.36

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

DOWCAL 10 & SOLUTIONS

ETHANEDIOL

Mobility	The product is soluble in water.
Adsorption/desorption coefficient	Soil - Koc: 1 @ °C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

ETHANEDIOL

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects No information available.

Ecological information on ingredients.

ETHANEDIOL

Cod	1.22
Other adverse effects	None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

DOWCAL 10 & SOLUTIONS

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Guidance CHIP for everyone HSG228.
Workplace Exposure Limits EH40.
Safety Data Sheets for Substances and Preparations.
Approved Classification and Labelling Guide (Sixth edition) L131.

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Revision comments NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date 28/05/2015

Revision 04

Supersedes date 08/10/2011

SDS number 10410

SDS status Approved.

Signature J Spenceley

Risk phrases in full NC Not classified.
R22 Harmful if swallowed.

Hazard statements in full H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

TURKISH SIGNATURE

1. Product and company identification

Product identifier

Trade name: Release Fabrics/Peel Plies
Release Ply A, Release Ply Super A, Stitch Ply A, Release Ply B, Release Ply C, Release Ply F, Release Ply Super F, Release Ply G, Stitch Ply G, Ultra Ply 22 T, Bleeder Lease A, Bleeder Lease B, Bleeder Lease C, Bleeder Lease E, Bleeder Lease G, Superlease Blue, Econostitch , Econostitch G, Econoply E, Econoply J, Econolease, Dahltexx SP-2, 60B, 60BR, 80A, 80AR

Relevant identified uses of the substance or mixture and uses advised against

General use: Article: Release fabrics / Peel plies

Details of the supplier of the safety data sheet

Company name:

Airtech International, Inc.
5700 Skylab Road
Huntington Beach, CA 92647
E-mail: airtech airtechintl.com
Website: www.airtechonline.com
Telephone: +1 714.899.8100
Dept. responsible for information:
Telephone: +1 714.899.8100
E-mail: airtech airtechintl.com

Airtech Europe Sarl
Zone industrielle Haneboesch
L 4562 Differdange
Luxembourg
Website: www.airtech.lu
Telephone: +352 582.282
Dept. responsible for information:
Telephone: +352 582.282
E-mail: sales airtech.lu

Tygavac Advanced Materials Ltd.
The Causeway
Broadway Business Park
Chadderton, Oldham
OL9 9 D United Kingdom
Website: www.tygavac.co.uk
Telephone: +44 161.947.1610
Dept. responsible for information:
Telephone: +44 161.947.1610
E-mail: sales tygavac.co.uk

Airtech Asia Ltd. Ltd.
888 Airtech Avenue
Huangtai Industrial Development Center
iaozhan Country, Jinnan District
Tianjin, China 300353
E-mail: airtechasia airtechintl.com
Website: www.airtech.asia
Telephone: +86 22.8622.9800
Dept. responsible for information:
Telephone: +86 22.8622.9800
E-mail: airtechasia airtechintl.com

Emergency phone number

CHEMTREC EMERGENCY PHONE:
Within USA/Canada: 1-(800)424-9300
International: +1 703-741-5970

2. Hazards identification

Emergency overview

Appearance: Form: solid
Color: varying

Odor: odorless

Classification: Article not subject to hazard labelling or classification.

Regulatory status

This material is not considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Toxic fumes may be emitted at elevated temperatures. Do not breathe vapor. Processing, e.g. by cutting, sawing or grinding, can produce particles and dust. Avoid inhalation of dusts, as even inert dusts may functionally affect respiratory organs.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: Article: Release fabrics / Peel plies

Material type : Nylon, polyester or fibreglass
Release Coating: Silicone or PTFE

4. First aid measures

In case of inhalation: In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. If the casualty has difficulty breathing, call a doctor immediately.

Following skin contact: Thoroughly wash skin with soap and water. In case of skin irritation, consult a physician.

After eye contact: In the event of irritation from processing vapors: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. In case of troubles or persistent symptoms, consult an opthalmologist.

After swallowing: Not a probable route of exposure.
In the case of the formation of dust: Rinse mouth. Seek medical treatment in case of troubles.

Most important symptoms/effects, acute and delayed

In case of inhalation:
Inhalation of dust may cause irritation of the respiratory system. Overheating released mist or vapors can irritate the respiratory tracts.
After contact with skin: itching redness of the skin and oedema (swelling).
The melted product can cause severe burns.
After eye contact:
Process vapors can irritate the eyes. Dust contact with the eyes can lead to mechanical irritation.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:
no data available

Auto-ignition temperature: no data available

Suitable extinguishing media:
Water fog, dry chemical powder, foam, carbon dioxide

Extinguishing media which must not be used for safety reasons:

High power water jet.

Specific hazards arising from the chemical

This material is combustible, but will not ignite readily. Toxic fumes may be emitted at elevated temperatures.
In case of strong heating / In case of fire may be liberated: Caprolactam, nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Seal off endangered area. Cool endangered containers with water spray and, if possible, remove from danger zone. Use a water fog to control vapors. Do not breathe fumes. Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions: Handle in accordance with good industrial hygiene and safety practice.

At processing: Avoid the formation of aerosol/vapors. Avoid generation of dust. Avoid inhalation and contact with skin and eyes. Wear protective equipment. Keep unprotected people away. Ensure adequate ventilation, especially in confined areas.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains.

Methods for clean-up: Take up mechanically, placing in appropriate containers for disposal. Dispose of waste according to applicable legislation.

7. Handling and storage

Handling

Advices on safe handling: Handle in accordance with good industrial hygiene and safety practice.

At processing: Provide adequate ventilation, and local exhaust as needed. Avoid the formation of aerosol/vapors. Avoid generation of dust. Avoid inhalation and contact with skin and eyes. Wear protective equipment. Keep unprotected people away. When using do not eat, drink or smoke.

Precautions against fire and explosion:

Take standard precautions to prevent fire.

Storage

Requirements for storerooms and containers:

Keep in a cool place. Keep container dry. Protect from direct sunlight. Do not freeze. Store at room temperature.

Hints on joint storage: Incompatible materials: Strong bases, strong acids, strong oxidizing agents.
Keep away from food and drinks.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: TWA	10 mg/m Dust limit value, indicativ; inhalable fraction
USA: ACGIH: TWA	3 mg/m Dust limit value, indicativ; respirable fraction
USA: OSHA: TWA	15 mg/m Dust limit value inhalable fraction
USA: OSHA: TWA	5 mg/m Dust limit value respirable fraction

Engineering controls

Provide good ventilation and/or an exhaust system in the work area.
In case of development of vapors or dust (at processing): Use local exhaust.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: At processing (recommended): Safety glasses in accordance with OSHA 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: At processing (recommended): Wear suitable protective clothing.

Recommendation:
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: nitrile rubber (0.11 mm)
Breakthrough time: 480 min.
Observe glove manufacturer s instructions concerning penetrability and breakthrough time.

Respiratory protection: Respiratory protection is not necessary if room is well ventilated.

At processing:
When vapors form, use respiratory protection. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

General hygiene considerations:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and after work. When using do not eat, drink or smoke.

At processing:
Avoid contact with skin, eyes, and clothing. Do not breathe vapors. Do not breathe dust.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance: Form: solid
Color: varying

Odor: odorless

Odor threshold: no data available

pH value: no data available

Melting point/freezing point:	no data available
Initial boiling point and boiling range:	no data available
Flash point/flash point range:	no data available
Evaporation rate:	no data available
Flammability:	This material is combustible, but will not ignite readily.
Explosion limits:	no data available
Vapor pressure:	no data available
Vapor density:	no data available
Density:	no data available
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Thermal decomposition:	no data available
Additional information:	no data available

10. Stability and reactivity

Reactivity: Refer to section: Possibility of hazardous reactions.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions
No dangerous reactions with proper and specified storage and handling

Conditions to avoid: Keep away from heat. Protect from direct sunlight. Avoid generation of dust. Avoid the formation of aerosol/vapors.

Incompatible materials: Strong bases, strong acids, strong oxidizing agents.

Hazardous decomposition products:
In case of strong heating / In case of fire may be liberated: Caprolactam, nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

Thermal decomposition: no data available

11. Toxicological information

Toxicological tests

Toxicological effects: Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.

Eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information: Toxic fumes may be emitted at elevated temperatures. Processing, e.g. by cutting, sawing or grinding, can produce particles and dust. Dust may irritate airways and cause bronchitis symptoms.

Symptoms

In case of inhalation:
Inhalation of dust may cause irritation of the respiratory system. Overheating released mist or vapors can irritate the respiratory tracts.
After contact with skin: itching redness of the skin and oedema (swelling).
The melted product can cause severe burns.
After eye contact:
Process vapors can irritate the eyes. Dust contact with the eyes can lead to mechanical irritation.

12. Ecological information

Ecotoxicity

Effects in sewage plants: The insoluble part can be precipitated mechanically in suitable sewage treatment plants.

Mobility in soil

no data available

Persistence and degradability

Further details: Product is not biodegradable.

Additional ecological information

General information: Do not allow to penetrate into soil, waterbodies or drains.

13. Disposal considerations

Product

Recommendation: Dispose of waste according to applicable legislation.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled. Do not remove label until container is thoroughly cleaned.

14. Transport information

USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

Sea transport (IMDG)

Proper shipping name: Not restricted
Marine pollutant: no

Air transport (IATA)

Proper shipping name: Not restricted

Further information

No dangerous good in sense of these transport regulations.

15. Regulatory information

National regulations - Great Britain

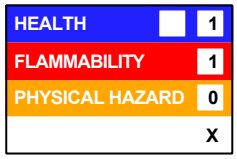
Hazchem-Code: -

16. Other information

Hazard rating systems:

NFPA Hazard Rating:
Health: 1 (Slight)
Fire: 1 (Slight)
Reactivity: 0 (Minimal)

HMIS Version III Rating:
Health: 1 (Slight)
Flammability: 1 (Slight)
Physical Hazard: 0 (Minimal)
Personal Protection: = Consult your supervisor



Reason of change: General revision

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

This data sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, and which additional precautions may be necessary. All health and safety information contained in this data sheet should be provided to your employees and customers. It is your responsibility to develop appropriate workplace instructions and training programs for employees.

As the conditions and methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. All statements or suggestions are made without warranty, expressed or implied, regarding accuracy of information, the hazards connected with the use of the product or the results to be obtained from the use thereof.

Safety Data Sheet

Efaspray 0790

Replaces date: 02/02/2015 Revision date: 17/04/2015

SECTION 1: Identification of the substance/preparation and of the company/undertaking

1.1. Product identifier

Trade name: Efaspray 0790

Article no

Article no	Description
0790	

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses: Coating of metal.

Inadvisable uses: The product is recommended for only the above described uses.

1.3. Details of the supplier of the safety data sheet

Supplier

Company: Esbjerg Farve- & Lakfabrik A/S

Address: Energivej 13

Zip code: DK-6700 Esbjerg

Country: DENMARK

E-mail: info@esbjergpaints.dk

Phone: 0045 75 12 86 00

Fax: 0045 75 45 33 68

1.4. Emergency Telephone Number

GB: +44 1215074123 (Advice and guidance) (Around the clock)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification: Aerosol 1;H222 Aerosol 2;H229 Acute Tox. 4;H312/332 Skin Irrit. 2;H315 Eye Irrit. 2;H319 STOT SE 3;H336 Aquatic Chronic 3;H412

2.2. Label elements

Pictograms

Signal word: Danger

Contains

Substance: acetone, Xylene

Hazard Statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H312/332	Harmful in contact with skin or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/eye protection/face protection.
P410/412	Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122°F.
P501	Dispose of contents/container to local regulations.

Supplemental information

EUH066	Repeated exposure may cause skin dryness or cracking.

Only self-contained breathing apparatus must be used as the product contains volatile liquids the vapors of which are not detained by carbon filters.

2.3. Other hazards

No known information.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	CAS number	EC No	REACH Reg. No.	Concentration	Notes	CLP-classification
acetone	67-64-1	200-662-2	01-2119471330-49	25 - 50%		F;R11 Xi;R36 ;R66 ;R67
propane	74-98-6	200-827-9		25 - 50%		Fx;R12
Xylene	1330-20-7	215-535-7	01-2119488216-32	10 - 25%		;R10 Xn;R20/21 Xi;R38
Butane (containing < 0,1 % butadiene (203-450-8))	106-97-8	203-448-7		2.5 - 10%		Fx;R12
n-butyl acetate	123-86-4	204-658-1		2.5 - 10%		;R10 ;R66 ;R67
Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.	64742-94-5	265-198-5	01-2119463583-34	2.50 - 10%		Xn,N,R51/53 - R65 - R66 - R67
ethylbenzene	100-41-4	202-849-4		< 2.5%		Xn,F,R11 - R20

Please see section 16 for the full text of R-phrases and H-phrases.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation: If patient feels unwell move to fresh air and keep under surveillance. If the victim is unconscious, ascertain whether the victim is breathing. If breathing has stopped, apply artificial respiration. If the victim is unconscious but breathing, place in the recovery position and keep warm with blankets. Call for medical attention or ambulance.

Ingestion: Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn´t enter the lungs. Get medical attention immediately!

Skin contact: Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Do not use solvents.

Eye contact: Flush immediately with water (preferably using eye wash equipment) for at least 5 minutes. Open eye wide. Remove any contact lenses. Seek medical advice.

General: If in doubt, seek medical advice. Also see para. 1

4.2. Most important symptoms and effects, both acute and delayed

Pain in the eyes, redness, tears, swollen eyelids, itching Headache, dizziness, drowsiness and nausea.

4.3. Indication of any immediate medical attention and special treatment needed

Seek medical advice in case of discomfort. Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: Fire can be extinguished with carbon dioxide, powder, foam or water spray.

Unsuitable extinguishing media: Do not use a direct water jet that could spread the fire.

5.2. Special hazards arising from the substance or mixture

Avoid inhaling of waste gases. Combustion will generate harmful gases, as combustion residues and carbon monoxide.

5.3. Advice for fire-fighters

Cool closed containers with water. Fire will produce a thick black smoke. Products of combustion are harmful and respiratory protection is required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid inhalation of vapours. Remove all ignition sources and ensure sufficient ventilation.

For emergency responders: Use nitrile protection gloves and self-contained breathing apparatus.

6.2. Environmental precautions

Notify proper authorities in case of contamination of soil or aquatic environment or discharge to drains.

6.3. Methods and material for containment and cleaning up

Prevent major quantities of spillage from being discharged into the sewage system or water by banking the spillage with sand or the like and collecting it. Clean the contaminated area with a suitable cleaning agent, but do not use solvent.

6.4. Reference to other sections

Also see item 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

The product may be charged electrostatically. Always use underground wire when transferring from one container to another. Personnel should wear antistatic shoes and clothing. Floors should be conductive. Do not use tools which may produce sparks. Avoid contact with eyes and skin. Avoid inhaling vapors and spray mists. Vapors may form explosive mixtures with air. Prevent the formation of flammable or explosive mixtures. Do not use this material near naked flames or any other ignition source. Electrical installations must be protected according to regulations.

7.2. Conditions for safe storage, including any incompatibilities

The product must be kept away from children. Store in a tightly closed container and in accordance with the current regulations in a dry and well-ventilated place away from food. Keep away from ignition sources, oxidizing agents and strong acidic and basic substances. No smoking and use of open fire. No admittance to unauthorized persons. Opened containers must be carefully closed and stored upright to prevent any leakage.

7.3. Specific end use(s)

Applications is mentioned in item 1.2.

Other Information: Smoking and the consumption of food and drink are not permitted in work rooms. Personal protective equipment: Refer to section 8.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit

Substance name	Time period	ppm	mg/m3	Comment	Remarks
acetone	8h	500	1210		
acetone	15m	1500	3620		
Xylene	8h	50	220		BMGV, Sk
Xylene	15m	100	441		BMGV, Sk
n-butyl acetate	8h	150	724		
n-butyl acetate	15m	200	966		
Butane (containing < 0,1 % butadiene (203-450-8))	8h	600	1.450		
Butane (containing < 0,1 % butadiene (203-450-8))	15m	750	1.810		

BMGV = Biological monitoring may be appropriate and Biological Monitoring Guidance Value is listed in Table 3 (Occupational Exposure Limits)

Sk = Can be absorbed throuh skin

Legal basis: EH40/2005 Workplace exposure limits incl. supplement from October 2007.

PNEC

acetone				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
Freshwater	10,6 mg/l			
Soil	33,3 mg/l			
Marine water	1,06 mg/l			

Xylene				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
Freshwater	0,327 mg/l			
Marine water	0,327 mg/l			
Freshwater - sediment	12,46 mg/kg			
Marine water - sediment	12,46 mg/kg			
Soil	2,31 mg/kg			

n-butyl acetate				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
Freshwater - sediment	0,981 mg/kg			
Marine water - sediment	0,0981 mg/kg			
Soil	0,0903 mg/kg			
Marine water	0,018 mg/l			
Freshwater	0,18 mg/l			

ethylbenzene				
Exposure	Value	Assessment Factor	Extrapolation Method	Note
	0,1 mg/l			
	0,01 mg/l			
	13,7 mg/kg			
	2,68 mg/kg			

DNEL - workers

acetone					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation	1210 mg/m3	Long-term exposure			
Inhalation	2420 mg/m3	Acute / short-term exposure			
Dermal	186 mg/kg	Long-term exposure			

Xylene					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation	289 mg/m3	Acute / short-term exposure		Systemic effects	
Inhalation	289 mg/m3	Acute / short-term exposure		Local effects	
Dermal	180 mg/kg bw/day	Long-term exposure		Systemic effects	
Inhalation	77 mg/m3	Long-term exposure		Systemic effects	

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation	150 mg/m3	Long-term exposure		Systemic effects	
Dermal	12,5 mg/kg bw/day	Long-term exposure		Systemic effects	

n-butyl acetate					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation	960 mg/m3	Acute / short-term exposure		Local effects	
Inhalation	480 mg/m3	Long-term exposure		Systemic effects	
Inhalation	960 mg/m3	Acute / short-term exposure		Systemic effects	

ethylbenzene					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Inhalation	293 mg/m3	Acute / short-term exposure		Local effects	
Dermal	180 mg/kg bw/day	Long-term exposure		Systemic effects	
Inhalation	77 mg/m3	Long-term exposure		Systemic effects	

DNEL - general population

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Dermal	7,5 mg/kg bw/day	Long-term exposure		Systemic effects	
Inhalation	32 mg/m3	Long-term exposure		Systemic effects	
Oral	7,5 mg/kg bw/day	Long-term exposure		Systemic effects	

Biological threshold values: See above.

Other Information: See above.

8.2. Exposure controls

Appropriate engineering controls: All work must be planned with a view to limit the breathing of fumes and the exposure to the skin. Work under effective process ventilation (e.g. local exhaust ventilation). If this is not possible, use respiratory protection.

Personal protective equipment, eye/face protection: Use suitable protective goggles or full face mask for protection against splashes.

Personal protective equipment, hand protection: Use 4H protection gloves. Break-through time is 8 hours. Cotton gloves may be used under, and a disposable glove over the 4H glove. Follow the glove manufacturer's recommendations on use and replacement.

Personal protective equipment, skin protection: If possible, wear special work clothes. When spraying wear coveralls.

Personal protective equipment, respiratory protection: Use compressed-air full face mask.

Environmental exposure controls: It must be ensured that local regulations for discharge are met.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Liquid
Colour	Different
Odour	Odour of organic solvent.
Solubility	Soluble in: Organic solvents.
Explosive properties	

Oxidising properties	

Parameter	Value/unit	Remarks
pH (solution for use)	No data	
pH (concentrate)	No data	
Melting point	No data	
Freezing point	No data	
Initial boiling point and boiling range	No data	
Flash Point	< 21 °C	
Evaporation rate	No data	
Flammability (solid, gas)	No data	
Flammability limits	No data	
Explosion limits	1.80 - 8.40	
Vapour pressure	No data	
Vapour density	No data	
Relative density	No data	
Partition coefficient n-octonol/water	No data	
Auto-ignition temperature	No data	
Decomposition temperature	No data	
Viscosity	No data	
Odour threshold	No data	

9.2 Other information

Parameter	Value/unit	Remarks
Density	1 g/ml	
Fire class:	I-1	
Weight % organic solvents:	75	
VOC	750	

Other Information: Solubility in water: Insoluble in water. Fat solubility: irrelevant

SECTION 10: Stability and reactivity

10.1. Reactivity

See below.

10.2. Chemical stability

Stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

Ignitable at temperatures above the flash point. The fumes can ignite by e.g. a spark, a warm surface or a glow. The fumes can mix to explosive mixtures with air. At room temperature the fumes are more heavily than air and can spread along the floor.

10.4. Conditions to avoid

Stable at normal temperature. When exposed to high temperatures, toxic decomposition products may be formed.

10.5. Incompatible materials

To prevent heat-generating reactions, keep the product away from oxidizing agents and strong acidic and basic substances.

10.6. Hazardous decomposition products

carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

acetone

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		5800 mg/kg		OECD 401	

Xylene

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 4300mg/kg			

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 5000mg/kg		OECD 401	

n-butyl acetate

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		4700mg/kg			

Ingestion of large quantities may cause gastrointestinal disorders.

Acute toxicity - dermal

acetone

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 15800mg/kg			

Xylene

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit	LD50		3200 mg/kg			

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit	LD50		> 2000mg/kg		OECD 402	

Organic solvents may be absorbed through skin. Organic solvents have a degreasing effect on the skin.

Acute toxicity - inhalation

acetone

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
	LC50	4 h	76 mg/l			

Xylene

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LC50	4 h	21.7 mg/l			

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LC50		4688ppm		OECD 403	

Protracted inhalation in high concentrations may cause permanent damage to the central nervous system. Inhalation of vapors may cause symptoms of poisoning such as memory and concentration difficulties, abnormal tiredness, irritability and, in extreme cases, unconsciousness.

Skin corrosion/irritation: Prolonged or repeated skin contact will degrease skin and may cause irritation.

Serious eye damage/eye irritation: Splashing into eyes may cause smarting/irritation.

Germ cell mutagenicity: Would not be expected germ cell mutagen

Carcinogenic properties: No data.

Reproductive toxicity: Would not be expected to be a reproductive toxicant.

Single STOT exposure: No data.

Repeated STOT exposure: No data

SECTION 12: Ecological information

12.1. Toxicity

acetone

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Acute daphnia	Daphnia magna	48 h	EC50	8800 mg/l			
Acute fish	Onchorhynchus mykiss	96 h	LC50	5540 mg/l			

Xylene

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Acute Daphnia		24 h	EC50	165 mg/l			
Acute fish		96 h	LC50	1 - 10mg/l			

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Acute Daphnia	Daphnia magna	48 h	EL50	3 - 10mg/l			
Acute algae	Pseudokirchneriella subcapitata	72 h	NOELR	2.5mg/l			
Acute algae	Pseudokirchneriella subcapitata	72 h	EL50	11mg/l			
Acute fish	Onchorhynchus mykiss	96 h	LL50	2 - 5mg/l			

n-butyl acetate

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Acute algae		72 h	EC50	6477mg/l			
Acute daphnia	Daphnia magna	48 h	EC50	44mg/l			

ethylbenzene

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Acute fish	Cyprinodon variegatus	96 h	LC50	88mg/l			
Acute Daphnia	#Not translated#	48 h	EC50	290mg/l			

12.2. Persistence and degradability

Kerosine - unspecified, Solvent naphtha (petroleum), heavy arom.

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
		28 d		49.56%			

n-butyl acetate

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
		28 d	BOD	98%		BOD:ThOD	

No information available

12.3. Bioaccumulative potential

No information available

12.4. Mobility in soil

The product is insoluble in water and will spread out on the surface.

12.5. Results of PBT and vPvB assessment

No information available

12.6. Other adverse effects

No information available

Other Information

Do not dispose of this product in drains, watercourses, or on the ground. This product is classified as hazardous to the environment according to the calculation method. Please see par. 2 and 3 for further information.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product residues are classified as chemical waste.

Waste-code: 16 05 04

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN-No.: 1950

14.2. UN proper shipping name: AEROSOLES

14.3. Transport hazard class(es): 2.1

Hazard label(s):

Hazard identification number:

14.4. Packing group:

14.5. Environmental hazards:

Tunnel restriction code:

Other Information:

Inland water ways transport (ADN)

14.1. UN-No.:	1950	**14.4. Packing group:**	
14.2. UN proper shipping name:	AEROSOLES	**14.5. Environmental hazards:**	
14.3. Transport hazard class(es):	2.1		
Hazard label(s):			
Environmentally hazardous in tank vessels:		**Other Information:**	

Sea transport (IMDG)

14.1. UN-No.:	1950	**14.4. Packing group:**	
14.2. UN proper shipping name:	AEROSOLES	**14.5. Environmental hazards:**	
14.3. Transport hazard class(es):	2.1	**Environmental Hazardous Substance Name(s):**	
Hazard label(s):			
EmS:	F-D, S-U	**IMDG Code segregation group:**	

Other Information:

Air transport (ICAO-TI / IATA-DGR)

14.1. UN-No.:	1263	**14.4. Packing group:**	
14.2. UN proper shipping name:	AEROSOLES	**14.5. Environmental hazards:**	
14.3. Transport hazard class(es):	2.1		
Hazard label(s):		**Other Information:**	

14.6. Special precautions for user

Irrelevant.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Irrelevant.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Special Provisions:

15.2. Chemical Safety Assessment

Other Information: Chemical safety assessment has not been performed.

SECTION 16: Other information

Version history and indication of changes

Version	Revision date	Responsible	Changes
10.0.0	15/08/2012	GK	REACH data sheet
11.0.0	16/04/2013	GK	2
12.0.0	08/11/2013	GK	8, 13, 15, 16
13.0.0	02/02/2015	GK	2, 3, 8, 11, 12

Abbreviations: DNEL: Derived No Effect Level. PNEC: Predicted No Effect Concentration.

References to literature and data sources: REACH: REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals. DPD: Directive of the European Parliament and of the Council concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations. CLP: REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures.

Other Information: The information in this Material Safety Data Sheet is based upon our knowledge and on European Union legislation. The user's working conditions are outside our control. It is the responsibility of the users to fulfil the requirements set by National Legislation. The information is no guarantee of the properties of the product. The Material Safety Data Sheet may only be reproduced with the permission of the manufacturer.

Training advice: The instructions in this Material Safety Data Sheet are given on the assumption that the product is used as stated in item 1. Restrictions of use and special training requirements must also be complied with. The information in this Material Safety Data Sheet should be regarded as a description of the safety issues concerning the product.

List of relevant H-statements

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H312/332	Harmful in contact with skin or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Document language: GB

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*
1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: Epilox® A 18-00**

· **Article number:** 0104
· **CAS Number:**
25068-38-6
· **NLP Number:**
500-033-5
· **Index number:**
603-074-00-8
· **Registration number** 01-2119456619-26-0006
· **Application of the substance / the mixture** Epoxy binder

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
LEUNA-Harze GmbH
Am Haupttor, Bau 6619
D-06237 Leuna
Telefon 03461 43 3639
e-Mail: infomsds.harze@leuna.de

· **Further information obtainable from:**
Abteilung Qualitätssicherung
Dr. Karin Bierögel
Telefon 03461 43 4654
Telefax 03461 43 4574
Telefon außerhalb der Geschäftszeit: 03461 43 6188
· **Emergency telephone number:**
Leitstelle Werkfeuerwehr
03461 434333

2 Hazards identification

· **Classification of the substance or mixture**

GHS07

Skin Irritation - Category 2 H315 Causes skin irritation.
Eye Irritation - Category 2 H319 Causes serious eye irritation.
Skin Sensitizer - Category 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements**
The substance is classified and labelled according to the Globally Harmonised System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)

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· ***Hazard statements***
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· ***Precautionary statements***

P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P261	*Avoid breathing dust/fume/gas/mist/vapours/spray.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P321	*Specific treatment (see on this label).*
P333+P313	*If skin irritation or rash occurs: Get medical advice/attention.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

3 Composition/information on ingredients

· ***Chemical characterisation: Substances***
· ***CAS No. Description***
25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin
(number average molecular weight = 700)
· ***Identification number(s)***
· ***NLP Number:*** *500-033-5*
· ***Index number:*** *603-074-00-8*

4 First aid measures

· ***Description of first aid measures***
· ***After inhalation:*** *Supply fresh air; consult doctor in case of complaints.*
· ***After skin contact:***
If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
· ***After eye contact:***
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· ***After swallowing:***
If symptoms persist consult doctor.
Rinse out mouth and then drink plenty of water.
· ***Information for doctor:***
· ***Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

5 Firefighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, powder or water spray. Fight larger fires with water spray.
Use fire extinguishing methods suitable to surrounding conditions.
· ***Special hazards arising from the substance or mixture***
Carbon monoxide (CO)
Under certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:

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· ***Advice for firefighters***
· ***Protective equipment:***
Wear self-contained respiratory protective device.
Wear fully protective suit.
· ***Additional information***
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
· ***Environmental precautions:***
Do not allow to penetrate the ground/soil.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· ***Methods and material for containment and cleaning up:***
Dispose contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· ***Handling:***
· ***Precautions for safe handling*** *Ensure good ventilation/exhaustion at the workplace.*
· ***Information about fire - and explosion protection:*** *No special measures required.*

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:*** *Prevent any seepage into the ground.*
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:***
Store in cool, dry conditions in well sealed receptacles.
Store receptacle in a well ventilated area.
· ***Specific end use(s)*** *No further relevant information available.*

8 Exposure controls/personal protection

· ***Additional information about design of technical facilities:*** *No further data; see item 7.*

· ***Control parameters***
· ***Ingredients with limit values that require monitoring at the workplace:*** *Not required.*
· ***DNELs***
Dermal: 8.33 mg/kg bw/day
Inhalation: 12.25 mg/m³
· ***PNECs***
STP: 10 mg/l
Freshwater: 0.006 mg/l
Freshwater sediment: 0.0627 mg/kg wwt
Marine water: 0.0006 mg/l
Marine water sediment: 0.00627 mg/kg wwt
Soil: 0.0478 mg/kg wwt
· ***Additional information:*** *The lists valid during the making were used as basis.*

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· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· ***Respiratory protection:***
Filter A/P2
Use suitable respiratory protective device only when aerosol or mist is formed.
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves***
Recommended thickness of the material: ≥ 0.4 mm
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Butyl rubber, BR
Nitrile rubber, NBR
· ***Penetration time of glove material***
The determined penetration times according to EN 374 part III are not performed under practical conditions.
Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
· ***Eye protection:***

Tightly sealed goggles

· ***Body protection:*** *Protective work clothing*

9 Physical and chemical properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Viscous*
Colour:	*Light yellow*
· ***Odour:***	*Nearly odourless*
· ***Change in condition***	
Melting point/Melting range:	*30 - 50 °C*
Boiling point/Boiling range:	*> 320 °C (DSC)*
Solidification point:	*- 16 °C (TG)*
· ***Flash point:***	*266 °C (EU A.9)*
· ***Ignition temperature:***	*455 °C*
· ***Danger of explosion:***	*Product does not present an explosion hazard.*
· ***Vapour pressure at 25 °C:***	*0.0000046 hPa*
· ***Density at 20 °C:***	*1.17 g/cm³*

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· **Solubility in / Miscibility with water at 20 °C:**	0.0069 g/l
· **organic solvents:**	Miscible with many organic solvents.
· **Partition coefficient (n-octanol/water) at 25 °C:**	3.242 log POW (modified shake flask test)
· **Viscosity:**	
Dynamic at 25 °C:	8 - 10 Pa.s
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions**
Exothermic polymerisation.
Reacts with amines.
Reacts with acids.
Reacts with alkali (lyes).
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** Irritant gases/vapours

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity**

· **LD/LC50 values relevant for classification:**

25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)

Oral	LD50	15 000 mg/kg bw (Rat)
Dermal	LD50	23 000 mg/kg bw (rabbit)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Irritant to skin and mucous membranes.
· **Serious eye damage/irritation** Irritating effect.
· **Respiratory or skin sensitisation** Sensitisation possible through skin contact.
· **Repeated dose toxicity**
NOAEL (oral): 50 mg/kg bw/day
NOEAL (dermal): 100 mg/kg bw/day

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)

EC50/48h	1.8 mg/l (daphnia)
EC50/72h	11 mg/l (Alg)
LC50/96h	2.0 mg/l (leuciscus idus)

· **Persistence and degradability** No further relevant information available.
· **Other information:** The product is not easily biodegradable.

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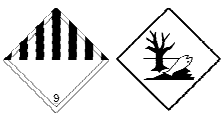
· ***Behaviour in environmental systems:***
· ***Bioaccumulative potential*** *No further relevant information available.*
· ***Mobility in soil*** *No further relevant information available.*
· ***Ecotoxical effects:***
· ***Remark:*** *Toxic for fish*
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Other adverse effects*** *No further relevant information available.*

13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation*** *Must be specially treated adhering to official regulations.*

· ***Uncleaned packaging:***
· ***Recommendation:***
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

*
14 Transport information

· ***UN-Number***	
· ***TDG, IMDG, IATA***	*UN3082*
· ***UN proper shipping name***	
· ***TDG***	*3082 UMWELTGEFÄHRDENDER STOFF, FLÜSSIG, N.A.G. (Reaktionsprodukt: Bisphenol-A-Epichlorhydrinharze mit durchschnittlichem Molekulargewicht ≤700)*
· ***IMDG***	*ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxide resin)*
· ***IATA***	*ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxide resin)*
· ***Transport hazard class(es)***	
· ***TDG, IMDG, IATA***	
· ***Class***	*9 Miscellaneous dangerous substances and articles.*
· ***Label***	*9*
· ***Packing group***	
· ***TDG, IMDG, IATA***	*III*
· ***Environmental hazards:***	
· ***Marine pollutant:***	*Yes* *Symbol (fish and tree)*
· ***Special marking (TDG):***	*Symbol (fish and tree)*

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· ***Special marking (IATA):***	*Symbol (fish and tree)*
· ***Special precautions for user***	*Warning: Miscellaneous dangerous substances and articles.*
· ***Danger code (Kemler):***	*90*
· ***EMS Number:***	*F-A,S-F*
· ***Transport in bulk according to Annex II of Marpol and the IBC Code***	*Not applicable.*
· ***Transport/Additional information:***	
· ***TDG***	
· ***Limited quantities (LQ)***	*5L*
· ***Transport category***	*3*
· ***Tunnel restriction code***	*E*
· ***UN "Model Regulation":***	*UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)), 9, III*

15 Regulatory information

· ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***GHS label elements***
The substance is classified and labelled according to the Globally Harmonised System (GHS).
· ***Hazard pictograms***

GHS07

· ***Signal word*** *Warning*

· ***Hazard-determining components of labelling:***
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)
· ***Hazard statements***
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· ***Precautionary statements***

P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P261	*Avoid breathing dust/fume/gas/mist/vapours/spray.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P321	*Specific treatment (see on this label).*
P333+P313	*If skin irritation or rash occurs: Get medical advice/attention.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· ***National regulations:***

· ***Waterhazard class:*** *Water hazard class 2 (Assessment by list): hazardous for water.*
· ***Chemical safety assessment:*** *A Chemical Safety Assessment has been carried out.*

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03/02/2016 *Version number 4* *Revision: 01/19/2016*

Trade name: Epilox® A 18-00

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· ***Department issuing SDS:*** *Abteilung Qualitätssicherung*
· ***Contact:*** *Fr. Dr. Bierögel*
· ***Abbreviations and acronyms:***
ICAO: International Civil Aviation Organisation
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Irritation - Category 2: Skin corrosion/irritation, Hazard Category 2
Eye Irritation - Category 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sensitizer - Category 1: Sensitisation - Skin, Hazard Category 1
· **** Data compared to the previous version altered.***

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/12/2011 Reviewed on 01/12/2011

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: Epilox-Härter M 1093**
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the preparation** Hardening agent/ Curing agent

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
LEUNA-HARZE GmbH
Am Haupttor, Bau 6619
D-06237 Leuna
Telefon 03461 43 3639
e-Mail: infomsds.harze@leuna.de

· **Information department:**
Abteilung Qualitätssicherung
Dr. Karin Bierögel
Telefon 03461 43 4654
Telefax 03461 43 4574
Telefon außerhalb der Geschäftszeit: 03461 43 6188
· **Emergency telephone number:**
Leitstelle Werkfeuerwehr
03461 210007

2 Composition/information on ingredients

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

9046-10-0	Polyoxyalkylenamin	C R34 H314	50-100%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

· **Classification of the substance or mixture**

GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

H303 May be harmful if swallowed.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

C; Corrosive

R34: Causes burns.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

(Contd. on page 2)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/12/2011 Reviewed on 01/12/2011

Trade name: Epilox-Härter M 1093

(Contd. of page 1)

· **Label elements**

· **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**
C Corrosive

· **Hazard-determining components of labelling:**
Polyoxyalkylenamin

· **Risk phrases:**
34 Causes burns.

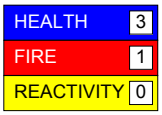
· **Safety phrases:**
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
60 This material and its container must be disposed of as hazardous waste.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 3
Fire = 1
Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

4 First aid measures

· **Description of first aid measures**

· **General information:** Immediately remove any clothing soiled by the product.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

5 Firefighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray.
Use fire fighting measures that suit the environment.

· **Advice for firefighters**

· **Protective equipment:**
Wear self-contained respiatory protective device.
Wear fully protective suit.

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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/12/2011 Reviewed on 01/12/2011

Trade name: Epilox-Härter M 1093

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· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Keep people at a distance and stay upwind.
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Provide floor trough without outlet.
Store only in the original receptacle.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Keep receptacle tightly sealed.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not necessary if room is well-ventilated.

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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/12/2011 Reviewed on 01/12/2011

Trade name: Epilox-Härter M 1093

(Contd. of page 3)

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
PVC gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Use protective suit.

*
9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Pasty
Color:	Whitish
· **Odor:**	Ammonia-like
· **Change in condition**	
Boiling point/Boiling range:	260°C (500°F)
· **Flash point:**	> 100°C (> 212°F)
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Density:**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **organic solvents:**	Soluble in many organic solvents.
· **Segregation coefficient (n-octonol/water):**	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Solids content:	48.0 %

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Trade name: Epilox-Härter M 1093

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10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** Reacts with acids.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
9046-10-0 Polyoxyalkylenamin		
Oral	LD50	2880 mg/kg (rat)
Dermal	LD50	2980 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

· **Toxicity**

· **Acquatic toxicity:**	
9046-10-0 Polyoxyalkylenamin	
LC50/96h	> 220 mg/l (leuciscus idus)

· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must be specially treated adhering to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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Trade name: Epilox-Härter M 1093

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· **Uncleaned packagings:**
· **Recommendation:**
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

14 Transport information

· **DOT regulations:**

· **Hazard class:** 8
· **Identification number:** UN2735
· **Packing group:** II
· **Proper shipping name (technical name):** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Epoxide resin hardener)
· **Label** 8

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** 8 Corrosive substances
· **Danger code (Kemler):** 80
· **UN-Number:** 2735
· **Packaging group:** II

· **Maritime transport IMDG:**

· **IMDG Class:** 8
· **UN Number:** 2735
· **Label** 8
· **Packaging group:** II
· **EMS Number:** F-A,S-B
· **Marine pollutant:** No
· **Propper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Epoxide resin hardener)

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** 8
· **UN/ID Number:** 2735
· **Label** 8
· **Packaging group:** II
· **Propper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Epoxide resin hardener)

· **UN "Model Regulation":** UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S., 8, II

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· **Special precautions for user** Warning: Corrosive substances

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Product related hazard informations:**
The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**
C Corrosive

· **Hazard-determining components of labelling:**
Polyoxyalkylenamin

· **Risk phrases:**
34 Causes burns.

· **Safety phrases:**
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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Printing date 01/12/2011 Reviewed on 01/12/2011

Trade name: Epilox-Härter M 1093

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36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
60 This material and its container must be disposed of as hazardous waste.

· **National regulations:**

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Abteilung Qualitätssicherung
· **Contact:** Fr. Dr. Bierögel
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
· ***** Data compared to the previous version altered.**

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 15.07.2015 *Version number 6* *Revision: 15.07.2015*

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: Epilox® M 996**

· **Article number:** 0513
· **CAS Number:**
25068-38-6
· **NLP Number:**
500-033-5
· **Index number:**
603-074-00-8
· **Registration number** 01-2119456619-26-0006
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Sector of Use**
SU19 Building and construction work
SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
· **Product category**
PC19 Intermediate
PC32 Polymer preparations and compounds
PC9a Coatings and paints, thinners, paint removers
PC0 Other
PC1 Adhesives, sealants
PC9b Fillers, putties, plasters, modelling clay
PC33 Semiconductors
· **Process category**
PROC19 Hand-mixing with intimate contact and only PPE available
PROC11 Non industrial spraying
PROC7 Industrial spraying
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC6 Calendering operations
PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring
PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC24 High (mechanical) energy work-up of substances bound in materials and/or articles
· **Environmental release category**
ERC2 Formulation of preparations
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC5 Industrial use resulting in inclusion into or onto a matrix
ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix
· **Article category**
AC2 Machinery, mechanical appliances, electrical/electronic articles
AC7 Metal articles

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Safety data sheet
according to 1907/2006/EC, Article 31

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Trade name: Epilox® M 996

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AC13 Plastic articles
AC4 Stone, plaster, cement, glass and ceramic articles
AC8 Paper articles
AC11 Wood articles
AC1 Vehicles
· ***Application of the substance / the mixture*** *Epoxy binder*

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
LEUNA-Harze GmbH
Am Haupttor, Bau 6619
D-06237 Leuna
Telefon 03461 43 3639
e-Mail: infomsds.harze@leuna.de

· ***Further information obtainable from:***
Abteilung Qualitätssicherung
Dr. Karin Bierögel
Telefon 03461 43 4654
Telefax 03461 43 4574
Telefon außerhalb der Geschäftszeit: 03461 43 6188
· ***1.4 Emergency telephone number:***
Leitstelle Werkfeuerwehr
03461 434333

*
SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***

GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

GHS07

Skin Irrit. 2	*H315 Causes skin irritation.*
Eye Irrit. 2	*H319 Causes serious eye irritation.*
Skin Sens. 1	*H317 May cause an allergic skin reaction.*

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The substance is classified and labelled according to the CLP regulation.
· ***Hazard pictograms***

GHS07 GHS09

· ***Signal word*** *Warning*

· ***Hazard-determining components of labelling:***
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)
· ***Hazard statements***
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 15.07.2015 *Version number 6* *Revision: 15.07.2015*

Trade name: Epilox® M 996

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H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.
· ***Precautionary statements***
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P262 Do not get in eyes, on skin, or on clothing.
P273 Avoid release to the environment.
P264 Wash thoroughly after handling.
· ***Additional information:***
Contains epoxy constituents. May produce an allergic reaction.
· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

SECTION 3: Composition/information on ingredients

· ***3.1 Chemical characterisation: Substances***
· ***CAS No. Description***
25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin
(number average molecular weight = 700)
· ***Identification number(s)***
· ***NLP Number:*** *500-033-5*
· ***Index number:*** *603-074-00-8*

SECTION 4: First aid measures

· ***4.1 Description of first aid measures***
· ***After inhalation:*** *Supply fresh air; consult doctor in case of complaints.*
· ***After skin contact:***
If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
· ***After eye contact:***
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· ***After swallowing:***
If symptoms persist consult doctor.
Rinse out mouth and then drink plenty of water.
· ***4.2 Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, powder or water spray. Fight larger fires with water spray.
Use fire extinguishing methods suitable to surrounding conditions.
· ***5.2 Special hazards arising from the substance or mixture***
Carbon monoxide (CO)
Under certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:
· ***5.3 Advice for firefighters***
· ***Protective equipment:***
Wear self-contained respiratory protective device.
Wear fully protective suit.
· ***Additional information***
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 15.07.2015 *Version number 6* *Revision: 15.07.2015*

Trade name: Epilox® M 996

(Contd. of page 3)

Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
· ***6.2 Environmental precautions:***
Do not allow to penetrate the ground/soil.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· ***6.3 Methods and material for containment and cleaning up:***
Dispose contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling*** *Ensure good ventilation/exhaustion at the workplace.*
· ***Information about fire - and explosion protection:*** *No special measures required.*

· ***7.2 Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:*** *Prevent any seepage into the ground.*
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:***
Store in cool, dry conditions in well sealed receptacles.
Store receptacle in a well ventilated area.
· ***7.3 Specific end use(s)*** *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

· ***Additional information about design of technical facilities:*** *No further data; see item 7.*

· ***8.1 Control parameters***
· ***Ingredients with limit values that require monitoring at the workplace:*** *Not required.*
· ***DNELs***
Dermal: 8,33 mg/kg bw/day
Inhalation: 12,25 mg/m³
· ***PNECs***
STP: 10 mg/l
Freshwater: 0,006 mg/l
Freshwater sediment: 0,0627 mg/kg wwt
Marine water: 0,0006 mg/l
Marine water sediment: 0,00627 mg/kg wwt
Soil: 0,0478 mg/kg wwt
· ***Additional information:*** *The lists valid during the making were used as basis.*

· ***8.2 Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

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· ***Respiratory protection:***
Filter A/P2
Use suitable respiratory protective device only when aerosol or mist is formed.
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves***
Recommended thickness of the material: ≥ 0.4 mm
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Butyl rubber, BR
Nitrile rubber, NBR
· ***Penetration time of glove material***
The determined penetration times according to EN 374 part III are not performed under practical conditions.
Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
· ***Eye protection:***

Tightly sealed goggles

· ***Body protection:*** *Protective work clothing*

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Viscous*
Colour:	*Light yellow*
· ***Odour:***	*Nearly odourless*
· ***Change in condition***	
Melting point/Melting range:	*30 - 50 °C*
Boiling point/Boiling range:	*> 320 °C (DSC)*
Solidification point:	*- 16 °C (TG)*
· ***Flash point:***	*266 °C (EU A.9)*
· ***Ignition temperature:***	*455 °C*
· ***Danger of explosion:***	*Product does not present an explosion hazard.*
· ***Vapour pressure at 25 °C:***	*0.0000046 hPa*
· ***Density at 20 °C:***	*1.17 g/cm³*
· ***Solubility in / Miscibility with***	
water at 20 °C:	*0.0069 g/l*
· ***organic solvents:***	*Miscible with many organic solvents.*
· ***Partition coefficient (n-octanol/water) at 25 °C:***	*3.242 log POW (modified shake flask test)*
· ***Viscosity:***	
Dynamic at 60 °C:	*> 3 Pa.s*

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· **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions**
Exothermic polymerisation.
Reacts with amines.
Reacts with acids.
Reacts with alkali (lyes).
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** Irritant gases/vapours

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity**

· **LD/LC50 values relevant for classification:**

25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)

Oral	LD50	15 000 mg/kg bw (Rat)
Dermal	LD50	23 000 mg/kg bw (rabbit)

· **Primary irritant effect:**
· **Skin corrosion/irritation**
Causes skin irritation.
· **Serious eye damage/irritation**
Causes serious eye irritation.
· **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
· **Repeated dose toxicity**
NOAEL (oral): 50 mg/kg bw/day
NOEAL (dermal): 100 mg/kg bw/day
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)

EC50/48h	1.8 mg/l (daphnia)
EC50/72h	11 mg/l (Alg)
LC50/96h	2.0 mg/l (leuciscus idus)

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· ***12.2 Persistence and degradability*** *No further relevant information available.*
· ***Other information:*** *The product is difficultly biodegradable.*
· ***12.3 Bioaccumulative potential*** *No further relevant information available.*
· ***12.4 Mobility in soil*** *No further relevant information available.*
· ***Ecotoxical effects:***
· ***Remark:*** *Toxic for fish*
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***12.6 Other adverse effects*** *No further relevant information available.*

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation*** *Must be specially treated adhering to official regulations.*

· ***Uncleaned packaging:***
· ***Recommendation:***
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, IMDG, IATA***	*3082*
· ***14.2 UN proper shipping name***	
· ***ADR, IMDG, IATA***	*ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxide resin)*
· ***14.3 Transport hazard class(es)***	
· ***ADR, IMDG, IATA***	
· ***Class***	*9 Miscellaneous dangerous substances and articles.*
· ***Label***	*9*
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	*III*
· ***14.5 Environmental hazards:***	
· ***Marine pollutant:***	*Yes* *Symbol (fish and tree)*
· ***Special marking (ADR):***	*Symbol (fish and tree)*
· ***Special marking (IATA):***	*Symbol (fish and tree)*
· ***14.6 Special precautions for user***	*Warning: Miscellaneous dangerous substances and articles.*

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· **Danger code (Kemler):**	90
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	LQ7
· **Transport category**	3
· **Tunnel restriction code**	E
· **UN "Model Regulation":**	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **National regulations:**

· **Waterhazard class:** Water hazard class 2 (Assessment by list): hazardous for water.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Abteilung Qualitätssicherung
· **Contact:** Fr. Dr. Bierögel
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2
· *** Data compared to the previous version altered.**

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*
Annex: Exposure scenario

· ***Short title of the exposure scenario*** *Epilox® M 996*
· ***Sector of Use***
SU19 Building and construction work
SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
· ***Product category***
PC19 Intermediate
PC32 Polymer preparations and compounds
PC9a Coatings and paints, thinners, paint removers
PC0 Other
PC1 Adhesives, sealants
PC9b Fillers, putties, plasters, modelling clay
PC33 Semiconductors
· ***Process category***
PROC19 Hand-mixing with intimate contact and only PPE available
PROC11 Non industrial spraying
PROC7 Industrial spraying
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC6 Calendering operations
PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring
PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC24 High (mechanical) energy work-up of substances bound in materials and/or articles
· ***Article category***
AC2 Machinery, mechanical appliances, electrical/electronic articles
AC7 Metal articles
AC13 Plastic articles
AC4 Stone, plaster, cement, glass and ceramic articles
AC8 Paper articles
AC11 Wood articles
AC1 Vehicles
· ***Environmental release category***
ERC2 Formulation of preparations
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC5 Industrial use resulting in inclusion into or onto a matrix
ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix
· ***Notes***
Do not use for private / domestic purposes (household).
The product is not intended for private use.
· ***Description of the activities / processes covered in the Exposure Scenario***
See full text of the descriptors in section 1.
· ***Conditions of use*** *Customary application according to section 1.*

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· ***Duration and frequency*** *5 workdays/week.*
· ***Worker*** *8hrs (full working shift).*
· ***Environment*** *The product must not enter the sewage system or the aquatic environment.*
· ***Physical parameters***
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.
· ***Physical state*** *Fluid*
· ***Concentration of the substance in the mixture*** *The substance is main component.*
· ***Used amount per time or activity*** *According to directions for use.*
· ***Other operational conditions*** *Observe the general safety regulations when handling chemicals.*
· ***Other operational conditions affecting environmental exposure***
Observe section 6 of the Safety Data Sheet (Accidental release measures).
Use only on hard ground.
· ***Other operational conditions affecting worker exposure***
Avoid contact with the skin, eyes and clothing.
Indoor application.
Outdoor application.
Avoid contact with eyes.
Avoid contact with the skin.
Avoid long-term or repeated skin contact.
· ***Other operational conditions affecting consumer exposure*** *Keep out of the reach of children.*
· ***Other operational conditions affecting consumer exposure during the use of the product*** *Not applicable.*
· ***Risk management measures***
· ***Worker protection***
· ***Organisational protective measures*** *No special measures required.*
· ***Technical protective measures***
Ensure good ventilation/exhaustion at the workplace.
Store in cool, dry place in tightly closed receptacles.
Use product only in enclosed systems.
Ensure that suitable extractors are available on processing machines
· ***Personal protective measures***
Avoid contact with the eyes and skin.
The usual precautionary measures are to be adhered to when handling chemicals.
Store protective clothing separately.
Keep away from foodstuffs, beverages and feed.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Tightly sealed goggles
Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Measures for consumer protection***
Ensure adequate labelling.
Keep locked up and out of the reach of children.
· ***Environmental protection measures***
Avoid release to the environment. Obtain special instructions / refer to Safety Data Sheet.
· ***Air*** *No special measures required.*
· ***Water***
Do not allow to reach ground water, water bodies or sewage system.
Do not allow to reach sewage system.
· ***Soil*** *Prevent contamination of soil.*
· ***Notes*** *In case of unintended release of the product: See section 6 of the Safety Data Sheet.*
· ***Disposal measures***
Forward for special waste incineration in compliance with local legal provisions.
Ensure that waste is collected and contained.
· ***Disposal procedures***
Product residues are incinerated as special waste.

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Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· ***Waste type*** *Liquid product residues*
· ***Exposure estimation***
· ***Worker (dermal)***
The exposure estimation was carried out in accordance with ECETOC TRA.
The calculated value is smaller than the DNEL.
· ***Worker (inhalation)***
The exposure estimation was carried out in accordance with ECETOC TRA.
The calculated value is smaller than the DNEL.
· ***Environment*** *The calculated value is smaller than the PNEC.*
· ***Consumer*** *Not relevant for this Exposure Scenario.*
· ***Guidance for downstream users*** *No further relevant information available.*

SAFETY DATA SHEET

Date of issue/Date of revision 26 May 2015
Version 3

Section 1. Identification

Product name : Fiber Glass Continuous Filament

Product code : 01014

Other means of identification : Product Family: Product Name:
Chopped Strand: ChopVantage®, ChopVantage® XM, ChopVantage® HP, ChopVantage® XM HP, Delta Chop®, Chopped Strands for Nonwovens
Direct Draw: HYBON®, TUFRov®, InnoFiber® NTY, LFT4000, LFT9000
Yarn: FiberGlass Yarn, L.E.X.® Yarn, TEXO® Yarn, InnoFiber® DCS
Mat: Chopped Strand Mat, MatVantage® II
Roving: Roving for Continuous Laminating, Roving for Pultrusion/Filament Winding, Roving for SMC, HYBON® Roving for Spray Up, HYBON® Woven Roving, PREFORMANCE™ ROVING
INNOFIBER®: CR, HP, LD, TS, XM
Insulation: Texo® HTM Mat
Recycled Products: Chop/Open ESM, Chop/Open Plastic Reinforcement, Chop/Open 10 micron, Chop/Open 900, Reject Roving, Reject Chopped Strand

Product type : Article

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.

Use of the substance/ mixture : Industrial applications

Uses advised against : None identified.

Supplier : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

PPG INDUSTRIES FIBER GLASS B.V.
Energieweg 3
NL 9608 PZ Westerbroek
The Netherlands
Telephone: 31 598 313 633 / 31 598 313 911 (24h/24h) PPG Fiber Glass EMEA Service Center/Centre

Emergency telephone number : (412) 434-4515 (U.S.)

Technical Phone Number : 1-800-432-7073 ext. 302 (Fiber Glass)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : Emits toxic fumes when heated.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Article

Product name : Fiber Glass Continuous Filament

Other means of identification : Product Family: Product Name:
Chopped Strand: ChopVantage®, ChopVantage® XM, ChopVantage® HP, ChopVantage® XM HP, Delta Chop®, Chopped Strands for Nonwovens
Direct Draw: HYBON®, TUFRov®, InnoFiber® NTY, LFT4000, LFT9000
Yarn: FiberGlass Yarn, L.E.X.® Yarn, TEXO® Yarn, InnoFiber® DCS
Mat: Chopped Strand Mat, MatVantage® II
Roving: Roving for Continuous Laminating, Roving for Pultrusion/Filament Winding, Roving for SMC, HYBON® Roving for Spray Up, HYBON® Woven Roving, PREFORMANCE™ ROVING
INNOFIBER®: CR, HP, LD, TS, XM
Insulation: Texo® HTM Mat
Recycled Products: Chop/Open ESM, Chop/Open Plastic Reinforcement, Chop/Open 10 micron, Chop/Open 900, Reject Roving, Reject Chopped Strand

Ingredient name	%	CAS number
glass, oxide, chemicals	95	65997-17-3
Organic Surface Binder/Sizing	5	Not available.

Some Fiberglass products contain Textured Polyester Filament Yarn

SUB codes represent substances without registered CAS Numbers.

Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. If irritation persists, seek medical attention.

Inhalation : None known.

Skin contact : Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. If irritation persists, seek medical attention. If glass fiber becomes embedded, get medical attention.

Ingestion : Not a likely route of exposure.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Dusts from this product may cause temporary mechanical irritation.

Inhalation : Dusts from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Skin contact : Dusts from this product may cause temporary mechanical irritation.

Ingestion : Although ingestion of this product is not likely to occur in industrial applications, accidental ingestion may cause illness or irritation of the mouth and gastrointestinal tract.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard. Material is not an electrical conductor and may accumulate static charge.

Hazardous thermal decomposition products : Fiberglass will not burn, but smoking of the product may occur at approximately 400 - 500 °F (approximately 200 - 260 °C) due to decomposition of the surface binder. Surface binders may decompose in a fire situation and release carbon monoxide, carbon dioxide and water. Additionally, there are many chemicals that can evolve during any partial decomposition of chemical products. The amounts or identities cannot be predicted and can differ in each situation.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fiberglass itself will not support combustion, but in a sustained fire, proper protection against products of combustion from the fuel and sizing/binder must be worn.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No special protection is required.

For emergency responders : No special protection is required.

Environmental precautions : Fiberglass is generally considered to be an inert solid waste. No special precautions are needed in case of a release or spill.

Methods and materials for containment and cleaning up

Small spill : Vacuum or sweep up material and place in a designated, labeled waste container.

Large spill : Vacuum or sweep up material and place in a designated, labeled waste container.

Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Synthetic vitreous fibers	**OSHA PEL (United States).** TWA: 15 mg/m³ TWA: 5 mg/m³ Form: Respirable TWA: 15 mg/m³ Form: Total dust **ACGIH TLV (United States).** TWA: 1 f/cc Form: Continuous filament glass fibers TWA: 5 mg/m³, (Inhalable) Form: Continuous filament glass fibers TWA: 3 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust **ACGIH TLV (United States, 6/2013).** TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction TWA: 1 f/cc 8 hours. Form: Respirable fibers: length greater than 5 uM; aspect ratio equal to or greater than 3:1 as determined by the membrane filter method at 400-450X magnification (4-mm objective) phase contrast illumination.

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Good personal hygiene and the use of barrier creams, caps, protective gloves, cotton coveralls or long sleeved loose fitting clothing will maximize comfort. Appropriate techniques should be used to remove potentially contaminated clothing. Work clothing should be laundered separately from other clothing before reuse. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses with side shields.

Skin protection

Hand protection : Use gloves to protect against physical irritation or injury if required by handling conditions.

Body protection : Wear clean, body-covering clothing.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid.

Color : White to yellowish.

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: Not applicable. [Product does not sustain combustion.]

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Section 9. Physical and chemical properties

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 2.65 to 2.7

Solubility : Insoluble

Partition coefficient: n-octanol/water : Not available.

Viscosity : Not applicable.

Volatility : 0% (v/v), 0% (w/w)

% Solid. (w/w) : 100

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : None known.

Hazardous decomposition products : Fiberglass products may release small amounts of acetic acid and other organic materials at elevated temperatures.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Section 11. Toxicological information

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Classification

Product/ingredient name	OSHA	IARC	NTP
glass, oxide, chemicals	-	3	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Dusts from this product may cause temporary mechanical irritation.

Inhalation : Dusts from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Skin contact : Dusts from this product may cause temporary mechanical irritation.

Ingestion : Although ingestion of this product is not likely to occur in industrial applications, accidental ingestion may cause illness or irritation of the mouth and gastrointestinal tract.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Section 11. Toxicological information

Conclusion/Summary : There are no known health effects from the long term use or contact with nonrespirable continuous filament fibers, which is the type of fiberglass that PPG produces. Nonrespirable fibers cannot reach the deep lung because they have a diameter of greater than 3.5 micrometers. Fibers of this diameter cannot penetrate the narrow, bending passages of the human respiratory tract to reach the lower regions of the lung and thus, have no possibility of causing serious pulmonary damage. Instead, they deposit on the surfaces of the upper respiratory tract, nose, or pharynx. These fibers are then cleared through normal physiological mechanisms.

Animal Study: In 2000, the Institute of Occupational Medicine (IOM) in Scotland published the results of a long term inhalation study in animals exposed to fibers that were manufactured to be RESPIRABLE. Animals were exposed to a very high concentration of these RESPIRABLE fibers (1022 fibers/cc for 5 hours/day, 7 days/week for 52 weeks). Exposure to these microfibers resulted in the development of fibrosis, lung cancer and mesothelioma as a result of the fibers being able to reach the lower regions of the lung.

Chopped, crushed or severely mechanically processed fiberglass may contain a very small amount of respirable fibers that could reach the deep lung. The measured airborne concentration of these respirable fibers in areas where severe processing of fiberglass occurred has been shown to be extremely low and well below the TLV. Repeated or prolonged exposure to respirable glass fibers may cause fibrosis, lung cancer and mesothelioma. PPG fiberglass, in the form supplied, does not contain respirable fibers.

Epidemiology Studies: Two major studies in the US (performed by the University of Pittsburgh) and Europe (performed by the International Agency for Research on Cancer) showed no increase in lung cancer or respiratory disease among people working in production facilities producing NONRESPIRABLE continuous filament fiberglass. An additional smaller study performed in Canada also did not show an association between exposure of workers to fiberglass and respiratory cancer.

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

14. Transport information

Additional information

DOT : None identified.
IMDG : None identified.
IATA : None identified.

Special precautions for user : -

Section 15. Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.
Australia inventory (AICS) : All components are listed or exempted.
Canada inventory (DSL) : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : All components are listed or exempted.
Korea inventory (KECI) : All components are listed or exempted.
New Zealand (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.

United States

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 1 **Flammability** : 0 **Physical hazards** : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 **Flammability** : 0 **Instability** : 0

Other information : the PPG logo is a registered trademark of PPG Industries Ohio, Inc.

Section 16. Other information

Date of previous issue : **5/26/2015.**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 28.04.2010 *Revision: 28.04.2010*

1 Identification of the substance/preparation and of the company/undertaking

Trade name: ***FLUGROSTENTFERNER*** ***RL Nr. 23 (Rust film remover)***

Application of the substance / the preparation *Cleaning material/ Detergent*

Manufacturer/Supplier:
Tegee-Chemie Bremen GmbH
Bergedorfer Straße 6-8
D-28219 Bremen

Further information obtainable from:
R&D +49 421 389970
e-mail: info@tegee-rumler.eu

Information in case of emergency:
During normal opening times: +49 421 38997-38 (62)
At other times: +49 172 9277170

2 Hazards identification

Hazard description:
Xi Irritant
Information concerning particular hazards for human and environment:
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
R 36/38 Irritating to eyes and skin.
Classification system:
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
NFPA-Ratings for USA
Health = 1
Flammability = 0
Reactivity = 0
HMIS-Ratings for USA
Health = 1
Flamability = 0
Reactivity = 0

3 Composition/information on ingredients

Chemical characterization
Description: *Mixture: consisting of the following components.*

Dangerous components:

CAS: 6153-56-6 *oxalic acid-2-hydrate* *1-5%*
Xn; R 21/22

CAS: 7664-38-2 *phosphoric acid* *1-5%*
EINECS: 231-633-2 C; R 34

CAS: 68411-30-3 *Benzenesulfonic acid, linear alkyl, sodium salt* *0.1-1%*
EINECS: 270-115-0 Xn, Xi; R 22-36/38

Regulation (EC) No 648/2004 on detergents / Labelling for contents

anionic surfactants
< 5%

Additional information: *For the wording of the listed risk phrases refer to section 16.*

4 First-aid measures

After inhalation: *Supply fresh air.*
After skin contact: *Immediately wash with water and soap and rinse thoroughly.*

(Contd. on page 2)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 28.04.2010 *Revision: 28.04.2010*

Trade name: FLUGROSTENTFERNER RL Nr. 23 (Rust film remover)

(Contd. of page 1)

After eye contact: *Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*
After swallowing: *If symptoms persist consult doctor.*

*
5 Fire-fighting measures

Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
For safety reasons unsuitable extinguishing agents: *Water with full jet*
Special hazards caused by the substance, its products of combustion or resulting gases:
In case of fire, the following can be released:
Carbon monoxide (CO)
Sulphur dioxide (SO2)
Protective equipment: *No special measures required.*

6 Accidental release measures

Person-related safety precautions: *Wear protective clothing.*
Measures for environmental protection: *Do not allow to penetrate the ground/soil.*
Measures for cleaning/collecting:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Additional information:
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling:
Information for safe handling: *Keep receptacles tightly sealed.*
Information about fire - and explosion protection: *No special measures required.*

Storage:
Requirements to be met by storerooms and receptacles: *Store only in the original receptacle.*
Information about storage in one common storage facility: *Store away from foodstuffs.*
Further information about storage conditions: *Store under lock and key and out of the reach of children.*

*
8 Exposure controls/personal protection

Additional information about design of technical facilities: *No further data; see item 7.*

Ingredients with limit values that require monitoring at the workplace:

7664-38-2 phosphoric acid

WEL Short-term value: 2 mg/m³
Long-term value: 1 mg/m³
Additional information: *The lists valid during the making were used as basis.*

Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Avoid contact with the eyes and skin.
Use skin protection cream for skin protection.
Respiratory protection: *Not required.*
Protection of hands: *Protective gloves*

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Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 28.04.2010 *Revision: 28.04.2010*

Trade name: FLUGROSTENTFERNER RL Nr. 23 (Rust film remover)

(Contd. of page 2)

Material of gloves
Rubber gloves
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.4 mm
Penetration time of glove material
Value for the permeation: Level ≥ 480 min
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
Eye protection: *Safety glasses*

9 Physical and chemical properties

General Information

Form:	*Fluid*
Colour:	*Transparent*
Odour:	*Characteristic*

Change in condition

Melting point/Melting range:	*0°C*
Boiling point/Boiling range:	*100°C*
Flash point:	*Not applicable*
Flammability (solid, gaseous):	*Void*
Ignition temperature:	*Void*
Decomposition temperature:	*Not determined*
Self-igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product does not present an explosion hazard.*

Explosion limits:

Lower:	*Not applicable*
Upper:	*Not applicable*
Oxidizing properties	*Void*
Vapour pressure:	*Not determined*
Density at 20°C:	*1.02 g/cm³*

Solubility in / Miscibility with water: *Fully miscible.*

pH-value at 20°C:	*1.4*

Viscosity:

Dynamic at 20°C:	*1200 mPas*

Solvent content:

Organic solvents:	*0.0 %*

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: *No decomposition if used according to specifications.*
Materials to be avoided:
Dangerous reactions *No dangerous reactions known.*
Dangerous decomposition products: *No dangerous decomposition products known.*

(Contd. on page 4)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 28.04.2010 *Revision: 28.04.2010*

Trade name: ***FLUGROSTENTFERNER RL Nr. 23 (Rust film remover)***

(Contd. of page 3)

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: *Irritant to skin and mucous membranes.*
on the eye: *Irritating effect.*
Sensitization: *No sensitizing effects known.*
Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

12 Ecological information

Additional ecological information:
General notes:
Must not reach sewage water or drainage ditch undiluted or unneutralized.
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
The product does not contain organic complexing agents.
The product does not contain organically bounded halogens (AOX-free).

13 Disposal considerations

Product:
Recommendation
Dilute concentrate with water and neutralize afterwards with suitable alkali material (sodium hydroxide solution, lime).
The formed neutral salts are relatively environment-friendly.
European waste catalogue
07 06 01 aqueous washing liquids and mother liquors

Uncleaned packaging:
Recommendation:
Packaging may be reused or recycled after cleaning.
Disposal must be made according to official regulations.
Recommended cleansing agents: *Water, if necessary together with cleansing agents.*

14 Transport information

Land transport ADR/RID (cross-border)
ADR/RID class: -

Maritime transport IMDG:
IMDG Class: -
Marine pollutant: *No*

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: -

15 Regulatory information

TSCA (Toxic Substances Control Act)
7664-38-2 phosphoric acid

(Contd. on page 5)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 28.04.2010 *Revision: 28.04.2010*

Trade name: FLUGROSTENTFERNER RL Nr. 23 (Rust film remover)

(Contd. of page 4)

Labelling according to EU guidelines: 1999/45/EU
The product has been marked in accordance with EU Directives / respective national laws.

Code letter and hazard designation of product:
Xi Irritant

Hazard-determining components of labelling:
oxalic acid-2-hydrate
phosphoric acid

Risk phrases:
36/38 Irritating to eyes and skin.

Safety phrases:
2 Keep out of the reach of children.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
28 After contact with skin, wash immediately with plenty of water.
37/39 Wear suitable gloves and eye/face protection.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant R-phrases
21/22 Harmful in contact with skin and if swallowed.
22 Harmful if swallowed.
34 Causes burns.
36/38 Irritating to eyes and skin.

Department issuing MSDS: *R&D*

Contact:
+49 421 38997 38
+49 421 38997 62

**** Data compared to the previous version altered.***

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

CHEVRON and TEXACO REGULAR UNLEADED GASOLINES

Product Use: Fuel
Product Number(s): 201000, 204039, 204054, 204067, 204086, 204139, 204153, 204585, 204750, 204751 [See Section 16 for Additional Product Numbers]
Synonyms: Calco Regular Unleaded Gasoline, Chevron Regular Unleaded Gasoline, Chevron UL/CQ Gasoline, Gasolines, Automotive, Texaco Unleaded Gasoline
Company Identification
Chevron Products Company
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Product Information: (800) 582-3835
SDS Requests: (800) 414-6737

SPECIAL NOTES: This MSDS applies to: all motor gasoline.

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable liquid: Category 1. Aspiration toxicant: Category 1. Carcinogen: Category 1A. Target organ toxicant (repeated exposure): Category 1. Eye irritation: Category 2A. Germ Cell Mutagen: Category 1B. Skin irritation: Category 2. Reproductive toxicant (developmental): Category 2. Target organ toxicant (central nervous system): Category 3. Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.

Signal Word: Danger

Physical Hazards: Extremely flammable liquid and vapor.

Health Hazards: May be fatal if swallowed and enters airways. May cause genetic defects. May cause cancer. Causes skin irritation. Causes serious eye irritation. Suspected of damaging the unborn child. May cause drowsiness or dizziness.

Target Organs: Causes damage to organs (Blood/Blood Forming Organs) through prolonged or repeated exposure.

Environmental Hazards: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

General: Keep out of reach of children. Read label before use.

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting/equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. IF SWALLOWED: Immediately call a poison center or doctor/physician. Do NOT induce vomiting. Call a poison center or doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention. In case of fire: Use media specified in the SDS to extinguish. Specific treatment (see Notes to Physician on this label). Collect spillage.

Storage: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %vol/vol
Toluene (methylbenzene)	108-88-3	1 - 35 %vol/vol
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	1330-20-7	1 - 15 %vol/vol
Pentane, 2,2,4-trimethyl- (Isooctane)	540-84-1	1 - 13 %vol/vol
Butane	106-97-8	1 - 12 %vol/vol
Ethanol	64-17-5	0 - 10 %vol/vol
Benzene	71-43-2	0.1 - 4.9 %vol/vol
Hexane	110-54-3	1 - 5 %vol/vol
Heptane	142-82-5	1 - 4 %vol/vol
Ethyl benzene	100-41-4	0.1 - 3 %vol/vol
Cyclohexane	110-82-7	1 - 3 %vol/vol
Naphthalene	91-20-3	0.1 - 2 %vol/vol
Methylcyclohexane	108-87-2	1 - 2 %vol/vol

Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory. The appropriate CAS number for refinery blended motor gasoline is 86290-81-5. The product specifications of motor gasoline sold in your area will depend on applicable Federal and State regulations.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.

Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Contact with the eyes causes severe irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.

Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering.

Ingestion: Highly toxic; may be fatal if swallowed. Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

Inhalation: Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if inhaled above the recommended exposure limit.

Cancer: Prolonged or repeated exposure to this material may cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Genetic Toxicity: Contains material that may cause heritable genetic damage based on animal data.

Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit:Blood/Blood Forming Organs Risk depends on duration and level of exposure. See Section 11 for additional information.

Indication of any immediate medical attention and special treatment needed

Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
Unusual Fire Hazards: See Section 7 for proper handling and storage.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Never siphon gasoline by mouth.
Do not store in open or unlabeled containers. READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. Do not get in eyes, on skin, or on clothing. Do not get in eyes. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank

cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted.
Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Gasoline	ACGIH	300 ppm (weight)	500 ppm (weight)	--	A3
Toluene (methylbenzene)	ACGIH	20 ppm (weight)	--	--	--
Toluene (methylbenzene)	OSHA Z-2	200 ppm (weight)	--	300 ppm (weight)	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	ACGIH	100 ppm (weight)	150 ppm (weight)	--	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	OSHA Z-1	435 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	OSHA Z-1	2350 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	ACGIH	300 ppm (weight)	--	--	--
Butane	ACGIH	--	1000 ppm (weight)	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4 A3
Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1 Skin
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Benzene	CVX	1 ppm (weight)	5 ppm (weight)	--	--
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Hexane	OSHA Z-1	1800 mg/m3	--	--	--
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Heptane	OSHA Z-1	2000 mg/m3	--	--	--
Ethyl benzene	ACGIH	20 ppm (weight)	125 ppm (weight)	--	A3
Ethyl benzene	OSHA Z-1	435 mg/m3	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Cyclohexane	OSHA Z-1	1050 mg/m3	--	--	--

Naphthalene	ACGIH	10 ppm (weight)	15 ppm	--	Skin A3
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--
Methylcyclohexane	ACGIH	400 ppm (weight)	--	--	--
Methylcyclohexane	OSHA Z-1	2000 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: 5 psi - 15 psi (Typical) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): 3 - 4 (Typical)
Initial Boiling Point: 27.2°C (81°F) - 204.4°C (400°F) (Typical)
Solubility: Insoluble in water; miscible with most organic solvents.
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.70 g/ml - 0.80 g/ml @ 15.6°C (60.1°F) (Typical)
Viscosity: <1 SUS @ 37.8°C (100°F)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: 2 - 7

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F)
Autoignition: > 280 °C (> 536 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 1.4 Upper: 7.6

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.

Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.

Acute Dermal Toxicity: LD50: >3.75 g/kg (rabbit).

Acute Oral Toxicity: LD50: >5 ml/kg (rat).

Acute Inhalation Toxicity: 4 hour(s) LD50: >20000 mg/m3 (rat).
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains naphthalene.

GENERAL TOXICITY: Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts.
REPRODUCTIVE TOXICITY AND BIRTH DEFECTS: Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. GENETIC TOXICITY: Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests.CARCINOGENICITY: In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day.

This product contains cyclohexane.
Cyclohexane primarily affects the central nervous systems of laboratory animals and humans. Acute or prolonged inhalation of cyclohexane at levels below the recommended exposure limits does not result in toxic effects while acute exposures to levels above these recommended limits can cause reversible central nervous system depression. Prolonged exposures of laboratory animals to high levels (up to low thousands of parts per million) have also caused reversible effects which included hyperactivity, diminished response to stimuli, and adaptive liver changes while very high levels (high thousands of parts per million) were fatal. No developmental effects were seen in rats or rabbits following exposures of up to 7000 ppm cyclohexane. No reproductive effects occurred in rats, although postnatal pup growth was reduced at 7000 ppm in a similar manner as observed in the parental animals. Cyclohexane has not been shown to be mutagenic in several in vitro and in vivo assays and has not produced tumors in several dermal application long-term bioassays. Based on these results and the lack of any mutagenic or genotoxic metabolites, cyclohexane is not expected to be mutagenic or genotoxic. Following dermal exposure, cyclohexane is rapidly absorbed, metabolized,and excreted.

This product contains butane.
An atmospheric concentration of 100,000 ppm (10%) butane is not noticeably irritating to the eyes, nose or respiratory tract, but will produce slight dizziness in a few minutes of exposure. No chronic systemic effect has been reported from occupational exposure.

This product contains benzene.
GENETIC TOXICITY/CANCER: Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.

REPRODUCTIVE/DEVELOPMENTAL TOXICITY: No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother. However, some evidence of fetal toxicity such as delayed physical development has been seen at such levels. The available information on the effects of benzene on human pregnancies is inadequate but it has been established that benzene can cross the human placenta.
OCCUPATIONAL: The OSHA Benzene Standard (29 CFR 1910.1028) contains detailed requirements for training, exposure monitoring, respiratory protection and medical surveillance triggered by the exposure level. Refer to the OSHA Standard before using this product.

This product contains n-hexane.
TARGET ORGAN TOXICITY: Prolonged or repeated ingestion, skin contact or breathing of vapors of n-hexane has been shown to cause peripheral neuropathy. Recovery ranges from no recovery to complete recovery depending upon the severity of the nerve damage. Exposure to 1000 ppm n-hexane for 18 hr/day for 61 days has been shown to cause testicular damage in rats. However, when rats were exposed to higher concentrations for shorter daily periods (10,000 ppm for 6 h/day, 5 days/wk for 13 weeks), no testicular lesions were seen.
CARCINOGENICITY: Chronic exposure to commercial hexane (52% n-hexane) at a concentration of 9000ppm was not carcinogenic to rats or to male mice, but did result in an increased incidence of liver tumors in female mice. No carcinogenic effects were observed in female mice exposed to 900 or 3000 ppm hexane or in male mice. The relevance for humans of these hexane-induced mouse liver tumors is questionable.
GENETIC TOXICITY: n-Hexane caused chromosome aberrations in bone marrow of rats, but was negative in the AMES and mouse lymphoma tests.

This product contains ethanol (ethyl alcohol).
Chronic ingestion of ethanol can damage the liver, nervous system and heart. Chronic heavy consumption of alcoholic beverages has been associated with an increased risk of cancer. Ingestion of ethanol during pregnancy can cause human birth defects such as fetal alcohol syndrome. Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and health hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2/3, 8 and 15 of this MSDS. More detailed information on the health hazards of specific gasoline components can be obtained calling the Chevron Emergency Information Center (see Section 1 for phone numbers).
Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature. As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.
Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors

in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also noted that there was no opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including the presence in gasoline of benzene. The actual evidence for carcinogenicity in humans was considered inadequate.

MUTAGENICITY: Gasoline was not mutagenic, with or without activation, in the Ames assay (Salmonella typhimurium), Saccharamyces cerevisesae, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chomosomal aberrations in their bone marrow cells.

EPIDEMIOLOGY: To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia (all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

This product contains ethylbenzene.

BIRTH DEFECTS AND REPRODUCTION: Ethylbenzene is not expected to cause birth defects or other developmental effects based on well-conducted studies in rabbits and rats sponsored by NIOSH. Other studies in rats and mice which reported urinary tract malformations have many deficiencies and have limited usefulness in evaluating human risk. Reproductive effects are not expected based on a NIOSH study of fertility, and lack of effects observed for sperm counts and motility, estrous cycle and pathology of reproductive organs following repeated exposures. HEARING: Statistically significant losses in outer hair cells (OHCs) were observed in rats exposed to >=200 ppm ethylbenzene, 6 hours/day, 6 days/week for 13 weeks, after an 8-week recovery period. Following longer exposure, inner hair cells losses were also observed in rats exposed to >= 600 ppm ethylbenzene, but only occasionally in rats exposed to 400 ppm. The Lowest Observed Adverse Effect Level in rats (LOAEL) was 200 ppm for losses of OHCs. Guinea pigs exposed to ethylbenzene at 2,500 ppm, 6 hours/day for 5 days did not show auditory deficits or losses in OHCs. The concentration of ethylbenzene used in the JP-8 study was approximately 10 ppm. GENETIC TOXICITY: Ethylbenzene tested negative in the bacterial mutation test, Chinese Hamster Ovary (CHO) cell in vitro assay, sister chromatid exchange assay and an unscheduled DNA synthesis assay. Conflicting results have been reported for the mouse lymphoma cell assay. Increased micronuclei were reported in an

in vitro Syrian hamster embryo cell assay; however, two in vivo micronuclei studies in mice were negative. In Syrian hamster embryo cells in vitro, cell transformation was observed at 7 days of incubation but not at 24 hours. Based on these results, ethylbenzene is not expected to be mutagenic or clastogenic.
CARCINOGENICITY: In studies conducted by the National Toxicology Program, rats and mice were exposed to ethylbenzene at 25, 250 and 750 ppm for six hours per day, five days per week for 103 weeks. In rats exposed to 750 ppm, the incidence of kidney tubule hyperplasia and tumors was increased. Testicular tumors develop spontaneously in nearly all rats if allowed to complete their natural life span; in this study, the development of these tumors appeared to be enhanced in male rats exposed to 750 ppm. In mice, the incidences of lung tumors in males and liver tumors in females exposed to 750 ppm were increased as compared to control mice but were within the range of incidences observed historically in control mice. Other liver effects were observed in male mice exposed to 250 and 750 ppm. The incidences of hyperplasia were increased in the pituitary gland in female mice at 250 and 750 ppm and in the thyroid in male and female mice at 750 ppm.

This product contains toluene.
GENERAL TOXICITY: The primary effects of exposure to toluene in animals and humans are on the central nervous system. Solvent abusers, who typically inhale high concentrations (thousands of ppm) for brief periods of time, in addition to experiencing respiratory tract irritation, often suffer permanent central nervous system effects that include tremors, staggered gait, impaired speech, hearing and vision loss, and changes in brain tissue. Death in some solvent abusers has been attributed to cardiac arrhythmias, which appear to be have been triggered by epinephrine acting on solvent sensitized cardiac tissue. Although liver and kidney effects have been seen in some solvent abusers, results of animal testing with toluene do not support these as primary target organs.
HEARING: Humans who were occupationally exposed to concentrations of toluene as low as 100 ppm for long periods of time have experienced hearing deficits. Hearing loss, as demonstrated using behavioral and electrophysiological testing as well as by observation of structural damage to cochlear hair cells, occurred in experimental animals exposed to toluene. It also appears that toluene exposure and noise may interact to produce hearing deficits.
COLOR VISION: In a single study of workers exposed to toluene at levels under 50 ppm, small decreases in the ability to discriminate colors in the blue-yellow range have been reported for female workers. This effect, which should be investigated further, is very subtle and would not likely have been noticed by the people tested.
REPRODUCTIVE/DEVELOPMENTAL TOXICITY: Toluene may also cause mental and/or growth retardation in the children of female solvent abusers who directly inhale toluene (usually at thousands of ppm) when they are pregnant. Toluene caused growth retardation in rats and rabbits when administered at doses that were toxic to the mothers. In rats, concentrations of up to 5000 ppm did not cause birth defects. No effects were observed in the offspring at doses that did not intoxicate the pregnant animals. The exposure level at which no effects were seen (No Observed Effect Level, NOEL) is 750 ppm in the rat and 500 ppm in the rabbit.

This product contains xylene.
ACUTE TOXICITY: The primary effects of exposure to xylene in animals and humans are on the central nervous system. In addition,in some individuals, xylene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation. DEVELOPMENTAL TOXICITY: Xylene has been reported to cause developmental toxicity in rats and mice exposed by inhalation during pregnancy.

The effects noted consisted of delayed development and minor skeletal variations. In addition, when pregnant mice were exposed by ingestion to a level that killed nearly one-third of the test group, lethality (resorptions) and malformations (primarily cleft palate) occurred. Since xylene can cross the placenta, it may be appropriate to prevent exposure during pregnancy. GENETIC TOXICITY/CARCINOGENICITY: Xylene was not genotoxic in several mutagenicity testing assays including the Ames test. In a cancer study sponsored by the National Toxicology Program (NTP),technical grade xylene gave no evidence of carcinogenicity in rats or mice dosed daily for two years. HEARING: Mixed xylenes have been shown to cause measurable hearing loss in rats exposed to 800 ppm in the air for 14 hours per day for six weeks. Exposure to 1450 ppm xylene for 8 hours caused hearing loss while exposure to 1700 ppm for 4 hours did not. Although no information is available for lower concentrations, other chemicals that cause hearing loss in rats at relatively high concentrations do not cause hearing loss in rats at low concentrations. Worker exposure to xylenes at the permissible exposure limit (100 ppm, time-weighted average) is not expected to cause hearing loss.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

48 hour(s) LC50: 3.0 mg/l (Daphnia magna)
96 hour(s) LC50: 1.8 mg/l (Mysidopsis bahia)
96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)
96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: 2 - 7

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations. Check governmental regulations and local authorities for approved disposal of this material.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: UN1203, GASOLINE, 3, II; OPTIONAL DISCLOSURE: UN1203, GASOLINE, 3, II, MARINE POLLUTANT (GASOLINE)

IMO/IMDG Shipping Description: UN1203, GASOLINE, 3, II, FLASH POINT SEE SECTION 5 OR 9, MARINE POLLUTANT (GASOLINE)

ICAO/IATA Shipping Description: UN1203, GASOLINE, 3, II

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	YES
2.	Delayed (Chronic) Health Effects:	YES
3.	Fire Hazard:	YES
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	03, 05, 06, 07
Cyclohexane	05, 06, 07
Naphthalene	01-2B, 02, 04, 05, 06, 07
Pentane, 2,2,4-trimethyl- (Isooctane)	05, 06, 07
Ethyl benzene	01-2B, 03, 04, 05, 06, 07
Methylcyclohexane	05, 06, 07
Benzene	01-1, 02, 03, 04, 05, 06, 07
Ethanol	01-1, 02, 04, 05, 06, 07
Toluene (methylbenzene)	04, 05, 06, 07
Butane	05, 06, 07
Hexane	05, 06, 07
Gasoline	01-2B, 07
Heptane	05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	186 lbs
Cyclohexane	1000 lbs	None	34188 lbs
Ethyl benzene	1000 lbs	None	34964 lbs
Hexane	5000 lbs	None	129149 lbs
Naphthalene	100 lbs	None	4000 lbs
Pentane, 2,2,4-trimethyl- (Isooctane)	1000 lbs	None	6270 lbs
Toluene (methylbenzene)	1000 lbs	None	2627 lbs
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	100 lbs	None	649 lbs

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 4 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 4 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Additional Product Number(s): 201023, 201054, 201055, 201075, 201090, 201105, 201106, 201120, 201121, 201122, 201126, 201128, 201131, 201136, 201141, 201142, 201148, 201153, 201158, 201161, 201162, 201168, 201175, 201181, 201185, 201186, 201188, 201216, 201217, 201218, 201236, 201237, 201238, 201266, 201267, 201268, 201277, 201278, 201279, 201286, 201287, 201289, 201296, 201297, 201298, 201849, 201850, 201855, 201856, 201857, 204000, 204001, 204002, 204003, 204010, 204011, 204022, 204023, 204046, 204047, 204070, 204071, 204088, 204089, 204104, 204105, 204116, 204117, 204140, 204141, 204164, 204165, 204188, 204189, 204200, 204201, 204207, 204212, 204213, 204224, 204225, 204248, 204249, 204272, 204273, 204290, 204291, 204322, 204323, 204324, 204350, 204352, 204354, 204356, 204358, 204359, 204364, 204365, 204370, 204371, 204376, 204377, 204382, 204383, 204388, 204389, 204394, 204395, 204400, 204401, 204406, 204407, 204412, 204413, 204418, 204419, 204424, 204425, 204430, 204431, 204436, 204437, 204442, 204446, 204450, 204454, 204458, 204462, 204466, 204467, 204484, 204485, 204502, 204503, 204520, 204521, 204538, 204539, 204556, 204557, 204574, 204575, 204592, 204593, 204610, 204611, 204628, 204629, 204646, 204647, 204664, 204665, 204682, 204690, 204691, 204696, 204697, 204702, 204703, 204708, 204709, 204721, 204722, 204727, 204728, 204739, 241765

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1,16

Revision Date: MARCH 10, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with

which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

ExxonMobil

642801-60 GLYGOYLE GREASE 00
MATERIAL SAFETY DATA BULLETIN

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: GLYGOYLE GREASE 00
SUPPLIER: EXXONMOBIL OIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Health and Safety Emergency (call collect): 609-737-4411

24 - Hour Transportation Emergency:
CHEMTREC: 800-424-9300 202-483-7616
LUBES AND FUELS: 281-834-3296

Product and Technical Information:
Lubricants and Specialties: 800-662-4525 800-443-9966
Fuels Products: 800-947-9147
MSDS Fax on Demand: 713-613-3661
MSDS on Internet: http://www.exxon.com
http://www.mobil.com

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2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: POLYGLYCOLS

GLOBALLY REPORTABLE MSDS INGREDIENTS:

Substance Name	Approx. Wt%
1-NAPHTHYLAMINE, N-PHENYL (90-30-2)	1-5

See Section 8 for exposure limits (if applicable).

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3. HAZARDS IDENTIFICATION

Under normal conditions of use, this product is not considered hazardous according to regulatory guidelines (See section 15).

EMERGENCY OVERVIEW: Pale Yellow Grease. DOT ERG No. : NA

POTENTIAL HEALTH EFFECTS: Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation.

POTENTIAL ENVIRONMENTAL EFFECTS: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

For further health effects/toxicological data, see Section 11.

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4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.

SKIN CONTACT: Wash contact areas with soap and water. Remove and clean oil soaked clothing daily and wash affected area. INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

INHALATION: Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.

INGESTION: Not expected to be a problem. Seek medical attention if discomfort occurs. Do not induce vomiting.

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5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

COMBUSTION PRODUCTS: Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

Flash Point C(F): > 204(400) (ESTIMATED FOR OIL, ASTM D-92 (COC)).

Flammable Limits (approx.% vol.in air) - LEL: NE, UEL: NE

NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0

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6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to

Coast Guard National Response Center toll free number (800)424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:
LAND SPILL: Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping or contain spilled material with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.
WATER SPILL: Confine the spill immediately with booms. Warn other ships in the vicinity. Notify port and other relevant authorities. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.

ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.

PERSONAL PRECAUTIONS: See Section 8

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7. HANDLING AND STORAGE

HANDLING: High pressure injection under the skin may occur due to the rupture of pressurized lines. Always seek medical attention. No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.

STORAGE: Keep containers closed when not in use. Do not store in open or unlabelled containers. Store away from strong oxidizing agents and combustible materials. Do not store near heat, sparks, flame or strong oxidants.

SPECIAL PRECAUTIONS: Prevent small spills and leakages to avoid slip hazard.

EMPTY CONTAINER WARNING: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

This product does not contain any components which have recognized exposure limits.

VENTILATION: Use adequate ventilation.

RESPIRATORY PROTECTION: No special requirements under ordinary conditions of use and with adequate ventilation.

EYE PROTECTION: Generally eye contact is unlikely with this type material. If eye contact is likely, safety glasses with side

shields or chemical type goggles should be worn.
SKIN PROTECTION: If prolonged or repeated skin contact is likely, oil impervious gloves should be worn. Good personal hygiene practices should always be followed.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Grease
COLOR: Pale Yellow
ODOR: Mild
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C(F): NE
DROP POINT C(F): NE
FLASH POINT C(F): > 204(400) (ESTIMATED FOR OIL, ASTM D-92 (COC))
FLAMMABILITY (solids): NE
AUTO FLAMMABILITY C(F): NA
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: NE
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 1
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: > 120.0
VISCOSITY AT 100 C, cSt: NE
POUR POINT C(F): NA
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: NE
NOTE: MOST PHYSICAL PROPERTIES FOR OIL COMPONENT.
DMSO EXTRACT, IP-346 (WT.%): <3, for mineral oil only
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

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10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat and high energy sources of ignition.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Product does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION: Will not occur.

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11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---
ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

OTHER ACUTE TOXICITY DATA: Although an acute inhalation study was not performed with this product, a variety of mineral oils and synthetic base oils, such as those in this product have been tested. These samples had virtually no effect other than a nonspecific inflammatory response in the lung to the aerosolized mineral oil. The presence of additives in other tested formulations (in approximately the same amounts as in the present formulation) did not alter the observed effects.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

No significant adverse effects were found in studies using repeated dermal applications of similar formulations to the skin of laboratory animals for 13 weeks at doses significantly higher than those expected during normal industrial exposure. The animals were evaluated extensively for effects of exposure (hematology, serum chemistry, urinalysis, organ weights, microscopic examination of tissues etc.).

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

No teratogenic effects would be expected from dermal exposure, based on laboratory developmental toxicity studies of major components in this formulation and/or materials of similar composition.

---CHRONIC TOXICOLOGY (SUMMARY)---

Repeated and/or prolonged exposure may cause irritation to the skin, eyes or respiratory tract. For mineral base oils: Base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as Modified Ames Test, IP-346, and/or other analytical methods. For synthetic base oils: The base oils in this product have been tested in the Ames assay and other tests of mutagenicity with negative results. These base oils are not expected to be carcinogenic with chronic dermal exposures.

---SENSITIZATION (SUMMARY)---

Not expected to be sensitizing based on tests of this product, components, or similar products.

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12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS:

This environmental assessment was conducted using information on the individual components as no test data was available for this specific formulation.

ECOTOXICITY: This product is expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY: Not established.

PERSISTENCE AND DEGRADABILITY: This product is expected to be inherently biodegradable, as the principal components have been shown to degrade at slow to moderate rates.

BIOACCUMULATIVE POTENTIAL: Not established.

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13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity. The unused product is not formulated with substances covered by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

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14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

RID/ADR: NOT REGULATED BY RID/ADR.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

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15. REGULATORY INFORMATION

US OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this product is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

EU Labeling: Product is dangerous as defined by the European Union Dangerous Substances/Preparations Directives.

Symbol: Not applicable.

Risk Phrase(s): R52/53.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrase(s): S61.
Avoid release to the environment. Refer to special instructions/Safety data sheets.

Governmental Inventory Status: All components comply with TSCA, and EINECS/ELINCS.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains no chemicals subject to the supplier notification requirements of SARA (313) toxic release program.

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS *
LITHIUM-SOAP THICKENER (2.69%)	7620-77-1	22

--- REGULATORY LISTS SEARCHED ---

1=ACGIH ALL	6=IARC 1	11=TSCA 4	16=CA P65 CARC	21=LA RTK
2=ACGIH A1	7=IARC 2A	12=TSCA 5a2	17=CA P65 REPRO	22=MI 293
3=ACGIH A2	8=IARC 2B	13=TSCA 5e	18=CA RTK	23=MN RTK
4=NTP CARC	9=OSHA CARC	14=TSCA 6	19=FL RTK	24=NJ RTK
5=NTP SUS	10=OSHA Z	15=TSCA 12b	20=IL RTK	25=PA RTK
				26=RI RTK

* EPA recently added new chemical substances to its TSCA Section 4 test rules. Please contact the supplier to confirm whether the ingredients in this product currently appear on a TSCA 4 or TSCA 12b list.
Code key:CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive

16. OTHER INFORMATION

USE: GREASE

NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES

ARE NOT FORMULATED TO CONTAIN PCBS.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

INDUSTRIAL LABEL

Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation. Always observe good hygiene measures. First Aid: Wash skin with soap and water. Flush eyes with water. If overcome by fumes or vapor, remove to fresh air. If ingested do not induce vomiting. If symptoms persist seek medical assistance. Read and understand the MSDS before using this product.

****
For Internal Use Only: MHC: 1* 1* 1* 1* 1*, MPPEC: A, TRN: 642801-60, ELIS: 400025, CMCS97: 970446, REQ: FRANCE, SAFE USE: L
EHS Approval Date: 20OCT2003
****

Prepared by: ExxonMobil Oil Corporation
Environmental Health and Safety Department, Clinton, USA

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : HARDENER HV 5309-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Hardener

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global Product EHS AdMat huntsman.com

1.4 Emergency telephone number

Emergency telephone number : +45 82 12 12 12
EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin corrosion, Category 1B	H314: Causes severe skin burns and eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Chronic aquatic toxicity, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P261	Avoid breathing mist or vapours.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Disposal:

P501	Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous components which must be listed on the label:

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated

diethylenetriamine

2-piperazin-1-ylethylamine

2,4,6-tris(dimethylaminomethyl)phenol

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (% w/w)
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	68683-29-4	Skin Sens. 1; H317 Skin Irrit. 2; H315	13 - 30
Bis(isopropyl)naphthalene	38640-62-9 254-052-6 -	Asp. Tox. 1; H304 Aquatic Chronic 1; H410	7 - 13
2,2 -Iminodi(ethylamine)	111-40-0 203-865-4 01-2119473793-27	Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 STOT SE 3; H335	3 - 7
2-Piperazin-1-ylethylamine	140-31-8 205-411-0 01-2119471486-30	Acute Tox. 4; H302 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412	1 - 3
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2 202-013-9 01-2119560597-27	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412 Skin Sens. 1B; H317	1 - 3
4,4 -Isopropylidenediphenol	80-05-7 201-245-8 01-2119457856-23	Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 2; H361f STOT SE 3; H335 Aquatic Chronic 2; H411	0,1 - 1
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8 01-2119487919-13	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 Aquatic Chronic 3; H412	0,1 - 1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	:	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.
In case of skin contact	:	Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during	:	Do not allow run-off from fire fighting to enter drains or water

firefighting		courses.
Hazardous combustion products	:	No data is available on the product itself.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Specific extinguishing methods	:	No data is available on the product itself.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. To avoid spills during handling keep bottle on a metal tray.

Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Recommended storage temperature : 2 - 40 °C

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
diethylenetriamine	111-40-0	GV	1 ppm 4 mg/m3	DK OEL
Further information	Means that the substance can be absorbed through the skin., Guiding list of organic solvents.			
bisphenol A	80-05-7	GV (inhalable dust)	3 mg/m3	DK OEL
Further information	List of limit values for dust. Limit values for dust have been established for concentrations of total dust and for concentrations of respirable dust. Except for wood dust, Arbejdstilsynet has not established a limit value for inhalable dust (DS/EN 481 on inhalable dust)., The substance has an EC-limit value			
		TWA (inhalable dust)	10 mg/m3	2009/161/EU
Further information	Indicative			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
diethylenetriamine	Workers	Inhalation	Systemic effects,	92,1 mg/m3

			Short-term exposure	
	Workers	Inhalation	Local effects, Short-term exposure	2,6 mg/m3
	Workers	Dermal	Systemic effects, Long-term exposure	11,4 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Long-term exposure	15,4 mg/m3
	Workers	Dermal	Local effects, Long-term exposure	1,1 mg/cm2
	Workers	Inhalation	Local effects, Long-term exposure	0,87 mg/m3
	Consumers	Oral	Local effects, Short-term exposure	4,88 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Short-term exposure	27,5 mg/m3
	Consumers	Dermal	Systemic effects, Long-term exposure	4,88 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Long-term exposure	4,6 mg/m3
2,4,6-tris(dimethylaminomethyl)phenol	Workers	Inhalation	Systemic effects, Long-term exposure	0,31 mg/m3
bis(isopropyl)naphthalene	Workers	Inhalation	Systemic effects, Long-term exposure	30 mg/m3
	Workers	Dermal	Systemic effects, Long-term exposure	4,3 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Long-term exposure	7,4 mg/m3
	Consumers	Dermal	Systemic effects, Long-term exposure	2,1 mg/kg bw/day
	Consumers	Oral	Systemic effects, Long-term exposure	2,1 mg/kg bw/day
2-piperazin-1-ylethylamine	Workers	Dermal	Systemic effects, Short-term exposure	20 mg/kg bw/day
	Workers	Dermal	Local effects, Short-term exposure	0,04 mg/cm2
	Workers	Dermal	Systemic effects, Long-term exposure	3,3 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Long-term exposure	3,6 mg/m3
	Workers	Dermal	Local effects, Long-term exposure	0,006 mg/cm2
	Consumers	Dermal	Systemic effects, Long-term exposure	1,7 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Short-term exposure	5,3 mg/m3
	Consumers	Oral	Systemic effects, Long-term exposure	0,3 mg/kg bw/day

	Consumers	Dermal	Local effects, Short-term exposure	0,02 mg/cm2
	Consumers	Dermal	Systemic effects, Short-term exposure	10 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Long-term exposure	0,9 mg/m3
	Consumers	Oral	Systemic effects, Short-term exposure	1,5 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Short-term exposure	21,4 mg/m3
	Consumers	Dermal	Local effects, Long-term exposure	0,003 mg/cm2
3,6-diazaoctanethylenediamin	Workers	Inhalation	Systemic effects, Short-term exposure	5380 mg/m3
	Workers	Dermal	Systemic effects, Long-term exposure	0,57 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Long-term exposure	1 mg/m3
	Workers	Dermal	Local effects, Long-term exposure	0,028 mg/m3
	Consumers	Dermal	Systemic effects, Short-term exposure	8 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Short-term exposure	1600 mg/m3
	Consumers	Oral	Systemic effects, Short-term exposure	20 mg/kg bw/day
	Consumers	Dermal	Local effects, Short-term exposure	1 mg/cm2
	Consumers	Dermal	Local effects, Short-term exposure	0,25 mg/kg bw/day
	Consumers	Inhalation	Systemic effects, Long-term exposure	0,29 mg/m3
	Consumers	Oral	Systemic effects, Long-term exposure	0,41 mg/kg bw/day
	Consumers	Dermal	Local effects, Long-term exposure	0,43 mg/cm2

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
diethylenetriamine	Fresh water	0,56 mg/l
Remarks:	Assessment Factors	
	Marine water	0,056 mg/l
	Assessment Factors	
	Fresh water sediment	1072 mg/kg
	Equilibrium method	

	Marine sediment	107,2 mg/kg
Equilibrium method		
	Soil	7,97 mg/kg
Equilibrium method, Assessment Factors		
	Freshwater - intermittent	0,32 mg/l
Assessment Factors		
2,4,6-tris(dimethylaminomethyl)phenol	Fresh water	0,084 mg/l
Assessment Factors		
	Marine water	0,0084 mg/l
Assessment Factors		
	Freshwater - intermittent	0,84 mg/l
Assessment Factors		
	Sewage treatment plant	0,2 mg/l
Assessment Factors		
bis(isopropyl)naphthalene	Fresh water	0,26 g/l
Assessment Factors		
	Marine water	0,026 g/l
Assessment Factors		
	Sewage treatment plant	0,15 mg/l
Assessment Factors		
	Fresh water sediment	0,94 mg/kg
Equilibrium method		
	Marine sediment	0,094 mg/kg
Equilibrium method		
	Soil	0,1872 mg/kg
Equilibrium method		
	Secondary Poisoning	25 mg/kg
Assessment Factors		
2-piperazin-1-ylethylamine	Fresh water	0,058 mg/l
Assessment Factors		
	Marine water	0,0058 mg/l
Assessment Factors		
	Freshwater - intermittent	0,58 mg/l
Assessment Factors		
	Fresh water sediment	215 mg/kg

	Equilibrium method	
	Marine sediment	21,5 mg/kg
	Equilibrium method	
	Soil	42,9 mg/kg
	Equilibrium method	
	Sewage treatment plant	250 mg/l
	Assessment Factors	
3,6-diazaoctanethylenediamin	Fresh water	190 g/l
	Assessment Factors	
	Fresh water sediment	95,9 mg/kg
	Equilibrium method	
	Marine water	38 g/l
	Assessment Factors	
	Freshwater - intermittent	200 g/l
	Assessment Factors	
	Marine sediment	19,2 mg/kg
	Equilibrium method	
	Soil	19,1 mg/kg
	Equilibrium method	
	Sewage treatment plant	4,25 mg/l
	Assessment Factors	
	Secondary Poisoning	0,18 mg/kg
	Assessment Factors	

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Material : butyl-rubber

Material : Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Material : Nitrile rubber
Break through time : 10 - 480 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Take note of the

information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	paste
Colour	:	light cream
Odour	:	amine-like
Boiling point	:	> 200 °C
Flash point	:	> 100 °C Method: Pensky-Martens closed cup, closed cup
Vapour pressure	:	0,49 hPa (20 °C)
Density	:	1,4 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	practically insoluble (20 °C)
Decomposition temperature	:	> 200 °C
Viscosity		
Viscosity, dynamic	:	thixotropic

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

10.6 Hazardous decomposition products

Burning produces noxious and toxic fumes.
Nitrogen oxides (NOx)
Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 2.000 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate : 3,12 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 2.000 mg/kg
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Components:

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated**:**
Species: Rabbit
Assessment: Moderate skin irritant
Result: Irritating to skin.

diethylenetriamine**:**
Species: Rabbit
Result: Causes burns.

2-piperazin-1-ylethylamine**:**
Species: Rabbit
Result: Causes burns.

2,4,6-tris(dimethylaminomethyl)phenol**:**
Species: Rabbit

Method: OECD Test Guideline 404
Result: Corrosive after 1 to 4 hours of exposure

bisphenol A**:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

trientine**:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Components:

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated**:**
Species: Rabbit
Assessment: Mild eye irritant
Result: slight irritation

diethylenetriamine**:**
Species: Rabbit
Assessment: Corrosive
Result: Corrosive

2-piperazin-1-ylethylamine**:**
Species: Rabbit
Result: Risk of serious damage to eyes.

2,4,6-tris(dimethylaminomethyl)phenol**:**
Species: Rabbit
Assessment: Corrosive
Result: Irreversible effects on the eye

bisphenol A**:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

trientine**:**
Species: Rabbit
Assessment: Corrosive
Method: OECD Test Guideline 404
Result: Corrosive

Respiratory or skin sensitisation

Components:

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated**:**
Exposure routes: Skin
Species: Guinea pig

Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

naphthalene, bis(1-methylethyl)-:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Diethylenetriamine:
Exposure routes: Skin
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitisation by skin contact.
Remarks: Causes sensitisation.

Exposure routes: Respiratory Tract
Species: Mouse
Result: Does not cause respiratory sensitisation.

Aminoethylpiperazine:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

2,4,6-tris(dimethylaminomethyl)phenol:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Assessment: The product is a skin sensitiser, sub-category 1B.
Result: The product is a skin sensitiser, sub-category 1B.

4,4 -isopropylidenediphenol:
Exposure routes: Skin
Species: Mouse
Method: OECD Test Guideline 429
Result: Does not cause skin sensitisation.

Exposure routes: Skin
Species: Humans
Assessment: May cause sensitisation by skin contact.
Result: Causes sensitisation.

trientine:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

Assessment: No data available

Germ cell mutagenicity

Components:

bis(isopropyl)naphthalene:

Genotoxicity in vitro : Concentration: 92 mg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Concentration: 40 - 60 mg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

2-piperazin-1-ylethylamine:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

: Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

2,4,6-tris(dimethylaminomethyl)phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Concentration: 2500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

bisphenol A:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

trientine:
Genotoxicity in vitro : Concentration: 0 - 200 g/L
Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

Components:

bis(isopropyl)naphthalene:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 1.92 g/kg
Method: OECD Test Guideline 474
Result: negative

diethylenetriamine:
Genotoxicity in vivo : Cell type: Somatic
Application Route: Oral
Dose: 85 - 850 mg/kg
Method: OECD Test Guideline 474
Result: negative

Application Route: Oral
Result: negative

2-piperazin-1-ylethylamine:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 175 - 560 mg/kg
Method: OECD Test Guideline 474
Result: negative

bisphenol A:
Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

trientine:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 0 - 600 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Components:

diethylenetriamine:
Species: Mouse, (male)
Application Route: Dermal
Dose: 56.3 mg/kg

Frequency of Treatment: 3 daily
Result: negative

bisphenol A**:**
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Frequency of Treatment: 7 daily
Result: negative

trientine**:**
Species: Mouse, (male)
Application Route: Dermal
Dose: 42 mg/kg
Frequency of Treatment: 3 daily
Method: OECD Test Guideline 451
Result: negative

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:

diethylenetriamine**:**
Effects on fertility : Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: No observed adverse effect level: 30 mg/kg wet weight
Method: OECD Test Guideline 421

2-piperazin-1-ylethylamine**:**
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Result: No effects on fertility and early embryonic development were detected.

2,4,6-tris(dimethylaminomethyl)phenol**:**
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Remarks: No significant adverse effects were reported

bisphenol A**:**
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
Result: Embryotoxic effects and adverse effects on the offspring were detected.

Components:

bis(isopropyl)naphthalene**:**
Effects on foetal : Species: Rat, female

development

Application Route: Oral
General Toxicity Maternal: Lowest observed adverse effect level: 250 mg/kg body weight
Method: Directive 67/548/EEC, Annex V, B.31.
Result: No teratogenic effects

diethylenetriamine:

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 100 mg/kg body weight
Method: OECD Test Guideline 421

2-piperazin-1-ylethylamine:

Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 224 - 285 mg/kg body weight
Method: OECD Test Guideline 422
Result: No teratogenic effects

bisphenol A:

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects

trientine:

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: > 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rabbit
Application Route: Dermal
General Toxicity Maternal: No observed adverse effect level: 125 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Components:

bisphenol A:
Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposure

Components:

diethylenetriamine:
Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

bisphenol A**:**
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

bis(isopropyl)naphthalene**:**
Species: Rat, male and female
NOAEL: 170 mg/kg
Application Route: Ingestion
Exposure time: 4.320 hNumber of exposures: 7 d
Method: Subchronic toxicity

diethylenetriamine**:**
Species: Rat, male and female
: 70 - 80
Application Route: Ingestion
Test atmosphere: vapour
Exposure time: 360 hNumber of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL: 114
Application Route: Skin contact
Exposure time: 9.600 hNumber of exposures: 6 d
Method: Chronic toxicity

2-piperazin-1-ylethylamine**:**
Species: Rat, male and female
NOAEL: 151 - 285
Application Route: Ingestion
Exposure time: 672 hMethod: Subacute toxicity

Species: Rat, male and female
NOAEL: > 1000
Application Route: Skin contact
Exposure time: 696 hNumber of exposures: 5 d
Method: Subacute toxicity

2,4,6-tris(dimethylaminomethyl)phenol**:**
Species: Rat, male and female
NOEL: 15 mg/kg
Application Route: Ingestion
Exposure time: 1.032 hNumber of exposures: 7 d
Method: Subacute toxicity

bisphenol A**:**
Species: Dog, male and female
: 75 mg/kg, 10
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 2.160 hNumber of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
LOAEL: 600 mg/kg
Application Route: Ingestion
Exposure time: 672 hNumber of exposures: 7 d
Method: Subchronic toxicity

trientine**:**
Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Ingestion
Exposure time: 26 WeeksNumber of exposures: 7 d
Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity
No data available

Experience with human exposure
General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution
No data available

Neurological effects
No data available

Further information

Ingestion: No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Components:

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated**:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (No information available.): > 1.000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

bis(isopropyl)naphthalene**:**

Toxicity to fish : LC50 : > 0,5 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.
Remarks: Aquatic toxicity is unlikely due to low solubility.

Toxicity to daphnia and other aquatic invertebrates : EC50 : > 0,16 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Marine water
Method: OECD Test Guideline 202
Remarks: Aquatic toxicity is unlikely due to low solubility.

EL50 (Daphnia magna (Water flea)): 1,7 mg/l
Exposure time: 48 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae : NOECr (Desmodesmus subspicatus (Scenedesmus subspicatus)): ca. 0,15 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Remarks: Aquatic toxicity is unlikely due to low solubility.

M-Factor (Acute aquatic : 1

toxicity)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,013 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 202

diethylenetriamine**:**

Toxicity to fish	:	LC50 : 430 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 32 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water
Toxicity to algae	:	EbC50 (Selenastrum capricornutum (green algae)): 1.164 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC: 10 mg/l Exposure time: 28 d Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 5,6 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.20
Toxicity to soil dwelling organisms	:	EC50: > 1.000 mg/kg Exposure time: 56 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 222
Ecotoxicology Assessment Acute aquatic toxicity	:	This product has no known ecotoxicological effects.

2-piperazin-1-ylethylamine**:**

Toxicity to fish	:	LC50 : 2.190 mg/l Exposure time: 96 h Test Type: static test

Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 58 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 1.000 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

2,4,6-tris(dimethylaminomethyl)phenol**:**

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 175 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : LC50 : 718 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Marine water

Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 84 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Ecotoxicology Assessment
Chronic aquatic toxicity : This product has no known ecotoxicological effects.

bisphenol A**:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7,5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 : 3,9 - 10,2 mg/l
Exposure time: 48 h

(Ceriodaphnia dubia (Water flea)):

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2,5 - 3,1 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,016 mg/l
Exposure time: 444 d
Species: Pimephales promelas (fathead minnow)
Test Type: flow-through test
Test substance: Fresh water
Method: Fish Life Cycle Toxicity

Remarks: Toxic to aquatic organisms.

Ecotoxicology Assessment
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

trientine**:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: Fish Acute Toxicity Test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31,1 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to bacteria : EC50 (activated sludge): 800 mg/l
Exposure time: 0,5 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 1,9 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Ecotoxicology Assessment
Acute aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Components:

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated**:**

Biodegradability : Result: Not readily biodegradable.

bis(isopropyl)naphthalene**:**

Biodegradability : Inoculum: activated sludge
Concentration: 0,2 mg/l
Result: Not readily biodegradable.
Biodegradation: 30 - 35 %
Exposure time: 56 d
Method: OECD Test Guideline 310

diethylenetriamine**:**

Biodegradability	:	Inoculum: activated sludge Result: Readily biodegradable Biodegradation: 87 % Exposure time: 21 d Method: OECD Test Guideline 301D
Photodegradation	:	Test Type: Air Rate constant: 500000 Degradation (direct photolysis): 50 %

2-piperazin-1-ylethylamine**:**

Biodegradability	:	Inoculum: activated sludge Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 301F
Biochemical Oxygen Demand (BOD)	:	5 mg/l Incubation time: 5 d
Chemical Oxygen Demand (COD)	:	560 mg/l
Photodegradation	:	Test Type: Air Degradation (direct photolysis): 50 % Test Type: Water

2,4,6-tris(dimethylaminomethyl)phenol**:**

Biodegradability	:	Inoculum: activated sludge Concentration: 2 mg/l Result: Not readily biodegradable. Biodegradation: 4 % Exposure time: 28 d Method: OECD Test Guideline 301D

bisphenol A**:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 1 - 2 % Exposure time: 28 d

trientine**:**

Biodegradability	:	Inoculum: activated sludge Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 162 d Method: OECD Test Guideline 301D Inoculum: activated sludge Result: Not readily biodegradable. Biodegradation: 20 % Exposure time: 84 d Method: Inherent Biodegradability: Modified SCAS Test

12.3 Bioaccumulative potential

Components:

bis(isopropyl)naphthalene:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Exposure time: 60 d Bioconcentration factor (BCF): 770 - 6.400 Test substance: Fresh water Method: flow-through test
Partition coefficient: n-octanol/water	:	log Pow: 6,081 Method: QSAR

diethylenetriamine:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Exposure time: 42 d Bioconcentration factor (BCF): 0,3 - 6,3 Test substance: Fresh water Method: flow-through test Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: -1,58 (20 °C) pH: 7

2-piperazin-1-ylethylamine:

Bioaccumulation	:	Species: Fish Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: -1,48 (20 °C)

2,4,6-tris(dimethylaminomethyl)phenol:

Partition coefficient: n-octanol/water	:	log Pow: 0,219 (21,5 °C) Method: OPPTS 830.7550

trientine:

Partition coefficient: n-octanol/water	:	log Pow: -2,65 (20 °C) Method: OECD Test Guideline 117

12.4 Mobility in soil

Components:

bis(isopropyl)naphthalene:

Distribution among environmental compartments	:	Koc: 36108Method: QSAR

diethylenetriamine:

Distribution among environmental compartments	:	Koc: 19111

2-piperazin-1-ylethylamine:

Distribution among environmental compartments	:	Koc: ca. 37000

trientine:
Distribution among environmental compartments : Koc: 1584,9 - 5012Method: OECD Test Guideline 106

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

IATA

14.1 UN number : UN 2735

14.2 UN proper shipping name : Polyamines, liquid, corrosive, n.o.s.
(DIETHYLENE TRIAMINE, DIISOPROPYLNAPHTHALENE)

14.3 Transport hazard class(es) : 8

14.4 Packing group : II

Labels : Corrosive

Packing instruction (cargo aircraft) : 855

Packing instruction (passenger aircraft) : 851

IMDG

14.1 UN number	:	UN 2735
14.2 UN proper shipping name	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE, DIISOPROPYLNAPHTHALENE)
14.3 Transport hazard class(es)	:	8
14.4 Packing group	:	II
Labels	:	8
EmS Code	:	F-A, S-B
14.5 Environmental hazards		
Marine pollutant	:	yes

ADR

14.1 UN number	:	UN 2735
14.2 UN proper shipping name	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE, DIISOPROPYLNAPHTHALENE)
14.3 Transport hazard class(es)	:	8
14.4 Packing group	:	II
Labels	:	8
14.5 Environmental hazards		
Marine pollutant	:	no

RID

14.1 UN number	:	UN 2735
14.2 UN proper shipping name	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE, DIISOPROPYLNAPHTHALENE)
14.3 Transport hazard class(es)	:	8
14.4 Packing group	:	II
Labels	:	8
14.5 Environmental hazards		
Marine pollutant	:	no

Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex IV)	:	Not applicable
MAL-Code-Number	:	5-5

The components of this product are reported in the following inventories:

TSCA	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TSCA (United States of America)

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H311	:	Toxic in contact with skin.
H312	:	Harmful in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H330	:	Fatal if inhaled.
H335	:	May cause respiratory irritation.
H361f	:	Suspected of damaging fertility.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Asp. Tox.	:	Aspiration hazard
Eye Dam.	:	Serious eye damage

Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure

Further information

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, E PRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT E IST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION E CEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.

CONFIDENTIAL

SAFETY DATA SHEET
LARGE SIZE COTTON TAKRAG

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	LARGE SIZE COTTON TAKRAG
PRODUCT NO.	D3052
APPLICATION	IMPREGNATED FABRIC WIPE
SUPPLIER	ORAPI APPLIED LIMITED, SPRING ROAD, SMETHWICK, WEST MIDLANDS, B66 1PT, ENGLAND Tel: 0121-525-4000 Fax: 0121-525-4919 Lee Baughan lee.baughan@orapiapplied.com
EMERGENCY TELEPHONE	0121 525 4000 (09:00 - 17:00 hrs)

2 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

3 COMPOSITION/INFORMATION ON INGREDIENTS

COMPOSITION COMMENTS

The material consists of 50% woven cotton and 50% non-drying resin. The details of the non-drying resin are given above. The highly refined mineral oil contains polycyclic aromatics at levels typically less than 0.01%.

4 FIRST-AID MEASURES

INHALATION

Not relevant.

INGESTION

Not relevant.

SKIN CONTACT

Not required - remove excess from skin after use.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention promptly if symptoms occur after washing.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

SPECIAL FIRE FIGHTING PROCEDURES

No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS

Combustible, but does not burn readily.

SPECIFIC HAZARDS

Fire creates: Carbon dioxide (CO2). Carbon monoxide (CO).

PROTECTIVE MEASURES IN FIRE

Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Avoid heat, flames and other sources of ignition.

ENVIRONMENTAL PRECAUTIONS

Avoid discharge to the aquatic environment.

SPILL CLEAN UP METHODS

Non-hazardous substance. No specific clean-up procedure noted.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

No specific usage precautions noted.

STORAGE PRECAUTIONS

Store at moderate temperatures in dry, well ventilated area.

STORAGE CLASS

Unspecified storage.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT COMMENTS

No exposure limits noted for ingredient(s).

ENGINEERING MEASURES

No particular ventilation requirements.

RESPIRATORY EQUIPMENT

Respiratory protection not required.

HAND PROTECTION

Hand protection not required.

EYE PROTECTION

Not relevant.

HYGIENE MEASURES

Wash at the end of each work shift and before eating, smoking and using the toilet.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Impregnated tacky cotton wipe
COLOUR	Beige.
ODOUR	Mild
FLASH POINT (°C)	Is not flammable.

10 STABILITY AND REACTIVITY

STABILITY

Not relevant.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition.

MATERIALS TO AVOID

No incompatible groups noted.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire creates: Carbon dioxide (CO_2). Carbon monoxide (CO).

11 TOXICOLOGICAL INFORMATION

GENERAL INFORMATION

No specific health warnings noted.

INHALATION

No specific health warnings noted.

INGESTION

No specific health warnings noted.

SKIN CONTACT

Skin irritation is not anticipated when used normally.

EYE CONTACT

May cause temporary eye irritation.

12 ECOLOGICAL INFORMATION

ECOTOXICITY

Not regarded as dangerous for the environment.
Water Hazard Classification = WGK 0.

WATER HAZARD CLASSIFICATION

WGK 0

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

No specific disposal method required.

14 TRANSPORT INFORMATION

ROAD TRANSPORT NOTES	Not Classified
SEA TRANSPORT NOTES	Not Classified.

15 REGULATORY INFORMATION

RISK PHRASES

NC	Not classified.

SAFETY PHRASES

NC	Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information Packaging & Supply) Regulations 2002 (CHIP 3).

STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

APPROVED CODE OF PRACTICE

Safety Data Sheets for Substances and Preparations. Classification and Labelling of Substances and Preparations Dangerous for Supply.

16 OTHER INFORMATION

GENERAL INFORMATION

For further information or advice contact our technical service line during regular office hours on 0121-524-1000.

This safety data sheet has been compiled for the product as supplied, properties and hazards will vary if the product is diluted with water or mixed with any other material.

REVISION COMMENTS

The information contained herein is based on known available data believed to be reliable but does not constitute the users own assessment of the work place risk as required by other Health and Safety Legislation.

REVISION DATE	10-09-2007
SDS NO.	1

SAFETY DATA SHEET STATUS

Approved.

DATE	10-09-2007
SIGNATURE	Health & Safety Officer

HEMPADUR UNIQ 4774N

Protective Clothing	General Hazard	DOT
		

Conforms to ANSI Z400.1-2010 Standard - HCS 2012

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name :	HEMPADUR UNIQ 4774N
Product identity :	4774N20450
Product type :	epoxy primer (base for multi-component product)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Field of application :	metal industry
Ready-for-use mixture :	4774A = 4774N 3 vol. / 9874A 1 vol.
Identified uses :	Industrial/Professional use
TSCA :	**Unless otherwise stated All components are listed or exempted.**

1.3 Details of the supplier of the safety data sheet

Company details :	HEMPEL (USA), Inc. 600 Conroe Park North Drive Conroe, Texas 77303 Toll free: (800) 678-6641, if outside area codes 713, 281, 409, 936 Regular phone number: (936) 523-6000 E-mail Hempel@Hempel.com

1.4 Emergency telephone number (with hours of operation)

For Transportation Emergencies : (24 hours)	CHEMTREC: **1-800-424-9300** (Toll-free in the U.S., Canada and the U.S. Virgin Islands) **703-527-3887** For calls originating elsewhere (Collect calls are accepted). Contract number: CCN10384 To preserve the effectiveness of arrangements for providing accurate and timely emergency response information, the basic identifying information (shipper name or contract number) must be included on shipping papers. If the purchaser of this product is going to be shipping this product to other locations, the purchaser must arrange for its own Emergency Information Provider to respond to transport incidents. Hempel's 24 hour response contract does not cover non-Hempel shipments.
For all other information : (8 AM - 5 PM CST)	In USA toll free calling available: 1-800- 678-6641 or (936)-523-6000 See Section 4 of the safety data sheet (first aid measures).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200).
GHS Classification :	FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms :

Signal word : Warning

Hazard statements :
H226 - Flammable liquid and vapor.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements :

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Do not breathe vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : Get medical attention if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : None known.

2.3 Other hazards

Hazards not otherwise classified : None known.

SECTION 3: Composition/information on ingredients

Product definition : Mixture

Physical state : Liquid.

Product/ingredient name	Identifiers	%	GHS Classification
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	25068-38-6	12.5 - 15	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1
xylene	1330-20-7	10 - 12.5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
middle molecular epoxy resin MMW 700-1200	*25068-38-6	10 - 12.5	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1
n-butanol	71-36-3	1 - 3	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
ethylbenzene	100-41-4	1 - 3	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (ears) - Category 2 ASPIRATION HAZARD - Category 1
Methylstyrenated phenol	68512-30-1	1 - 3	SKIN CORROSION/IRRITATION - Category 2

SECTION 3: Composition/information on ingredients

1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	128554-52-9	0.5 - 1	SKIN SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

General : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek immediate medical attention.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and get medical attention immediately.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Not applicable.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media :	Recommended: alcohol resistant foam, CO_2, powders, water spray. Not to be used: waterjet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products :	Decomposition products may include the following materials: carbon oxides sulfur oxides halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used. Contains epoxy constituents. Avoid all possible skin contact with epoxy and amine containing products, they may cause allergic reactions.
Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.
This product may be applied using several application techniques and methods of handling may be different for each. Application techniques include [but are not limited to] brushing, rolling, and spray application [conventional, HPLV, airless, pleural component or aerosol can]. Avoid the breathing of vapors and, if spraying, do not breath spray mist or aerosols.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Product/ingredient name	Exposure limit values
xylene	**ACGIH TLV (United States, 4/2014).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
n-butanol	**ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours. **NIOSH REL (United States, 10/2013). Absorbed through skin.** CEIL: 150 mg/m³ CEIL: 50 ppm **OSHA PEL (United States, 2/2013).** TWA: 300 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
ethylbenzene	**ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours. **NIOSH REL (United States, 10/2013).** STEL: 545 mg/m³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 435 mg/m³ 10 hours. TWA: 100 ppm 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into work areas by controlling it at its source. Use local and general exhaust ventilation to effectively remove and prevent buildup of mists/vapors/fumes generated from the handling of this product.
Note: Local exhaust ventilation is designed to capture an emitted contaminant at or near its source, before the contaminant has a chance to disperse into the workplace air. General exhaust ventilation, also called dilution ventilation, is different from local exhaust ventilation because instead of capturing emissions at their source and removing them from the air, general exhaust ventilation allows the contaminant to be emitted into the workplace air and then dilutes the concentration of the contaminant to an acceptable level (e.g., to the PEL or below).

SECTION 8: Exposure controls/personal protection

Individual protection measures

General :	Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.
Hygiene measures :	Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
Eye/face protection :	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Hand protection :	Wear chemical-resistant gloves in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances. Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice: Recommended: Silver Shield / 4H gloves, polyvinyl alcohol (PVA), Viton® May be used: nitrile rubber, butyl rubber Not recommended: neoprene rubber, natural rubber (latex), polyvinyl chloride (PVC)
Body protection :	Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product. Wear suitable protective clothing. Always wear protective clothing when spraying.
Respiratory protection :	If working areas have insufficient ventilation, wear half or totally covering mask equipped with gas filter of type Organic Vapor, when grinding use particle filter of type P95, P99 or P100. When spraying use a combined filter (organic vapor / HEPA or organic vapor / P100 type). Be sure to use approved/certified respirator or equivalent. Always wear an air-fed respirator when spraying in a continuous and prolonged work situation (e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter).
Protective clothing (pictograms) :	 Note: Application of paint products by spraying requires additional safety precautions: Full body suit, Full face respirator with air supplied.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Odor :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	Testing not relevant or not possible due to nature of the product.
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 26°C (78.8°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Upper/lower flammability or explosive limits :	0.8 - 11.3 vol %
Vapor pressure :	Testing not relevant or not possible due to nature of the product.

SECTION 9: Physical and chemical properties

Vapor density :	Testing not relevant or not possible due to nature of the product.
Relative density :	1.722 g/cm³
Solubility(ies) :	Partially soluble in the following materials: cold water and hot water.
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Testing not relevant or not possible due to nature of the product.
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Testing not relevant or not possible due to nature of the product.
Explosive properties :	Highly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Oxidizing properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight (Included excempt solvent(s)):	15.7 % (w/w)
Water % by weight :	Weighted average: 0 %
VOC content (Coatings) :	2.25 lbs/gal (269.9 g/l)
VOC content (Regulatory) :	2.25 lbs/gal (269.9 g/l)
TOC Content (Volatile) :	Weighted average: 232 g/l
Solvent Gas :	Weighted average: 0.067 m³/l

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidizing materials.
Reactive or incompatible with the following materials: reducing materials.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides sulfur oxides halogenated compounds metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.
Epoxy and amine containing products can cause skin disorders such as allergic eczema. The allergy may arise after only a short exposure period.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6350 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
n-butanol	LC50 Inhalation Vapor	Rat	24000 mg/m³	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
Methylstyrenated phenol	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-

Acute toxicity estimates

Route	ATE value
Oral	15924 mg/kg
Dermal	9601.4 mg/kg
Inhalation (gases)	37722.2 ppm
Inhalation (vapors)	84.65 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 microliters
xylene	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
n-butanol	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams
ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams
	Respiratory - Mild irritant	Rabbit	-	-
	Eyes - Mild irritant	Rabbit	-	-
Methylstyrenated phenol	Eyes - Mild irritant	Rabbit	-	-

Carcinogen Classification

Product/ingredient name	IARC	NTP	OSHA
xylene	3	-	-
ethylbenzene	2B	-	-

Specific target organ toxicity (single exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
n-butanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	Not determined	ears

Aspiration hazard

Product/ingredient name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains bisphenol A-(epichlorhydrin) epoxy resin MW =< 700, middle molecular epoxy resin MMW 700-1200, Methylstyrenated phenol, 1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene. May produce an allergic reaction.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Harmful to aquatic life with long lasting effects.

When spilled, this product may act as an oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of a body of water. Oils of any kind can cause: (a) drowning of waterfowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility; (b) lethal effect on fish by coating gill surfaces, preventing respiration; (c) potential fish kills resulting from alteration in biochemical oxygen demand; (d) asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom; and (e) adverse aesthetic effects of fouled shoreline and beaches.

Product/ingredient name	Result	Species	Exposure
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	Acute EC50 >11 mg/l	Algae	72 hours
	Acute EC50 1.4 - 1.7 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 3.1 mg/l	Fish - fathead minnow (Pimephales promelas)	96 hours
n-butanol	Acute EC50 1328 mg/l	Daphnia	96 hours
	Acute LC50 1.376 mg/l	Fish	96 hours
ethylbenzene	Chronic NOEC <1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
Methylstyrenated phenol	Acute EC50 15 mg/l	Algae	72 hours
	Acute EC50 14 - 51 mg/l	Daphnia	48 hours
	Acute EC50 25.8 mg/l	Fish	96 hours
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	LC50 >100 mg/l	Fish	96 hours

12.2 Persistence and degradability

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	12 % - Not readily - 28 days	-	-
xylene	-	>60 % - Readily - 28 days	-	-
n-butanol	OECD 301D Ready Biodegradability - Closed Bottle Test	92 % - 20 days	-	-
ethylbenzene	-	>70 % - Readily - 28 days	-	-
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	-	5 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	-	12%; 28 day(s)	Not readily
xylene	-	-	Readily
n-butanol	-	-	Readily
ethylbenzene	-	-	Readily
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	2.64 - 3.78	31	low
xylene	3.12	8.1 - 25.9	low
middle molecular epoxy resin MMW 700-1200	2.64 - 3.78	31	low
n-butanol	1	3.16	low
ethylbenzene	3.6	-	low
Methylstyrenated phenol	3.627	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : No known data avaliable in our database.

Mobility : No known data avaliable in our database.

12.5 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.
The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
Refer to Section 7 and Section 8 for additional handling information and protection of employees.

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled

SECTION 13: Disposal considerations

material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
1-Butanol (I); n-Butyl alcohol (I) Xylene	71-36-3 1330-20-7	Listed Listed	U031 U239

SECTION 14: Transport information

Transport may take place according to national regulation or DOT for transport by road and by train, IMDG for transport by sea, IATA for Air shipment. Refer to specific Dangerous Goods Transport requirements under 49CFR, ICAO and IATA.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
DOT Code	UN1263	PAINT. (bisphenol A-(epichlorhydrin) epoxy resin MW =< 700)	3 - 	III	Yes.	**ERG : 128** The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes. **Reportable quantity** (xylene, ethylbenzene) 936.37 lbs / 425.11 kg [65.216 gal / 246.87 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
TDG Code	UN1263	PAINT. (bisphenol A-(epichlorhydrin) epoxy resin MW =< 700)	3 - 	III	Yes.	The marine pollutant mark is not required when transported by road or rail.
SCT Code	UN1263	PAINT	3 - 	III	No.	-
IMDG Code	UN1263	PAINT. (bisphenol A-(epichlorhydrin) epoxy resin MW =< 700)	3 - 	III	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-E, S-E
IATA Code	UN1263	PAINT	3 - 	III	No.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Code : Classification
PG* : Packing group
Env.* : Environmental hazards

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : All components are listed or exempted.

TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: phenol; ethylbenzene

Clean Water Act (CWA) 311: epichlorohydrin; phenol; ethylbenzene; xylene

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304 - SARA 311/312:

SARA 302/304: chlorine; epichlorohydrin; phenol
SARA 311/312 Hazards identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Product/ingredient name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	10 - 25	No.	No.	No.	Yes.	No.
xylene	10 - 25	Yes.	No.	No.	Yes.	No.
middle molecular epoxy resin MMW 700-1200	10 - 25	No.	No.	No.	Yes.	No.
n-butanol	1 - 3	Yes.	No.	No.	Yes.	No.
ethylbenzene	1 - 3	Yes.	No.	No.	Yes.	Yes.
Methylstyrenated phenol	1 - 3	No.	No.	No.	Yes.	No.
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	0.5 - 1	No.	No.	No.	Yes.	No.

SARA 313 : SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

Form R - Reporting requirements :

Product/ingredient name	CAS number	Concentration
xylene	1330-20-7	10 - 20
n-butanol	71-36-3	1 - 3
ethylbenzene	100-41-4	1 - 3

Supplier notification :

Product/ingredient name	CAS number	Concentration
xylene	1330-20-7	10 - 20
middle molecular epoxy resin MMW 700-1200	*25068-38-6	10 - 20
n-butanol	71-36-3	1 - 3
ethylbenzene	100-41-4	1 - 3

State regulations :

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: BARIUM SULFATE; TITANIUM DIOXIDE; N-BUTYL ALCOHOL; ETHYL BENZENE; XYLENE
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: BARIUM SULFATE; SULFURIC ACID, BARIUM SALT (1:1); TITANIUM DIOXIDE; TITANIUM OXIDE (TiO2); n-BUTYL ALCOHOL; 1-BUTANOL; ETHYL BENZENE; BENZENE, ETHYL-; XYLENES; BENZENE, DIMETHYL-
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Butyl alcohol; 1-Butanol; Ethylbenzene; Xylene (mixed)

SECTION 15: Regulatory information

New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: BARIUM SULFATE; TITANIUM OXIDE (TIO2); 1-BUTANOL; BENZENE, ETHYL-; BENZENE, DIMETHYL-
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65 PFF :

WARNING: This product contains a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Product/ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
titanium dioxide	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
respirable quartz	Yes.	No.	No.	No.
2-phenylpropene	Yes.	Yes.	No.	No.
methanol	No.	Yes.	No.	23000 µg/day (ingestion) 47000 µg/day (inhalation)
epichlorohydrin	Yes.	Yes.	Yes.	No.

SECTION 16: Other information

Remarks : Note: In USA, consult Code of Federal Regulations, Title 29, Labor, Parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable Federal, State or local regulations that apply to safe practices in coating operations.
Warning! If you scrape, sand, or remove old paint, you may release lead dust. LEAD is TOXIC.

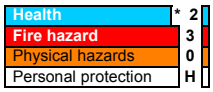
Validation : Validated by Company on 3/10/2015.

GHS Classification

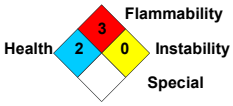
Procedure used to derive the classification.

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

Hazardous Material Information System (U.S.A.)



National Fire Protection Association (U.S.A.)



Personal Protective Equipment (PPE) shown in this section is a suggestion. Since conditions vary from one work location to another consult the facility safety & health program. Customer or end user is responsible to evaluate worker exposure conditions at the site of application and determine the appropriate PPE suitable for workers at that particular facility or location.

Abbreviations and acronyms :

ANSI = American National Standards Institute
HCS = Hazardous Communication System
TSCA = Toxic Substances Control Act
CFR = Code of federal Regulations
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
OSHA = United States Occupational Health and Safety Administration
NIOSH = National Institute for Occupational Safety and Health
ACGIH = American Conference of Industrial Hygienists
IARC = International Agency for Research on Cancer.
NTP = National Toxicology Program
ATE = Acute Toxicity Estimate

OECD = Organisation for Economic Co-operation and Development
BCF = Bioconcentration Factor
DOT = United States Department of Transportation
ERG = Emergency Response Guide
TDG = Transport of Dangerous Goods, Canada
SCT = Transportation & Communications Ministry, Mexico
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association
SARA = Superfund Amendments Reauthorization Act
EPCRA = Emergency Planning and Community Right to Know Act

Notice to reader

Indicates information that has changed from previously issued version.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

HEMPATHANE HS 5561P

Protective Clothing	General Hazard	DOT
		

Conforms to ANSI Z400.1-2010 Standard - HCS 2012

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name :	HEMPATHANE HS 5561P
Product identity :	5561P11150
Product type :	polyurethane topcoat (base for multi-component product)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Field of application :	metal industry
Ready-for-use mixture :	5561B = 5561P 7 vol. / 97050 1 vol.
Identified uses :	Industrial/Professional use
TSCA :	**Unless otherwise stated All components are listed or exempted.**

1.3 Details of the supplier of the safety data sheet

Company details :	HEMPEL (USA), Inc. 600 Conroe Park North Drive Conroe, Texas 77303 Toll free: (800) 678-6641, if outside area codes 713, 281, 409, 936 Regular phone number: (936) 523-6000 E-mail Hempel@Hempel.com

1.4 Emergency telephone number (with hours of operation)

For Transportation Emergencies : (24 hours)	CHEMTREC: **1-800-424-9300** (Toll-free in the U.S., Canada and the U.S. Virgin Islands) **703-527-3887** For calls originating elsewhere (Collect calls are accepted). Contract number: CCN10384 To preserve the effectiveness of arrangements for providing accurate and timely emergency response information, the basic identifying information (shipper name or contract number) must be included on shipping papers. If the purchaser of this product is going to be shipping this product to other locations, the purchaser must arrange for its own Emergency Information Provider to respond to transport incidents. Hempel's 24 hour response contract does not cover non-Hempel shipments.
For all other information : (8 AM - 5 PM CST)	In USA toll free calling available: 1-800- 678-6641 or (936)-523-6000 See Section 4 of the safety data sheet (first aid measures).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200).
GHS Classification :	FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms :

Signal word : Warning

Hazard statements :
H226 - Flammable liquid and vapor.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.

Precautionary statements :

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : None known.

2.3 Other hazards

Hazards not otherwise classified : None known.

SECTION 3: Composition/information on ingredients

Product definition : Mixture

Physical state : Liquid.

Product/ingredient name	Identifiers	%	GHS Classification
solvent naphtha (petroleum), light arom.	64742-95-6	12.5 - 15	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1
n-butyl acetate	123-86-4	5 - 10	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
xylene	1330-20-7	3 - 5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
1,2,4-trimethylbenzene	95-63-6	3 - 5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	128554-52-9	0.5 - 1	SKIN SENSITIZATION - Category 1

SECTION 3: Composition/information on ingredients

bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	41556-26-7	0.3 - 0.5	SKIN SENSITIZATION - Category 1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

General : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and get medical attention immediately.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Not applicable.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media :	Recommended: alcohol resistant foam, CO_2, powders, water spray. Not to be used: waterjet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products :	Decomposition products may include the following materials: carbon oxides sulfur oxides metal oxide/ oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used.
Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.
This product may be applied using several application techniques and methods of handling may be different for each. Application techniques include [but are not limited to] brushing, rolling, and spray application [conventional, HPLV, airless, pleural component or aerosol can]. Avoid the breathing of vapors and, if spraying, do not breath spray mist or aerosols.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Product/ingredient name	Exposure limit values
solvent naphtha (petroleum), light arom.	**ACGIH TLV (United States).** TWA Tentative: 25 ppm 8 hours.
n-butyl acetate	**ACGIH TLV (United States, 4/2014).** STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours. **NIOSH REL (United States, 10/2013).** STEL: 950 mg/m³ 15 minutes. STEL: 200 ppm 15 minutes. TWA: 710 mg/m³ 10 hours. TWA: 150 ppm 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 710 mg/m³ 8 hours. TWA: 150 ppm 8 hours.
xylene	**ACGIH TLV (United States, 4/2014).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
1,2,4-trimethylbenzene	**ACGIH TLV (United States, 4/2014).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 125 mg/m³ 10 hours. TWA: 25 ppm 10 hours.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into work areas by controlling it at its source. Use local and general exhaust ventilation to effectively remove and prevent buildup of mists/vapors/fumes generated from the handling of this product.
Note: Local exhaust ventilation is designed to capture an emitted contaminant at or near its source, before the contaminant has a chance to disperse into the workplace air. General exhaust ventilation, also called dilution ventilation, is different from local exhaust ventilation because instead of capturing emissions at their source and removing them from the air, general exhaust ventilation allows the contaminant to be emitted into the workplace air and then dilutes the concentration of the contaminant to an acceptable level (e.g., to the PEL or below).

Individual protection measures

SECTION 8: Exposure controls/personal protection

General :	Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.
Hygiene measures :	Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
Eye/face protection :	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Hand protection :	Wear chemical-resistant gloves in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances. Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice: Recommended: Silver Shield / 4H gloves, polyvinyl alcohol (PVA), Viton® May be used: nitrile rubber Not recommended: neoprene rubber, butyl rubber, natural rubber (latex), polyvinyl chloride (PVC)
Body protection :	Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product. Wear suitable protective clothing. Always wear protective clothing when spraying.
Respiratory protection :	If working areas have insufficient ventilation, wear half or totally covering mask equipped with gas filter of type Organic Vapor, when grinding use particle filter of type P95, P99 or P100. When spraying use a combined filter (organic vapor / HEPA or organic vapor / P100 type). Be sure to use approved/certified respirator or equivalent. Always wear an air-fed respirator when spraying in a continuous and prolonged work situation (e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter).
Protective clothing (pictograms) :	 Note: Application of paint products by spraying requires additional safety precautions: Full body suit, Full face respirator with air supplied.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Odor :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	Testing not relevant or not possible due to nature of the product.
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 35°C (95°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Flammable in the presence of the following materials or conditions: oxidizing materials. Slightly flammable in the presence of the following materials or conditions: reducing materials.
Upper/lower flammability or explosive limits :	0.8 - 7.6 vol %
Vapor pressure :	Testing not relevant or not possible due to nature of the product.

SECTION 9: Physical and chemical properties

Vapor density :	Testing not relevant or not possible due to nature of the product.
Relative density :	1.407 g/cm³
Solubility(ies) :	Insoluble in the following materials: cold water and hot water.
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Testing not relevant or not possible due to nature of the product.
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Testing not relevant or not possible due to nature of the product.
Explosive properties :	Slightly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge.
Oxidizing properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight (Included excempt solvent(s)):	28.4 % (w/w)
Water % by weight :	Weighted average: 0 %
VOC content (Coatings) :	3.34 lbs/gal (400 g/l)
VOC content (Regulatory) :	3.34 lbs/gal (400 g/l)
TOC Content (Volatile) :	Weighted average: 319 g/l
Solvent Gas :	Weighted average: 0.084 m³/l

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidizing materials.
Reactive or incompatible with the following materials: acids.
Slightly reactive or incompatible with the following materials: reducing materials.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides sulfur oxides metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
solvent naphtha (petroleum), light arom.	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	3592 mg/kg	-
n-butyl acetate	LC50 Inhalation Vapor	Rat	>21 mg/l	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6350 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
	LD50 Oral	Rat	5 g/kg	-
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-

Acute toxicity estimates

Route	ATE value
Oral	19480.2 mg/kg
Dermal	28875.3 mg/kg
Inhalation (gases)	68053 ppm
Inhalation (vapors)	58.75 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 microliters
	Respiratory - Mild irritant	Rabbit	-	-
n-butyl acetate	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
	Eyes - Mild irritant	Rabbit	-	-
	Respiratory - Mild irritant	Rabbit	-	-
xylene	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	skin	Guinea pig	Sensitizing

Carcinogen Classification

Product/ingredient name	IARC	NTP	OSHA
xylene	3	-	-

Specific target organ toxicity (single exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
solvent naphtha (petroleum), light arom.	Category 3	Not applicable.	Respiratory tract irritation
n-butyl acetate	Category 3	Not applicable.	Narcotic effects
1,2,4-trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation

Aspiration hazard

Product/ingredient name	Result
solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains 1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene, bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate. May produce an allergic reaction.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Harmful to aquatic life with long lasting effects.

When spilled, this product may act as an oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of a body of water. Oils of any kind can cause: (a) drowning of waterfowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility; (b) lethal effect on fish by coating gill surfaces, preventing respiration; (c) potential fish kills resulting from alteration in biochemical oxygen demand; (d) asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom; and (e) adverse aesthetic effects of fouled shoreline and beaches.

Product/ingredient name	Result	Species	Exposure
solvent naphtha (petroleum), light arom.	Acute EC50 2.6 mg/l	Algae - Pseudokirchneriella subcapitata (green algae)	96 hours
	Acute EC50 6.14 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.22 mg/l	Fish - Oncorhynchus mykiss (rainbow trout)	96 hours
n-butyl acetate	Acute EC50 44 mg/l	Daphnia	48 hours
1,2,4-trimethylbenzene	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pectinicrus - Adult	48 hours
	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	96 hours
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	LC50 >100 mg/l	Fish	96 hours
bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Acute EC50 1.68 mg/l	Aquatic plants	72 hours
	Acute LC50 0.97 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
solvent naphtha (petroleum), light arom.	-	>70 % - Readily - 28 days	-	-
n-butyl acetate	-	90 % - Readily - 28 days	-	-
xylene	-	>60 % - Readily - 28 days	-	-
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	-	5 % - 28 days	-	-

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
solvent naphtha (petroleum), light arom.	-	-	Readily
n-butyl acetate	-	-	Readily
xylene	-	-	Readily
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
solvent naphtha (petroleum), light arom.	-	10 - 2500	high
n-butyl acetate	2.3	-	low
xylene	3.12	8.1 - 25.9	low
1,2,4-trimethylbenzene	3.63	243	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : No known data avaliable in our database.

Mobility : No known data avaliable in our database.

12.5 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.
The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
Refer to Section 7 and Section 8 for additional handling information and protection of employees.

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239

SECTION 14: Transport information

Transport may take place according to national regulation or DOT for transport by road and by train, IMDG for transport by sea, IATA for Air shipment. Refer to specific Dangerous Goods Transport requirements under 49CFR, ICAO and IATA.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
DOT Code	UN1263	PAINT	3 - 	III	No.	**ERG : 128** **Reportable quantity** (xylene) 2623.6 lbs / 1191.1 kg [223.63 gal / 846.55 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
TDG Code	UN1263	PAINT	3 - 	III	No.	-
SCT Code	UN1263	PAINT	3 - 	III	No.	-
IMDG Code	UN1263	PAINT	3 - 	III	No.	**Emergency schedules (EmS)** F-E, S-E
IATA Code	UN1263	PAINT	3 - 	III	No.	-

Code : Classification
PG* : Packing group
Env.* : Environmental hazards

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : All components are listed or exempted.

TSCA 8(a) PAIR: n-butyl methacrylate
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: ethylbenzene

Clean Water Act (CWA) 311: xylene; ethylbenzene; methyl methacrylate; styrene; n-butyl acetate; formaldehyde

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SECTION 15: Regulatory information

SARA 302/304 - SARA 311/312:

SARA 302/304: formaldehyde
SARA 311/312 Hazards identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Product/ingredient name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
solvent naphtha (petroleum), light arom.	10 - 25	Yes.	No.	No.	Yes.	No.
n-butyl acetate	5 - 10	Yes.	No.	No.	Yes.	No.
xylene	3 - 5	Yes.	No.	No.	Yes.	No.
1,2,4-trimethylbenzene	3 - 5	Yes.	No.	No.	Yes.	No.
1,3-bis(12-hydroxyocta-decanamide-N-methyle)benzene	0.5 - 1	No.	No.	No.	Yes.	No.
bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	0.1 - 0.5	No.	No.	No.	Yes.	No.

SARA 313 :

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

Form R - Reporting requirements :

Product/ingredient name	CAS number	Concentration
xylene	1330-20-7	3 - 5
1,2,4-trimethylbenzene	95-63-6	3 - 5
ethylbenzene	100-41-4	0 - 1

Supplier notification :

Product/ingredient name	CAS number	Concentration
xylene	1330-20-7	3 - 5
1,2,4-trimethylbenzene	95-63-6	3 - 5
ethylbenzene	100-41-4	0 - 1

State regulations :

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: XYLENE; BUTYL ACETATE; TRIMETHYL BENZENE; PSEUDOCUMENE; CALCIUM CARBONATE; BARIUM SULFATE; TITANIUM DIOXIDE
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: XYLENES; BENZENE, DIMETHYL-; n-BUTYL ACETATE; ACETIC ACID, BUTYL ESTER; TRIMETHYL BENZENE (mixed isomers); BENZENE, TRIMETHYL-; CUMENE; BENZENE, (1-METHYLETHYL)-; PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; CALCIUM CARBONATE; LIMESTONE; BARIUM SULFATE; SULFURIC ACID, BARIUM SALT (1:1); TITANIUM DIOXIDE; TITANIUM OXIDE (TiO2)
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Xylene (mixed); Butyl acetate; Cumene; Benzene, 1-methylethyl-
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: BENZENE, DIMETHYL-; ACETIC ACID, BUTYL ESTER; BENZENE, TRIMETHYL-; BENZENE, (1-METHYLETHYL)-; PSEUDOCUMENE; LIMESTONE; BARIUM SULFATE; TITANIUM OXIDE (TIO2)
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65 PFF :

WARNING: This product contains a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

SECTION 15: Regulatory information

Product/ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
titanium dioxide	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
respirable quartz	Yes.	No.	No.	No.
1-ethyl-2-methylbenzene	No.	Yes.	No.	No.
Cumen	Yes.	No.	No.	No.
carbonblack	Yes.	No.	No.	No.
formaldehyde	Yes.	No.	Yes.	No.

SECTION 16: Other information

Remarks : Note: In USA, consult Code of Federal Regulations, Title 29, Labor, Parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable Federal, State or local regulations that apply to safe practices in coating operations.
Warning! If you scrape, sand, or remove old paint, you may release lead dust. LEAD is TOXIC.

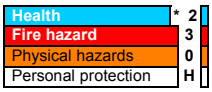
Validation : Validated by Company on 3/10/2015.

GHS Classification

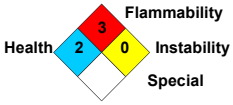
Procedure used to derive the classification.

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method

Hazardous Material Information System (U.S.A.)



National Fire Protection Association (U.S.A.)



Personal Protective Equipment (PPE) shown in this section is a suggestion. Since conditions vary from one work location to another consult the facility safety & health program. Customer or end user is responsible to evaluate worker exposure conditions at the site of application and determine the appropriate PPE suitable for workers at that particular facility or location.

Abbreviations and acronyms :

ANSI = American National Standards Institute
HCS = Hazardous Communication System
TSCA = Toxic Substances Control Act
CFR = Code of federal Regulations
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
OSHA = United States Occupational Health and Safety Administration
NIOSH = National Institute for Occupational Safety and Health
ACGIH = American Conference of Industrial Hygienists
IARC = International Agency for Research on Cancer.
NTP = National Toxicology Program
ATE = Acute Toxicity Estimate

OECD = Organisation for Economic Co-operation and Development
BCF = Bioconcentration Factor
DOT = United States Department of Transportation
ERG = Emergency Response Guide
TDG = Transport of Dangerous Goods, Canada
SCT = Transportation & Communications Ministry, Mexico
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association
SARA = Superfund Amendments Reauthorization Act
EPCRA = Emergency Planning and Community Right to Know Act

Notice to reader

Indicates information that has changed from previously issued version.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

HEMPEL'S ZINC PRIMER 16490

Protective Clothing	General Hazard	DOT
		

Conforms to ANSI Z400.1-2010 Standard - HCS 2012

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : HEMPEL'S ZINC PRIMER 16490

Product identity : 1649019840

Product type : zinc phenoxy primer

1.2 Relevant identified uses of the substance or mixture and uses advised against

Field of application : metal industry, ships and shipyards.

Identified uses : Industrial/Professional use

TSCA : **Unless otherwise stated All components are listed or exempted.**

1.3 Details of the supplier of the safety data sheet

Company details :

HEMPEL (USA), Inc.
600 Conroe Park North Drive
Conroe, Texas 77303
Toll free: (800) 678-6641,
if outside area codes 713, 281, 409, 936
Regular phone number: (936) 523-6000
E-mail Hempel@Hempel.com

1.4 Emergency telephone number (with hours of operation)

For Transportation Emergencies : (24 hours)

CHEMTREC: **1-800-424-9300** (Toll-free in the U.S., Canada and the U.S. Virgin Islands) **703-527-3887**
For calls originating elsewhere (Collect calls are accepted). Contract number: CCN10384
To preserve the effectiveness of arrangements for providing accurate and timely emergency response information, the basic identifying information (shipper name or contract number) must be included on shipping papers.
If the purchaser of this product is going to be shipping this product to other locations, the purchaser must arrange for its own Emergency Information Provider to respond to transport incidents. Hempel's 24 hour response contract does not cover non-Hempel shipments.

For all other information : (8 AM - 5 PM CST)

In USA toll free calling available: 1-800- 678-6641 or (936)-523-6000
See Section 4 of the safety data sheet (first aid measures).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200).

GHS Classification :

FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms :

Signal word : Danger

Hazard statements :
H225 - Highly flammable liquid and vapor.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements :

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Do not breathe vapor. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : None known.

2.3 Other hazards

Hazards not otherwise classified : None known.

SECTION 3: Composition/information on ingredients

Product definition : Mixture

Physical state : Liquid.

Product/ingredient name	Identifiers	%	GHS Classification
xylene	1330-20-7	12.5 - 15	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
butanone	78-93-3	10 - 12.5	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ethylbenzene	100-41-4	1 - 3	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (ears) - Category 2 ASPIRATION HAZARD - Category 1
isopropanol	67-63-0	1 - 3	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

General :	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).
Eye contact :	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention.
Inhalation :	Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and get medical attention immediately.
Skin contact :	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion :	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.
Protection of first-aiders :	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact :	Causes serious eye irritation.
Inhalation :	No known significant effects or critical hazards.
Skin contact :	Causes skin irritation.
Ingestion :	Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact :	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation :	No specific data.
Skin contact :	Adverse symptoms may include the following: irritation redness
Ingestion :	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician :	Not applicable.
Specific treatments :	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media :	Recommended: Approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone. NOT TO BE USED: WATER. Risk of formation of very flammable and explosive vapours.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture :	Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products :	Decomposition products may include the following materials: carbon oxides metal oxide/oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Do not use water. Violent reaction may occur. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used. Open with care, danger of overpressure.
Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations for flammable liquids. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids as well as of amines, alcohols and water. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 7: Handling and storage

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.
This product may be applied using several application techniques and methods of handling may be different for each. Application techniques include [but are not limited to] brushing, rolling, and spray application [conventional, HPLV, airless, pleural component or aerosol can]. Avoid the breathing of vapors and, if spraying, do not breath spray mist or aerosols.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Product/ingredient name	Exposure limit values
xylene	**ACGIH TLV (United States, 4/2014).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
butanone	**ACGIH TLV (United States, 4/2014).** STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours. **NIOSH REL (United States, 10/2013).** STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 10 hours. TWA: 200 ppm 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
ethylbenzene	**ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours. **NIOSH REL (United States, 10/2013).** STEL: 545 mg/m³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 435 mg/m³ 10 hours. TWA: 100 ppm 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
isopropanol	**ACGIH TLV (United States, 6/2013).** STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours. **NIOSH REL (United States, 4/2013).** STEL: 1225 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 980 mg/m³ 10 hours. TWA: 400 ppm 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 980 mg/m³ 8 hours. TWA: 400 ppm 8 hours.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

SECTION 8: Exposure controls/personal protection

Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into work areas by controlling it at its source. Use local and general exhaust ventilation to effectively remove and prevent buildup of mists/vapors/fumes generated from the handling of this product.
Note: Local exhaust ventilation is designed to capture an emitted contaminant at or near its source, before the contaminant has a chance to disperse into the workplace air. General exhaust ventilation, also called dilution ventilation, is different from local exhaust ventilation because instead of capturing emissions at their source and removing them from the air, general exhaust ventilation allows the contaminant to be emitted into the workplace air and then dilutes the concentration of the contaminant to an acceptable level (e.g., to the PEL or below).

Individual protection measures

General :	Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.
Hygiene measures :	Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
Eye/face protection :	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Hand protection :	Wear chemical-resistant gloves in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances. Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice: May be used: nitrile rubber, butyl rubber Not recommended: neoprene rubber, polyvinyl chloride (PVC), natural rubber (latex) Recommended: Silver Shield / 4H gloves, Viton®, polyvinyl alcohol (PVA)
Body protection :	Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product. Wear suitable protective clothing. Always wear protective clothing when spraying.
Respiratory protection :	If working areas have insufficient ventilation, wear half or totally covering mask equipped with gas filter of type Organic Vapor, when grinding use particle filter of type P95, P99 or P100. When spraying use a combined filter (organic vapor / HEPA or organic vapor / P100 type). Be sure to use approved/certified respirator or equivalent. Always wear an air-fed respirator when spraying in a continuous and prolonged work situation (e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter). **This product contains low-boiling point liquids. Any respiratory protective equipment should be air-fed.**
Protective clothing (pictograms) :	 Note: Application of paint products by spraying requires additional safety precautions: Full body suit, Full face respirator with air supplied.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Odor :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	419.85°C This is based on data for the following ingredient: Zinc
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 7°C (44.6°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Highly flammable in the presence of the following materials or conditions: heat and oxidizing materials.
Upper/lower flammability or explosive limits :	0.8 - 12 vol %
Vapor pressure :	Testing not relevant or not possible due to nature of the product.
Vapor density :	Testing not relevant or not possible due to nature of the product.
Relative density :	1.684 g/cm³
Solubility(ies) :	Easily soluble in the following materials: cold water and hot water.
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Testing not relevant or not possible due to nature of the product.
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Testing not relevant or not possible due to nature of the product.
Explosive properties :	Highly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Slightly explosive in the presence of the following materials or conditions: moisture.
Oxidizing properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight (Included exempt solvent(s)):	34.1 % (w/w)
Water % by weight :	Weighted average: 0 %
VOC content (Coatings) :	4.79 lbs/gal (573.9 g/l)
VOC content (Regulatory) :	4.79 lbs/gal (573.9 g/l)
TOC Content (Volatile) :	Weighted average: 435 g/l
Solvent Gas :	Weighted average: 0.153 m³/l

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

SECTION 10: Stability and reactivity

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidizing materials and acids.
Reactive or incompatible with the following materials: reducing materials, organic materials, alkalis and moisture.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6350 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
isopropanol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Intraperitoneal	Rabbit	667 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	LDLo Oral	Human	3570 mg/kg	-

Acute toxicity estimates

Route	ATE value
Oral	33149.5 mg/kg
Dermal	11950.5 mg/kg
Inhalation (gases)	43669.3 ppm
Inhalation (vapors)	97.99 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
xylene	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
butanone	Skin - Mild irritant	Rabbit	-	24 hours 402 milligrams
ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams
	Respiratory - Mild irritant	Rabbit	-	-
	Eyes - Mild irritant	Rabbit	-	-
isopropanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams
	Skin - Mild irritant	Rabbit	-	500 milligrams

Carcinogen Classification

Product/ingredient name	IARC	NTP	OSHA
xylene	3	-	-
ethylbenzene	2B	-	-
isopropanol	3	-	-

SECTION 11: Toxicological information

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
butanone	Category 3	Not applicable.	Narcotic effects
isopropanol	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	Not determined	ears

Aspiration hazard

Product/ingredient name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Very toxic to aquatic life with long lasting effects.

When spilled, this product may act as an oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of a body of water. Oils of any kind can cause: (a) drowning of waterfowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility; (b) lethal effect on fish by coating gill surfaces, preventing respiration; (c) potential fish kills resulting from alteration in biochemical oxygen demand; (d) asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom; and (e) adverse aesthetic effects of fouled shoreline and beaches.

Product/ingredient name	Result	Species	Exposure
ethylbenzene	Chronic NOEC <1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
xylene	-	>60 % - Readily - 28 days	-	-
butanone	-	98 % - Readily - 28 days	-	-
ethylbenzene	-	>70 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
butanone	-	-	Readily
ethylbenzene	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
xylene	3.12	8.1 - 25.9	low
butanone	0.3	<100	low
ethylbenzene	3.6	-	low
isopropanol	0.05	-	low

12.4 Mobility in soil

SECTION 12: Ecological information

Soil/water partition coefficient (K_{OC}) : No known data avaliable in our database.

Mobility : No known data avaliable in our database.

12.5 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.
The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
Refer to Section 7 and Section 8 for additional handling information and protection of employees.

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239
Methyl ethyl ketone (MEK) (I,T); 2-Butanone (I,T)	78-93-3	Listed	U159

SECTION 14: Transport information

Transport may take place according to national regulation or DOT for transport by road and by train, IMDG for transport by sea, IATA for Air shipment. Refer to specific Dangerous Goods Transport requirements under 49CFR, ICAO and IATA.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
DOT Code	UN1263	PAINT. (Zinc)	3 - 	II	Yes.	**ERG : 128** The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes. **Reportable quantity** (xylene, Zinc) 763.35 lbs / 346.56 kg [54.365 gal / 205.8 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
TDG Code	UN1263	PAINT. (Zinc)	3 - 	II	Yes.	The marine pollutant mark is not required when transported by road or rail.

SECTION 14: Transport information

SCT Code	UN1263	PAINT	3 -		II	No.	-
IMDG Code	UN1263	PAINT. (Zinc)	3 -		II	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-E, S-E
IATA Code	UN1263	PAINT	3 -		II	No.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Code : Classification
PG* : Packing group
Env.* : Environmental hazards

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : All components are listed or exempted.

TSCA 8(a) PAIR: 2-methoxy-1-methylethyl acetate
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: Zinc; zinc powder - zinc dust (stabilized); zinc oxide; ethylbenzene; dibenzyl phthalate; butylbenzylphthalate

Clean Water Act (CWA) 311: xylene; ethylbenzene; epichlorohydrin

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 302/304 - SARA 311/312:

SARA 302/304: epichlorohydrin
SARA 311/312 Hazards identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Product/ingredient name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
xylene	10 - 25	Yes.	No.	No.	Yes.	No.
butanone	10 - 25	Yes.	No.	No.	Yes.	No.
ethylbenzene	1 - 3	Yes.	No.	No.	Yes.	Yes.
isopropanol	1 - 3	Yes.	No.	No.	Yes.	No.

SARA 313 :

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

SECTION 15: Regulatory information

Form R - Reporting requirements :

Product/ingredient name	CAS number	Concentration
Zinc	Sec. (7440-66-6)	20 - 50
zinc powder - zinc dust (stabilized)	7440-66-6	20 - 50
xylene	1330-20-7	10 - 20
butanone	78-93-3	10 - 20
ethylbenzene	100-41-4	1 - 3
zinc oxide	1314-13-2	1 - 3
isopropanol	67-63-0	1 - 3

Supplier notification :

Product/ingredient name	CAS number	Concentration
zinc powder - zinc dust (stabilized)	7440-66-6	20 - 50
xylene	1330-20-7	10 - 20
butanone	78-93-3	10 - 20
ethylbenzene	100-41-4	1 - 3
zinc oxide	1314-13-2	1 - 3
isopropanol	67-63-0	1 - 3

State regulations :

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: ZINC; ZINC OXIDE FUME; XYLENE; ETHYL BENZENE; METHYL ETHYL KETONE (MEK); CALCIUM CARBONATE; ISOPROPYL ALCOHOL
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: ZINC; ZINC OXIDE; XYLENES; BENZENE, DIMETHYL-; ETHYL BENZENE; BENZENE, ETHYL-; METHYL ETHYL KETONE; 2-BUTANONE; CALCIUM CARBONATE; LIMESTONE; ISOPROPYL ALCOHOL; 2-PROPANOL
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Zinc; Xylene (mixed); Ethylbenzene; Methyl ethyl ketone; 2-Butanone
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: ZINC; ZINC OXIDE (ZNO); BENZENE, DIMETHYL-; BENZENE, ETHYL-; 2-BUTANONE; LIMESTONE; 2-PROPANOL
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65 PFF :

WARNING: This product contains a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Product/ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
cadmium	Yes.	Yes.	0.05 µg/day (inhalation)	Yes.
respirable quartz	Yes.	No.	No.	No.
butylbenzylphthalate	No.	Yes.	No.	1200 µg/day (ingestion)
epichlorohydrin	Yes.	Yes.	Yes.	No.

SECTION 16: Other information

Remarks : Note: In USA, consult Code of Federal Regulations, Title 29, Labor, Parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable Federal, State or local regulations that apply to safe practices in coating operations.
Warning! If you scrape, sand, or remove old paint, you may release lead dust. LEAD is TOXIC.

Validation : Validated by US - HSE Products Coordinator on 3/10/2015.

GHS Classification

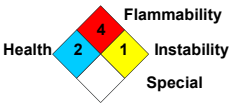
Procedure used to derive the classification.

SECTION 16: Other information

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

Hazardous Material Information System (U.S.A.)

National Fire Protection Association (U.S.A.)



Personal Protective Equipment (PPE) shown in this section is a suggestion. Since conditions vary from one work location to another consult the facility safety & health program. Customer or end user is responsible to evaluate worker exposure conditions at the site of application and determine the appropriate PPE suitable for workers at that particular facility or location.

Abbreviations and acronyms :

ANSI = American National Standards Institute
HCS = Hazardous Communication System
TSCA = Toxic Substances Control Act
CFR = Code of federal Regulations
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
OSHA = United States Occupational Health and Safety Administration
NIOSH = National Institute for Occupational Safety and Health
ACGIH = American Conference of Industrial Hygienists
IARC = International Agency for Research on Cancer.
NTP = National Toxicology Program
ATE = Acute Toxicity Estimate

OECD = Organisation for Economic Co-operation and Development
BCF = Bioconcentration Factor
DOT = United States Department of Transportation
ERG = Emergency Response Guide
TDG = Transport of Dangerous Goods, Canada
SCT = Transportation & Communications Ministry, Mexico
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association
SARA = Superfund Amendments Reauthorization Act
EPCRA = Emergency Planning and Community Right to Know Act

Notice to reader

Indicates information that has changed from previously issued version.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

Section 1: PRODUCT AND COMPANY IDENTIFICATION

SDS Identification Name: HexPly® M9.1 Prepreg
SDS Number: 439-7737-HPLY-M9.1-04 **Date:** November 1, 2011 **Page:** 1 of 7
Supersedes SDS Number: 242-2628-M9.1-PPUS-03
US43104

Manufacturer:
Hexcel®
31815 Great Western Drive
Windsor, CO. 80550

Emergency Telephone Number:
800-433-5072 (24-Hour) Hexcel®

Information Telephone Number:
925-551-4900 (Normal Business Hours-PT)

Product Identification Number: HexPly® M9.1 Prepreg

Chemical Family: Formulated Epoxy Resin Impregnated Material: Carbon, Fiberglass or Peel Ply

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

The listed components are classified as Hazardous Chemicals as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Component	CAS® Number	% by Weight	OSHA (PEL)	ACGIH® (TLV®)
Resin Matrix Information:				
Epichlorohydrin/ Bisphenol A epoxy resin	25068-38-6	27-56	Not determined	Not determined
Diuron	330-54-1	0.5-2	10 mg/m^3	10 mg/m^3
Substrate Information, as appropriate, for various product types:				
Fiberglass fiber, synthetic, vitreous, continuous filament	65997-17-3	40-70	15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	5 mg/m^3 (Inhalable) 1 f/cc (Respirable)

This product is classified as a Hazardous Chemical as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The percentages will vary depending on product type, which fiber or fabric is used, the individual component's variation and the resin content applied.

The exposure limits expressed are for each individual component and not for the total product.

Where specific exposure limits for component dusts are not established, the levels provided for (Total/Inhalable) dust and (Respirable) fraction reflect the classification of Particulate Not Otherwise Regulated (PNOR) by OSHA or Classified (PNOC) by ACGIH®.

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor:
Resin impregnated fiber, fabric or peel ply with no distinctive odor.

Statements of Hazard:
Warning! Dust generated from machining, grinding or sanding the cured product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present.

Warning! This may cause eye and skin irritation, allergic skin reaction and sensitization.

Vapor or fumes generated from heating or curing this product may cause eye and respiratory tract irritation.

Dust from machining, grinding or sawing the cured product may cause skin, eye and upper respiratory tract irritation, allergic skin reaction and possible sensitization.

Primary Routes of Exposure:

Eye--Yes	Skin--Yes	Inhalation--Yes	Ingestion--No

HMIS® Rating:

Health--2* Chronic	Flammability--0	Reactivity--1	Special--None

Potential Health Effects:

Eye: Contact may cause irritation. Vapor or fumes generated from exposing this product to elevated temperatures may cause irritation. Dust from machining, grinding or sawing the cured product may cause mechanical irritation.

Skin: Contact may cause irritation, allergic skin reaction, dermatitis and possible sensitization. Dust from machining, grinding or sawing the cured product may cause mechanical irritation.

Inhalation: May cause irritation to the upper respiratory tract. Vapor or fumes generated from exposing this product to elevated temperatures may cause irritation to the respiratory tract. Dust from machining, grinding or sawing the cured product may cause irritation to the upper respiratory tract.

Ingestion: None expected under normal conditions of use. If any of this product or the cured product dust is swallowed, seek medical attention.

Medical Conditions Aggravated by Exposure: Preexisting eye, skin or respiratory disorders may be aggravated by exposure to this product or to the dust from machining, grinding or sawing the cured product.

Carcinogenic Information: The components present in this material at concentrations equal to or greater than 0.1 % are not listed or regulated by IARC, NTP, OSHA or ACGIH® as a carcinogen. Except for Diuron (CAS® # 330-54-1), which is an ACGIH® Class A4, not classifiable as a human carcinogen.

Other:	**OSHA (PEL)**	**ACGIH® (TLV®)**
Exposure Limits for cured product dust as [Particulate Not Otherwise Regulated (PNOR) by OSHA or Classified (PNOC) by ACGIH®]:	15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	10 mg/m^3 (Inhalable) 3 mg/m^3 (Respirable)

Section 4: FIRST AID MEASURES

Eye: In case of eye contact, immediately flush eyes with large amounts of water for at least 15 minutes, keeping the eyelids open. Get medical attention immediately.

Skin: In case of contact with this product or the cured product dust, immediately wash skin with soap and plenty of water. Get medical attention if irritation develops.

Inhalation: If excessive inhalation of vapor or fumes occurs, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, qualified personnel may administer oxygen. If dust is inhaled in a large quantity, remove to fresh air. Get medical attention immediately.

Ingestion: Ingestion of this product or the dust from it is unlikely. If swallowed, get medical attention immediately.

Section 5: FIRE FIGHTING MEASURES

Flash Point/Method of Determination: Not determined

Means of Extinction: Use water spray, dry chemical or CO_2 to extinguish fires.

Special Fire Hazards: Avoid exposure through use of a self-contained, positive-pressure breathing apparatus. Dust generated from machining, grinding or sanding the product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present.

Section 6: ACCIDENTAL RELEASE MEASURES

Procedures in case of Accidental Release or Leakage: Avoid contact with skin, eyes or clothing (See Section 8). Clean up material and put into a suitable container and dispose of properly (See Section 13).

Section 7: HANDLING AND STORAGE

Precautions to be taken in Handling and Storage: See label on container for the proper temperature. Maintain sealed against contamination from dirt and moisture.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection: Avoid eye contact. Wear safety glasses with side shields when machining, grinding or sawing the cured product.

Skin Protection: Use gloves made of impervious materials. Wear clothing sufficient to cover skin areas.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

Respiratory Protection: Not ordinarily required. If sufficient vapor or fumes are being generated during heating or curing of this product, use a NIOSH approved organic vapor respirator. If sufficient dust is generated during machining, grinding or sawing the cured product, use a NIOSH approved dust respirator.

Ventilation: Use local exhaust sufficient to control vapor, fumes or dust generated. If an exhaust ventilation is not available or is inadequate, use a NIOSH approved respirator, as appropriate.

General Hygiene Recommendations: Before eating, drinking, smoking or using toilet facilities, wash face and hands thoroughly with soap and water. Use vacuum equipment to remove the cured product dust from clothing and work areas. Compressed air is not recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor.....	Resin impregnated fiber, fabric or peel ply with no distinctive odor.
Melting Point (^{o}F/^{o}C).....	Not determined
Specific Gravity (Water=1).....	Not determined
pH of Undiluted Product.....	Not determined
Vapor Pressure (mm Hg.).....	Not determined
Vapor Density (Air=1).....	Not determined
Viscosity.....	Not determined
Percent (%) VOC.....	Same as % Volatile
Volatile [Percent (%) by Weight]....	0%
Solubility in Water.....	Not determined

Section 10: STABILITY AND REACTIVITY

Stability: Stable under proper handling conditions.

Incompatible Materials: Avoid strong acids, bases, oxidizers and amines.

Products evolved from Heat of Combustion or Decomposition: The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Burning will produce carbon oxides, nitrogen, aldehydes, phenolics, water, ammonia, melamine, dimethylamine, 2,4-dichlorophenyl isocyanate, chlorine and other unidentified gases and vapors that may be toxic. Avoid inhalation.

Hazardous Polymerization: Will not occur under proper conditions of use. Rapid heating of the product in bulk may produce an uncontrolled exothermic reaction that may char and decompose the resin system, generating unidentified gases and vapors that may be toxic. Avoid inhalation.

Section 11: TOXICOLOGICAL INFORMATION

Component Toxicity Data:
Median Lethal Dose (Species):
Oral (LD_{50})...Epichlorohydrin/Bisphenol A epoxy resin…>5,000 mg/kg (Rat)
…Diuron…>1,017 mg/kg (Rat)

Dermal (LD_{50})...Epichlorohydrin/Bisphenol A epoxy resin...>20,000 mg/kg (Rabbit)
…Diuron…>2,000 mg/kg (Rabbit)

Inhalation (LC_{50})...Diuron…>5.0 mg/L/4H (Rat)

Irritation Index, Estimation of Irritation (Species):
Skin...Not determined
Eye...Not determined
Inhalation (LC_{50})...Not determined

Other:
Sensitization…Epichlorohydrin/Bisphenol A epoxy resin…Sensitizer (Guinea pig)

Mutagenic:
Epichlorohydrin/Bisphenol A epoxy resin...Hamster Bone Marrow Cytogenetics (In-Vivo)-Negative
…Mouse Spermatocytes Cytogenetics (In-Vivo)-Negative
…Micronucleus Test (In Vivo)-Negative
…Mouse Dominant Lethal Test-Negative
…Alkylation of DNA-Positive
…Human Mononucleated WBC (In-Vitro)-Negative
…Host Mediated Assay-Negative

Section 12: ECOLOGICAL INFORMATION

No ecological data has been determined.

Section 13: DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Material for disposal should be placed in appropriate sealed containers to avoid potential human and environmental exposure. It is the responsibility of the generator to comply with all federal, state, provincial and local laws and regulations. We recommend that you contact an appropriate waste disposal contractor and environmental agency for relevant laws and regulations. Under the U.S., Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

Section 14: TRANSPORT INFORMATION

DOT:

Proper Shipping Name….	Not regulated
Hazard Class.....	Not regulated
Identification Number…..	Not regulated
Packing Group……..……	Not regulated
Label Required..……..	None

Section 15: REGULATORY INFORMATION

SARA Title III:
Section 302/304 Extremely Hazardous Substance:
None

Section 311 Hazardous Categorization:
Class 1 (Acute)
Class 2 (Chronic)

Section 313 Toxic Chemicals:
Diuron (CAS® # 330-54-1)

CERCLA Section 102(a) Hazardous Substance:
Diuron (CAS® # 330-54-1), RQ 100

RCRA Information: Currently, this product is not listed in federal hazardous waste regulations 40 CFR, Part 261.33, paragraphs (e) or (f), i.e. chemical products that are considered hazardous if they become wastes. State or local hazardous waste regulations may also apply if they are different from the federal regulation. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

WHMIS (Canada):
Classification:
D2B

This product has been classified in accordance with hazard criteria of the "Controlled Products Regulations" and this SDS contains all the information required by the "Controlled Products Regulations."

Ingredient Disclosure List:
Epichlorohydrin/Bisphenol A epoxy resin (CAS® # 25068-38-6)
Diuron (CAS® # 330-54-1)

TSCA Information: This product is an article as defined by TSCA and is not required to be listed in the TSCA inventory.

Ozone Depletion Information: This product does not contain or is not manufactured with ozone depleting substances as identified in Title VI, Clean Air Act "Stratospheric Ozone Protection" and the regulations set forth in 40 CFR, Part 82.

Section 16: OTHER INFORMATION

Special Precautions: When present in the product, airborne carbon fibers or dust may create electrical short-circuits which could result in damage to or malfunctioning of electrical equipment.

Explanation and Disclaimer: Wherever such words or phrases as "hazardous," "toxic," "carcinogen," etc. appear herein, they are used as defined or described under state employee right-to-know laws, Federal OSHA laws or the direct sources for these laws such as the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful.

Any exposure can only be understood within the entire context of its occurrence, which includes such factors as the substance's characteristics as defined in the SDS, amount and duration of exposures, other chemicals present and preexisting individual differences in response to the exposure.

The data provided in this SDS is based on the information received from our raw material suppliers and other sources believed to be reliable. We are supplying you this data solely in compliance with the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200 and other Federal and state laws as described in Section 15: Regulatory Information.

The information contained in this SDS is proprietary and confidential to Hexcel Corporation. This SDS and the information in it are not to be used for purposes other than compliance with the Federal OSHA Hazard Communication Standard. If you have received this SDS from any source other than Hexcel Corporation or its authorized agent, the information contained in it may have been modified from the original document and it may not be the most current revision.

Liability, if any, for use of this product is limited to the terms contained in our sale terms and conditions. We do not in any way warrant (expressed or implied, including any implied warranty for merchantability or fitness for a particular purpose) the data contained or the product described in this SDS. Additionally, we do not warrant that the product will not infringe any patent or other proprietary or property rights of others.

Prepared by: Darryl Ong,
Hexcel Corporate Safety and Health,
Senior Product Safety Information Specialist

Revision History:
11/10/11 update to new format, added new address
03/05/10 added the dust clause to section 3 & 5
10/29/08 Update description
01/12/07 Deleted Prop 65, product no longer manufactured in CA. Deleted carbon and aramid fabric from section 2, not considered hazardous by OSHA and ACGIH®.

SAFETY DATA SHEET
HexPly M9.6H

As this product is an Article according to Regulation (EC) No. 1907/2006 (REACH), there is no legal obligation to issue a Safety Data Sheet. This document is supplied for information purposes only and it is not subject to the formal requirements of safety data sheets under the REACH Regulations.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name HexPly M9.6H

Product number 20690EU-1

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Epoxy resin formulation in film form or film containing continuous fibres of glass, carbon or aramid. Also applies to materials with silver-coated reinforcements.

1.3. Details of the supplier of the safety data sheet

Supplier

Hexcel Composites GmbH & Co.KG
Industriegelaende 2
A-4720 Neumarkt i.H.
Austria
Tel: ++43 (0) 7733 6651 0
Fax: ++43 (0) 7733 6651 145

Contact person

SDSEUOffice@hexcel.com
Duxford, Cambridge, CB22 4QD, UK ++ 44 (0)1223 833141
Industriegelaende 2, A-4720 Neumarkt i.H., Austria. ++ 43 (0)7229 7720
Parc Industriel, Rue 3 Bourdons, 54, B-4840, Welkenraedt, Belgium ++32 87 307411
Sophie-Scholl-Weg 22, 21684 Stade, Germany. ++49 4141 78 79 00
Via S, Cristoforo, 44, 21047 Saronno, Italy. ++39 02 96709082
Polígono Ind., C/Bruselas 10-16, 28980 Parla, Madrid, Spain. ++34 91 664 49 00
45 rue de la Plaine, CS 10027, 01126 Dagneux CEDEX, France, ++33 (0)4 72 25 26 27
Xiqing Economic Development Area, Tianjin, China. ++86 22 2388 9068
5th Floor, Wisma Samudra, Jalan Kontraktor U1/14, Hicom-Glenmarie Industrial Park, 40150 Shah Alam, Selangor, Malaysia. +60 3 5569 3510

1.4. Emergency telephone number

Emergency telephone To be used only for advice on chemical emergencies, spillages, fires or First Aid:
For emergencies in US/Canada: CHEMTREC – 800 424 9300
For emergencies in rest of the world: CARECHEM24 - +44 (0) 1235 239 670

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317

Environmental hazards Not Classified

2.2. Label elements

HexPly M9.6H

Pictogram

Signal word	Warning
Hazard statements	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.
Precautionary statements	P302+P352 IF ON SKIN: Wash with plenty of water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P273 Avoid release to the environment. P280 Wear protective clothing and gloves.
Contains	EPOXY RESIN (Number average MW <= 700), EPOXY RESIN (Number average MW >700 - <1100)

2.3. Other hazards

Warning! Dust generated from machining, grinding or sanding the product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

EPOXY RESIN (Number average MW <= 700) **30-60%**

CAS number: 25068-38-6 EC number: 500-033-5

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Skin Sens. 1 - H317
Aquatic Chronic 2 - H411

EPOXY RESIN (Number average MW >700 - <1100) **30-60%**

CAS number: 25068-38-6

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Skin Sens. 1 - H317

The full text for all hazard statements is displayed in Section 16.

Composition comments The product consists of a resin and fabric component. Possible exposure to the above mentioned chemicals will be as a result of contact with the resin. The above mentioned concentrations have been calculated based only on the resin component; no allowance has been made for the fabric component as this does not provide any dilution effect.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation With any sign of respiratory distress, affected persons should be taken into fresh air, and made to rest while medical attention is sought.

HexPly M9.6H

Ingestion Immediately rinse the mouth repeatedly with water, if swallowing has occurred, do not induce vomiting. If requested, give affected person sips of water. Seek medical attention immediately. If vomiting does occur do not allow the affected person to inhale their vomit. Do not give anything by mouth to an unconscious person.

Skin contact With uncured material, immediately wash the affected area with warm, soapy water then clean the skin with resin removing cream, followed by further washing with warm soapy water. Do not use solvents. If irritation persists, seek medical attention.

Eye contact Flush with water for at least 15 minutes and seek medical attention if irritation persists.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation Inhalation of dusts during cutting, sanding or machining of this product may cause mechanical irritation of the respiratory tract.

Skin contact Contact with dust from cured product may cause mechanical irritation. This product contains component(s) that can cause irritant and allergic contact dermatitis following skin contact with the product or vapours generated during processes using heat. The initial symptoms of irritant and allergic contact dermatitis are itching, redness, swelling, blistering, flaking and cracking.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Warning! Dust generated from machining, grinding or sanding the cured product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present. Carbon fibres contained in some products are electrically conductive and if released during combustion may present a hazard to unprotected electrical apparatus. Refer to section 10 for further details.

Hazardous combustion products The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Burning will release carbon dioxide, water, carbon monoxide and compounds of nitrogen.

5.3. Advice for firefighters

Special protective equipment for firefighters Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Due to the physical nature of this product, environmental release to drains and water courses is not possible.

6.3. Methods and material for containment and cleaning up

HexPly M9.6H

Methods for cleaning up Clean affected area, and dispose of product and cleaning materials in accordance with local regulations.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid contact with uncured product. Avoid inhalation of dust/fumes generated during processing operations. Dust from machining cured product will contain fibrous material. Avoid inhalation and provide positive dust extraction and collection from cutting zone. Protect against fire and explosion by avoiding dust formation and ignition sources when machining cured product. Dust from products containing carbon fibre is electrically conductive. Wash skin thoroughly after handling. Use appropriate skin cream to prevent drying of skin. Promptly remove any clothing that becomes contaminated. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store containers, securely closed according to container label instructions. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Specific end use(s) As this product is an article, this section is not applicable.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment

Appropriate engineering controls Provide adequate ventilation for operations involving elevated temperature or dust formation.

Eye/face protection Goggles or face protection should be worn during machining operations.

Hand protection Avoid skin contact by use of impermeable gloves when handling the product. Recommendation: Select a glove type that meets Standard EN374. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Other skin and body protection Ensure forearms are protected by use of gloves with long gauntlet, disposable sleeves or long sleeve overalls.

Respiratory protection Local exhaust ventilation or an approved respirator should be used where fumes from hot material, or dust from machining cured material arise.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

HexPly M9.6H

Appearance	Flexible resin film containing continuous fibres of glass, carbon or aramid in unidirectional or woven fabric form. Product is protected each side by coloured polythene foil or foil on side and release papercovering on the other.
Colour	Varying.
Odour	Odourless.
Odour threshold	Not applicable due to its low odour.
pH	Not relevant due to the physical form of this product.
Melting point	Not relevant due to the physical form of this product.
Initial boiling point and range	Not relevant due to the physical form of this product.
Flash point	Not relevant due to the physical form of this product.
Evaporation rate	Not relevant due to the physical form of this product.
Flammability (solid, gas)	Not relevant. The product does not contain any flammable constituent.
Upper/lower flammability or explosive limits	Not relevant due to the physical form of this product.
Vapour pressure	Not relevant due to the physical form of this product.
Vapour density	Not relevant due to the physical form of this product.
Relative density	Not relevant due to the physical form of this product.
Bulk density	Not relevant due to the physical form of this product.
Solubility(ies)	The product is supplied in roll form. It is protected each side by polythene foil and /or release paper. The availability of the product to be exposed to a condition where solubility can occur is minimal.
Partition coefficient	Technically not feasible.
Auto-ignition temperature	Technically not feasible. Material will decompose and exotherm before reaching its auto-ignition temperature.
Decomposition Temperature	>300°C
Viscosity	Not relevant due to the physical form of this product.
Explosive properties	Not classified as explosive but dust or airborne filaments could induce explosion in high voltage equipments by short circuit.
Oxidising properties	Does not meet the criteria for classification as oxidising.
Comments	The indicated values do not necessarily correspond to the product specification. Please refer to the technical data sheet for specification data.

9.2. Other information

Other information	No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Refer to section 10.3 for further details.

10.2. Chemical stability

Stability	Stable under recommended storage temperature as stated in product literature.

HexPly M9.6H

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Material may react exothermically when exposed to high temperatures; exotherm may be severe if material is in bulk (rolls).

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid Avoid contact with strong acids and alkalis and oxidising materials.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition and burning may release oxides of carbon, nitrogen and sulphur. The composition of gases/vapours/by-products generated during decomposition will vary depending on temperature conditions, temperature rate of rise and the presence of other chemicals in the vicinity that may react with the product. Gases/vapours/by-products should be regarded as toxic.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects This product is considered an Article with no intentional release in accordance with EC No. 1907/2006, REACH Regulation. As this product is an Article, there is no requirement to determine its hazard classification. The information provided in this section is a simplified summary of the toxicological health effects derived by voluntarily applying the classification methods for mixtures.

Skin corrosion/irritation

Animal data Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity A Daphnia Immobilisation Study program covering the chemistry family of the saleable product has been conducted to determine the aquatic toxicity of prepregs. Based on the study results, the product is not required to be labelled for supply with the dead fish/dead tree symbol (GHS09) in accordance with CLP Regulation.

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Technically not feasible.

12.4. Mobility in soil

Mobility Not relevant due to the physical form of this product.

12.5. Results of PBT and vPvB assessment

HexPly M9.6H

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information It is recommended to conduct a risk assessment prior to recycling or re-using paper coverings or any other packaging to ensure the downstream user's exposure to any potential hazard is identified and appropriately managed. For packaging and paper coverings, which may have come into direct contact with the product, the hazard classification and applicable regulatory restriction associated with the chemicals identified in section 3 of the Safety Data Sheet should be considered during the risk assessment to ensure no recycling or re-use in downstream applications/markets where the use would not be approved.

SECTION 14: Transport information

General A Daphnia Immobilisation Study program covering the chemistry family of the saleable product has been conducted to determine the aquatic toxicity of prepregs. Based on the study results, the product is not required to be labelled for supply with the dead fish/dead tree symbol (GHS09) in accordance with CLP Regulation and is not considered as Class 9 in accordance with Dangerous Goods for Transport Regulations for road, sea and air.

14.1. UN number

This product is not dangerous to transport.

14.2. UN proper shipping name

This product is not dangerous to transport.

14.3. Transport hazard class(es)

This product is not dangerous to transport.

14.4. Packing group

This product is not dangerous to transport.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

This product is not dangerous to transport.

14.6. Special precautions for user

This product is not dangerous to transport.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Product not transported in bulk.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

HexPly M9.6H

National regulations

This product has been classified in accordance with Regulation (EC) No 1272/2008 (CLP).
This product is considered an Article with no intentional release in accordance with EC No. 1907/2006, REACH Regulation.
This product does not contain Annex XIV substances subject to Authorisation according to Regulation (EC) No. 1907/2006 (REACH) or substances of very high concern published in accordance with Article 59(10) above 0.1 % (w/w).

15.2. Chemical safety assessment

Inventories

US - TSCA

This product is an article as defined by TSCA and is not required to be listed in the US, EPA, TSCA Inventory.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ATE Acute Toxicity Estimate
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP Classification, Labelling and Packaging Regulation; Regulation (EC) No 1272/2008
CAS# Chemical Abstracts Service number
DNEL Derived No Effect Level
EC# EINECS and ELINCS Number
EINECS European Inventory of Existing Commercial Substances
ELINCS European List of Notified Chemical Substances
EmS Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA Environmental Protection Agency
EU European Union
GHS Globally Harmonised System
IATA International Air Transport Association
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
Kow Octanol-water partition coefficient
LC50 Lethal concentration to 50% of a test population
LD50 Lethal dose to 50% of a test population (Median Lethal Dose)
n.o.s. Not otherwise specified
PBT Persistent, Bioaccumulative and Toxic substance
PNEC Predicted No Effect Concentration
PPE Personal Protection Equipment
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SADT Self-accelerating decomposition temperature
SCBA Self-Contained Breathing Apparatus
STOT Specific Target Organ Toxicity
(STOT) RE Repeated Exposure
(STOT) SE Single Exposure
SVHC Substance of Very High Concern
TSCA Toxic Substances Control Act
UN United Nations
VOC Volatile Organic Compound
vPvB Very Persistent and very Bioaccumulative

General information

This safety data sheet has been written in accordance with the requirements of the Commission Regulation (EC) No 453/2010 of 20 May 2010.

Classification procedures according to Regulation (EC) 1272/2008

Eye Irrit. 2 - H319: Calculation method. Skin Irrit. 2 - H315: Calculation method. Skin Sens. 1 - H317: Calculation method.

HexPly M9.6H

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Issued by	European Product Stewardship Department
Revision date	01/05/2015
Revision	2
Supersedes date	20/09/2013
Hazard statements in full	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects.

The product should be used in accordance with good industrial hygiene practice and compliance with any legal requirements. All information has been compiled with due diligence and is based on the present state of our knowledge. It is intended to describe the product from a point of view of safety and should not therefore be construed as guaranteeing any specific property. All products are supplied subject to our Standard Conditions of Sale which contains limitations on liability.

SAFETY DATA SHEET
Denat. ethanol 93%

SDS according to Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex II-EU

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Date issued	10.11.2015
Revision date	27.08.2015

1.1. Product identifier

Product name	Denat. ethanol 93%

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	ES 1 SU21 Consumer uses: Private households (= general public = consumers) PC4 Antifreeze and Deicing products PC35 Washing and cleaning products (including solvent based products)

1.3. Details of the supplier of the safety data sheet

Company name	Borup Kemi I/S
Postal address	Bækgårdsvej 53
Postcode	DK-4140
City	Borup
Country	Denmark
Tel	57 56 00 20
Fax	57 56 00 21
E-mail	kontakt@borup-kemi.dk
Website	http://www.borup-kemi.dk

1.4. Emergency telephone number

Emergency telephone	Use your national or local emergency number - See section 4 “First aid measures”.:-

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Flam. Liq. 2;H225;

2.2. Label elements

Hazard Pictograms (CLP)

Signal word	Danger
Hazard statements	H225 Highly flammable liquid and vapour.
Precautionary statements	P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children.

	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P403+P235 Store in a well-ventilated place. Keep cool. P501 Indholdet/beholderen bortskaffes i henhold til lokale affaldsregulativer.
Tactile warnings	Yes

2.3. Other hazards

Description of hazard	This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.
Other hazards	Product contains low-boiling liquids. If using respirators must be self-contained.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents
Ethanol	CAS no.: 64-17-5 EC no.: 200-578-6 Index no.: 603-002-00-5 Synonyms: ethyl alcohol	Flam. Liq. 2; H225;	93 vægt%
butanone	CAS no.: 78-93-3 EC no.: 201-159-0 Index no.: 606-002-00-3 Registration number: 01-2119457290-43-XXXX Synonyms: ethyl methyl ketone	Flam. Liq. 2;H225; Eye Irrit. 2;H319; STOT SE3;H336; EUH 066;	2 vægt%
Substance comments	6) See also section 16.		

SECTION 4: First aid measures

4.1. Description of first aid measures

General	If medical advice is needed, have product container or label at hand. Burns: Flush with water until pain ceases. Remove clothing that is not stuck to the skin – seek medical advice/transport to hospital. If possible, continue flushing until medical attention is obtained.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Keep victim under observation. Get medical advice/attention if you feel unwell.
Skin contact	Remove contaminated clothing. Wash skin with soap and water. Hudrensemiddel kan anvendes. Seek medical advice in case of persistent discomfort.
Eye contact	Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.
Ingestion	Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Do NOT induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

General symptoms and effects	Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens. Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally

	irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

4.3. Indication of any immediate medical attention and special treatment needed

Other Information	No special immediate treatment required. Medbring dette sikkerhedsdatablad.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with powder, foam, carbon dioxide or water mist.
Improper extinguishing media	Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced.
Hazardous combustion products	These are oxides of carbon. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

5.3. Advice for firefighters

Personal protective equipment	Use personal protective equipment as required.
Fire fighting procedures	Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Not ignited stock cooled with water spray. Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Smoking and naked flames prohibited. Take precautionary measures against static discharges. Use spark-free tools and explosion proof equipment.

6.2. Environmental precautions

Environmental precautionary measures	Do not discharge large quantities of concentrated spills and residue into drains.

6.3. Methods and material for containment and cleaning up

Cleaning method	Contain and absorb spill with sand or other absorbent, non-combustible material and transfer to suitable waste containers.
Clean up	Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

Other instructions	See section 8 for type of protective equipment. See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	See section 8 for information about precautions for use and personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Storage	The product should be stored safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Keep in tightly closed original packaging. Store in a dry, cool, well-ventilated area. Keep fireproof. Emergency Services technical regulations for flammable liquids must be strictly followed, including rules for flammable storage.
Other Information	Fire Class - 2, storage unit max 1 liter. There should be discarded 25 units

	without fire regulatory approval

Conditions for safe storage

Requirements for storage rooms and vessels	Cool and frostfree.

7.3. Specific end use(s)

Specific use(s)	See application section 1

Specific end users

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure limit values

Substance	Identification	Value	TWA Year
Ethanol	CAS no.: 64-17-5 EC no.: 200-578-6 Index no.: 603-002-00-5 Synonyms: ethyl alcohol	8-hour TWA: 1000 ppm 8-hour TWA: 1920 mg/m3	
butanone	CAS no.: 78-93-3 EC no.: 201-159-0 Index no.: 606-002-00-3 Registration number: 01-2119457290-43-XXXX Synonyms: ethyl methyl ketone	8-hour TWA: 200 ppm Sk, BMGV 8-hour TWA: 600 mg/m3 Sk, BMGV 15 min.: 300 ppm Sk, BMGV 15 min.: 899 mg/m3 Sk, BMGV Sk = Can be absorbed through the skin.	

DNEL / PNEC from substances

Substance	Ethanol
DNEL	Group: Worker Exposure route: Inhalation Exposure frequency: Short term (acute) Type of effect: Local effect Value: 1900 mg/m3
DNEL	Group: Worker Exposure route: Dermal Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 343 mg/kg bw/day
DNEL	Group: Worker Exposure route: Inhalation Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 950 mg/m3
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Short term (acute) Type of effect: Local effect Value: 950 mg/m3
DNEL	Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 87 mg/kg bw/day

DNEL	Group: Consumer Exposure route: Dermal Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 206 mg/kg bw/day
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 114 mg/m3
PNEC	Exposure route: Water Value: 0,96 mg/L Remarks: Fresh Water
PNEC	Exposure route: Water Value: 0,79 mg/L Remarks: Marine Water
PNEC	Exposure route: Water Value: 2,75 mg/L Remarks: Intermittent releases Water
PNEC	Exposure route: Soil Value: 0,63 mg/kg soil dw
Substance	butanone
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 106 mg/m³
DNEL	Group: Consumer Exposure route: Dermal Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 412 mg/kg bw/day
DNEL	Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 31 mg/kg bw/day
DNEL	Group: Worker Exposure route: Inhalation Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 600 mg/m³
DNEL	Group: Worker Exposure route: Dermal Exposure frequency: Long term (repeated) Type of effect: Systemic effect Value: 1161 mg/kg bw/day
PNEC	Exposure route: Soil Value: 22.5 mg/kg soil dw
PNEC	Exposure route: Water Value: 55.8 mg/L Remarks: Intermittent releases
PNEC	Exposure route: Water Value: 55.8 mg/L Remarks: Marine

PNEC	Exposure route: Water Value: 55.8 mg/L Remarks: Fresh

8.2. Exposure controls

Recommended monitoring procedures	Compliance with the stated exposure limits values should be checked on a regular basis.

Safety signs

Precautionary measures to prevent exposure

Appropriate engineering controls	Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see above). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.
Instruction on measures to prevent exposure	Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Respiratory protection

Respiratory protection	Wear full-face mask with fresh air supply. (without motor fan).

Hand protection

Hand protection	Wear protective gloves made of butyl rubber.

Eye / face protection

Eye protection	Use face shield. Alternatively, safety glasses with side shields used

Skin protection

Skin protection (except hands)	Not required.

Hygiene / Environmental

Specific hygiene measures	Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom.

Exposure controls

Exposure controls and personal protection, additional info.	Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values above. If the work is covered by the regulations on work involving coded products (WEA Order no. 302/1993, Denmark), protection gear accordingly. See also. product code in the section on 'Hazard Identification'.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	Colourless
Odour	Alcohol
Melting point/melting range	Value: = -112 °C
Boiling point / boiling range	Value: = 78 °C
Flash point	Value: = 13 °C
Lower explosion limit with unit of measurement	Value: ~ 3,3 - 19 vol%
Vapour pressure	Value: = 43 mm Hg
Specific gravity	Value: = 0,81 g/cm3
Solubility in water	Soluble
Solubility in fat	Opløselighed i fedt

Spontaneous combustability	Value: = 371 °C
Viscosity	Value: = 1,4 centistokes

9.2. Other information

Other physical and chemical properties

Comments	None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No data available

10.2. Chemical stability

Stability	Flammable. Normally stable at recommended storage conditions. The vapors can ignite at temperatures above the flash point.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No special.

10.4. Conditions to avoid

Conditions to avoid	Take precautionary measures against static discharge. Do not expose to heat (eg. Sunlight), because pressure can be developed

10.5. Incompatible materials

Materials to avoid	Avoid contact with strong acids. Avoid contact with strong bases. Avoid contact with strong oxidising agents. Avoid contact with strong reducing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products	If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological data for substances

Substance	Ethanol
LD50 oral	Value: 10470 mg/kg bw Animal test species: rat
LD50 dermal	Value: > 20000 mL/kg bw Animal test species: rabbit
LC50 inhalation	Value: 124,7 mg/L air Animal test species: rat Duration: 4 h
Substance	butanone
LD50 oral	Value: 4,29 mL/kg bw Animal test species: Rat
LD50 dermal	Value: > 10 mL/kg bw Animal test species: Rabbit

Potential acute effects

Inhalation	The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication.
Skin contact	May irritate the skin – may cause reddening.
Eye contact	May cause eye irritation.
Ingestion	Ingestion may cause discomfort.

Delayed effects / repeated exposure

General	Prolonged or repeated inhalation of vapors may damage the central nervous

	system.
Skin contact	Contact with irritant substances may result in the contact area is more prone to absorb harmful substances such as allergens.

Symptoms of Exposure

Other Information	There is not an exposure scenario for this product.

SECTION 12: Ecological information

12.1. Toxicity

Toxicological data for substances

Substance	Ethanol
Acute aquatic, fish	Value: 14,2 g/L Method of testing: LC50 Duration: 96 h
Acute aquatic, algae	Value: ~ 1,96 g/L Method of testing: EC50 Duration: 96 h
Acute aquatic, Daphnia	Value: 5012 mg/L Method of testing: LC50 Duration: 48 h
Biodegradability	Value: 97 Test period: 28 days Method of testing: OECD Guideline 301 B
Bioaccumulation	Log Pow = -0,35
Substance	butanone
Acute aquatic, fish	Value: 2993 mg/L Method of testing: LC50 Duration: 96 h
Acute aquatic, algae	Value: 1972 mg/L Method of testing: EC50 Duration: 72 h
Acute aquatic, Daphnia	Value: 308 mg/L Method of testing: EC50 Duration: 48 h
Biodegradability	Value: 98 Test period: 28 days Method of testing: OECD Guideline 301 D
Bioaccumulation	Log Pow = 0,3

12.2. Persistence and degradability

Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential	The product is not bioaccumulable.

12.4. Mobility in soil

Mobility	Test data are not available.

12.5. Results of PBT and vPvB assessment

PBT assessment results	The mixture does not meet the criteria for PBT or vPvB.

12.6. Other adverse effects

Other adverse effects / Remarks	None.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of	Collect spills and waste in closed, leak-proof containers for disposal at the

disposal	local hazardous waste site.
Hazardous waste packing	Packaging which contains residual product must be disposed of the same way as product.
EWC waste code	EWC: 20 01 13 solvents

SECTION 14: Transport information

14.1. UN number

ADR	1170
RID	1170
IMDG	1170
ICAO/IATA	1170

14.2. UN proper shipping name

ADR	ETHYL ALCOHOL SOLUTION
RID	ETHYL ALCOHOL SOLUTION
IMDG	ETHYL ALCOHOL SOLUTION
ICAO/IATA	ETHYL ALCOHOL SOLUTION

14.3. Transport hazard class(es)

ADR	3
Hazard no.	33
RID	3
IMDG	3
ICAO/IATA	3

14.4. Packing group

ADR	II
RID	II
IMDG	II
ICAO/IATA	II

14.5. Environmental hazards

14.6. Special precautions for user

EmS	F-E, S-D

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Legislation and regulations	People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. For exceptions, see the Danish Working Environment Authority's Executive Order No. 239 of 6 April 2005.

15.2. Chemical safety assessment

Chemical safety assessment performed	No

SECTION 16: Other information

1993-kodenr. (DK)	2-1
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Flam. Liq. 2; H225;
List of relevant H-phrases (Section 2 and 3).	H336 May cause drowsiness or dizziness. EUH 066 Repeated exposure may cause skin dryness or cracking. H225 Highly flammable liquid and vapour.

	H319 Causes serious eye irritation.
Additional information	It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification. The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
Important data sources used to construct the safety data sheet	Data sources in Denmark. Arbejdstilsynets bekendtgørelse nr. 301 af 13. maj 1993 om fastsættelse af kodenumre. Arbejdstilsynets bekendtgørelse nr. 292 af 26. april 2001 om arbejde med stoffer og materialer (kemiske agenser). Arbejdstilsynets bekendtgørelse nr. 239 af 6. april 2005 om unges arbejde. Bekendtgørelse nr. 1049 af 27. oktober 2005 om markedsføring og mærkning af flygtige organiske forbindelser i visse malinger og lakker samt produkter til autoreparationslakering. Bekendtgørelse nr. 1075 af 24. november 2011 om klassificering, emballering, mærkning, salg og opbevaring af stoffer og Cellulosefortynder Side 13 af 14 blandinger. Bekendtgørelse nr. 878 af 26. juni 2010 af lov om kemiske stoffer og produkter. Bekendtgørelse nr. 559 af 04/07/2002 om særlige pligter for fremstillere, leverandører og importører mv. af stoffer og materialer efter lov om arbejdsmiljø. Bekendtgørelse nr. 507 af 17/05/2011 om grænseværdier for stoffer og materialer, med senere ændringer. Bekendtgørelse nr. 1309 af 18/12/2012 om affald. EU forordning nr. 1907/2006 (REACH). EU forordning nr. 1272/2008 (CLP), med senere tilpasninger. ECHA □ □ Det europæiske kemikalieagentur
Version	1
Responsible for safety data sheet	Borup Kemi I/S
Comments	Valideret af mediator A/S - DH.

Safety Data Sheet

QYA130 Intercryl 700 Base Light

Version No. 3 **Date Last Revised** 20/12/12

Conforms to the requirements of Regulation (EC) No.1907/2006 (REACH), Annex II

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier Intercryl 700 Base Light

Product Code QYA130

Registration Number

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use Finish coat for water based and solvent based systems

Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Manufacturer International Paint Ltd.
Stoneygate Lane
Felling Gateshead
Tyne and Wear
NE10 0JY UK

Telephone No. +44 (0)191 469 6111

Fax No. +44 (0)191 438 3711

1.4. Emergency telephone number

Manufacturer +44 (0)191 469 6111 24hr

Official Advisory Body Telephone No.:
Advice for Doctors and Hospitals

+44 (0)844 892 0111

Email sdsfellingUK@akzonobel.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Mixture NOT yet classified according to Regulation (EC) No. 1272/2008

Classification according to 67/548/EEC or 1999/45/EC.

2.2. Label elements

According to 1999/45/EC

Contains:

S23 Do not breathe vapour/spray.
S39 Wear eye/face protection.

S51 Use only in well-ventilated areas.

P. Phrases;

2.3. Other hazards

This product contains no PBT/vPvB chemicals.

SECTION 3: Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient/Chemical Designations	Weight %	67/548/EEC Classification	EC No. 1272/2008 Classification	Notes
Butyl diglycol **CAS Number: 0000112-34-5** **EC No. 203-961-6** **Index No.: 603-096-00-8** **REACH Reg. No.:**	**1 - < 2.5**	**Xi;R36**	**Eye Irrit. 2;H319**	**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Eye

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO^2. powder, water spray.

Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.
Avoid exposure and use breathing apparatus as appropriate.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

7.3. Specific end use(s)

There are no exposure scenarios, see details in section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m^3	ppm	mg/m3	
Butyl diglycol	**15**	**101.2**	**10**	**67.5**	

For Key to entries in 'Comments' column see Section 16

DNEL/PNEC values

No Data Available

8.2. Exposure controls

Provide adequate ventilation.Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Eye/face protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should meet the requirements of standard EN 166.

Skin protection

For prolonged or repeated contact use protective gloves. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred. Skin should be washed after contact.

Use chemical resistant gloves classified under Standard EN 374: Protective gloves against chemicals and micro-organisms. Recommended gloves: Viton® or Nitrile
Breakthrough Time: 480 min

When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Other

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate,certified respirators.For maximum protection when spraying this product it is recommended that a multi layer combination type filter, such as ABEK1, is used. In confined spaces use compressed air or fresh air respiratory equipment.

Thermal hazards

No Data Available

SECTION 9: Physical and chemical properties

Appearance	Light Coloured Liquid
Odour	No smell
Odour threshold	Not Measured
pH	Not Measured
Melting point / freezing point (°C)	Not Measured
Initial boiling point and boiling range (°C)	100
Flash point (°C)	101
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured
	Upper Explosive Limit: Not Measured
Vapour pressure (Pa)	Not Measured
Vapour density	Heavier than air.
Relative density	1.18
Solubility(ies)	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature (°C)	Not Measured
Viscosity (cSt)	50

9.2. Other information

No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage and handling conditions (see section 7).When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

10.3. Possibility of hazardous reactions

May react exothermically with: oxidising agents, strong alkalis, strong acids.

10.4. Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

10.6. Hazardous decomposition products

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.
Avoid exposure and use breathing apparatus as appropriate.

SECTION 11: Toxicological information

Acute toxicity

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapour LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Butyl diglycol - (112-34-5)	5,660.00, Rat	2,700.00, Rabbit	Not Available	Not Available

SECTION 12: Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Butyl diglycol - (112-34-5)	1,300.00, Lepomis macrochirus	100.00, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

European Waste Catalogue Classification: 08 01 12 Waste paint other than those mentioned in 08 01 11

SECTION 14: Transport information

14.1. UN number

14.2. UN proper shipping name Non hazardous

14.3. Transport hazard class(es)

ADR/RID/ADN Non hazardous

IMDG	**class/div**	**Sub Class** -
	Segregation Group	No segregation group appropriate
	EmS	
ICAO/IATA	**Air class**	**Sub Class** -

14.4. Packing group

14.5. Environmental hazards

ADR/RID/ADN Environmentally Hazardous: No

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

SECTION 15: Regulatory information

EU Legislation

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

National Legislation

UKSI 2009 No. 716 CHEMICALS (HAZARD INFORMATION AND PACKAGING FOR SUPPLY) REGULATIONS 2009.

SECTION 16: Other information

IMPORTANT NOTE: the information contained in this data sheet (as may be amended from time to time) is not intended to be exhaustive and is presented in good faith and believed to be correct as of the date on which it is prepared. It is the user's responsibility to verify that this data sheet is current prior to using the product to which it relates.

Persons using the information must make their own determinations as to the suitability of the relevant product for their purposes prior to use. Where those purposes are other than as specifically recommended in this safety data sheet, then the user uses the product at their own risk.

MANUFACTURER'S DISCLAIMER: the conditions, methods and factors affecting the handling, storage, application, use and disposal of the product are not under the control and knowledge of the manufacturer. Therefore the manufacturer does not assume responsibility for any adverse events which may occur in the handling, storage, application, use, misuse or disposal of the product and, so far as permitted by applicable law, the manufacturer expressly disclaims liability for any and all loss, damages and/or expenses arising out of or in any way connected to the storage, handling, use or disposal of the product. Safe handling, storage, use and disposal are the responsibility of the users. Users must comply with all applicable health and safety laws.

Unless we have agreed to the contrary, all products are supplied by us subject to our standard terms and conditions of business, which include limitations of liability. Please make sure to refer to these and / or the relevant agreement which you have with AkzoNobel (or its affiliate, as the case may be).

The information in this Health & Safety Data Sheet is required pursuant to EC Regulation 1907(2006) and the Chemicals (Hazard Information & Packaging for Supply) Regulations 2009.

Key to 'Comments' column in Section 8.
(+) There is a risk of absorption through unbroken skin.
(C) Capable of causing cancer and/or heritable genetic damage.
(R) Suppliers recommended limit.
(S) Capable of causing occupational asthma.

The full text of the R, H & EUH phrases appearing in section 3 is:

H319 Causes serious eye irritation.

R36 Irritating to eyes.

The following sections have changed since the previous revision.

End of document

Your attention is drawn to the disclaimer on the Product Data Sheet which with this Safety Data Sheet and the package labelling comprise an integral information system about this product. Copies of the Product Data Sheet are available from International Paint on request or from our Internet sites : www.yachtpaint.com , www.international-marine.com, www.international-pc.com

Safety Data Sheet

QYA130 Intercryl 700 Base Light

Version No. 3 **Date Last Revised** 20/12/12

Conforms to the requirements of Regulation (EC) No.1907/2006 (REACH), Annex II

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier Intercryl 700 Base Light

Product Code QYA130

Registration Number

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use Finish coat for water based and solvent based systems

Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Manufacturer International Paint Ltd.
Stoneygate Lane
Felling Gateshead
Tyne and Wear
NE10 0JY UK

Telephone No. +44 (0)191 469 6111

Fax No. +44 (0)191 438 3711

1.4. Emergency telephone number

Manufacturer +44 (0)191 469 6111 24hr

Official Advisory Body Telephone No.:
Advice for Doctors and Hospitals

+44 (0)844 892 0111

Email sdsfellingUK@akzonobel.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Mixture NOT yet classified according to Regulation (EC) No. 1272/2008

Classification according to 67/548/EEC or 1999/45/EC.

2.2. Label elements

According to 1999/45/EC

Contains:

S23 Do not breathe vapour/spray.
S39 Wear eye/face protection.

S51 Use only in well-ventilated areas.

P. Phrases;

2.3. Other hazards

This product contains no PBT/vPvB chemicals.

SECTION 3: Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient/Chemical Designations	Weight %	67/548/EEC Classification	EC No. 1272/2008 Classification	Notes
Butyl diglycol **CAS Number: 0000112-34-5** **EC No. 203-961-6** **Index No.: 603-096-00-8** **REACH Reg. No.:**	**1 - < 2.5**	**Xi;R36**	**Eye Irrit. 2;H319**	**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Eye

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO^2. powder, water spray.

Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.
Avoid exposure and use breathing apparatus as appropriate.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

7.3. Specific end use(s)

There are no exposure scenarios, see details in section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m^3	ppm	mg/m3	
Butyl diglycol	**15**	**101.2**	**10**	**67.5**	

For Key to entries in 'Comments' column see Section 16

DNEL/PNEC values

No Data Available

8.2. Exposure controls

Provide adequate ventilation.Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Eye/face protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should meet the requirements of standard EN 166.

Skin protection

For prolonged or repeated contact use protective gloves. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred. Skin should be washed after contact.

Use chemical resistant gloves classified under Standard EN 374: Protective gloves against chemicals and micro-organisms. Recommended gloves: Viton® or Nitrile
Breakthrough Time: 480 min

When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Other

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate,certified respirators.For maximum protection when spraying this product it is recommended that a multi layer combination type filter, such as ABEK1, is used. In confined spaces use compressed air or fresh air respiratory equipment.

Thermal hazards

No Data Available

SECTION 9: Physical and chemical properties

Appearance	Light Coloured Liquid
Odour	No smell
Odour threshold	Not Measured
pH	Not Measured
Melting point / freezing point (°C)	Not Measured
Initial boiling point and boiling range (°C)	100
Flash point (°C)	101
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured
	Upper Explosive Limit: Not Measured
Vapour pressure (Pa)	Not Measured
Vapour density	Heavier than air.
Relative density	1.18
Solubility(ies)	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature (°C)	Not Measured
Viscosity (cSt)	50

9.2. Other information

No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage and handling conditions (see section 7).When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

10.3. Possibility of hazardous reactions

May react exothermically with: oxidising agents, strong alkalis, strong acids.

10.4. Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

10.6. Hazardous decomposition products

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.
Avoid exposure and use breathing apparatus as appropriate.

SECTION 11: Toxicological information

Acute toxicity

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapour LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Butyl diglycol - (112-34-5)	5,660.00, Rat	2,700.00, Rabbit	Not Available	Not Available

SECTION 12: Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Butyl diglycol - (112-34-5)	1,300.00, Lepomis macrochirus	100.00, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

European Waste Catalogue Classification: 08 01 12 Waste paint other than those mentioned in 08 01 11

SECTION 14: Transport information

14.1. UN number

14.2. UN proper shipping name Non hazardous

14.3. Transport hazard class(es)

ADR/RID/ADN Non hazardous

IMDG	**class/div**	**Sub Class** -
	Segregation Group	No segregation group appropriate
	EmS	
ICAO/IATA	**Air class**	**Sub Class** -

14.4. Packing group

14.5. Environmental hazards

ADR/RID/ADN Environmentally Hazardous: No

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

SECTION 15: Regulatory information

EU Legislation

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

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National Legislation

UKSI 2009 No. 716 CHEMICALS (HAZARD INFORMATION AND PACKAGING FOR SUPPLY) REGULATIONS 2009.

SECTION 16: Other information

IMPORTANT NOTE: the information contained in this data sheet (as may be amended from time to time) is not intended to be exhaustive and is presented in good faith and believed to be correct as of the date on which it is prepared. It is the user's responsibility to verify that this data sheet is current prior to using the product to which it relates.

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MANUFACTURER'S DISCLAIMER: the conditions, methods and factors affecting the handling, storage, application, use and disposal of the product are not under the control and knowledge of the manufacturer. Therefore the manufacturer does not assume responsibility for any adverse events which may occur in the handling, storage, application, use, misuse or disposal of the product and, so far as permitted by applicable law, the manufacturer expressly disclaims liability for any and all loss, damages and/or expenses arising out of or in any way connected to the storage, handling, use or disposal of the product. Safe handling, storage, use and disposal are the responsibility of the users. Users must comply with all applicable health and safety laws.

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The information in this Health & Safety Data Sheet is required pursuant to EC Regulation 1907(2006) and the Chemicals (Hazard Information & Packaging for Supply) Regulations 2009.

Key to 'Comments' column in Section 8.
(+) There is a risk of absorption through unbroken skin.
(C) Capable of causing cancer and/or heritable genetic damage.
(R) Suppliers recommended limit.
(S) Capable of causing occupational asthma.

The full text of the R, H & EUH phrases appearing in section 3 is:

H319 Causes serious eye irritation.

R36 Irritating to eyes.

The following sections have changed since the previous revision.

End of document

Your attention is drawn to the disclaimer on the Product Data Sheet which with this Safety Data Sheet and the package labelling comprise an integral information system about this product. Copies of the Product Data Sheet are available from International Paint on request or from our Internet sites : www.yachtpaint.com , www.international-marine.com, www.international-pc.com

Material Safety Data Sheet
INTERPLUS 356 ALUMINUM

Sales Order: {SalesOrd}

Bulk Sales Reference No.:	35601A
MSDS Revision Date:	03/11/2015
MSDS Revision Number:	B0-2

International

1. Identification of the preparation and company

1.1. Product identifier

Product Identity	INTERPLUS 356 ALUMINUM
Bulk Sales Reference No.	35601A

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended Use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	International Paint LLC 6001 Antoine Drive Houston Texas 77091

Emergency

CHEMTREC (USA)	(800) 424-9300
International Paint	(713) 682-1711
Poison Control Center	(800) 854-6813
Customer Service	
International Paint	(800) 589-1267
Fax No.	(800) 631-7481

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Flam. Liq. 3;H226	Flammable liquid and vapor.
Skin Irrit. 2;H315	Causes skin irritation.
Eye Irrit. 2;H319	Causes serious eye irritation.
Skin Sens. 1;H317	May cause an allergic skin reaction.
Aquatic Chronic 2;H411	Toxic to aquatic life with long lasting effects.

2.2. Label elements

Using the Toxicity Data listed in section 11 & 12 the product is labelled as follows.

Warning.

H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.

P260 Do not breathe mist / vapors / spray.

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P262 Do not get in eyes, on skin, or on clothing.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves / eye protection / face protection.

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302+352 IF ON SKIN: Wash with soap and water.

P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P331 Do NOT induce vomiting.

P333+313 If skin irritation or a rash occurs: Get medical advice/attention.

P337 If eye irritation persists:.

P362 Take off contaminated clothing and wash before reuse.

P363 Wash contaminated clothing before reuse.

P370 In case of fire: Use water spray, fog, or regular foam..

P391 Collect spillage.

P403+233 Store in a well ventilated place. Keep container tightly closed.

P501 Dispose of contents / container in accordance with local / national regulations.

HMIS Rating Health: 2* Flammability: 2 Reactivity: 0

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Talc (*non-asbestiform) CAS Number: 14807-96-6*	10 - 25	----	[1]
Nepheline syenite CAS Number: 0037244-96-5	10 - 25	----	[1]
Petroleum naphtha CAS Number: 0064742-95-6	1.0 - 10	Asp. Tox. 1;H304 Aquatic Chronic 2;H411 (Self Classification)	[1]
Aluminum CAS Number: 0007429-90-5	1.0 - 10	Water react. 2;H261 Pyr. Sol. 1;H250	[1][2]
Epoxy Resin CAS Number: 0025068-38-6	1.0 - 10	Eye Irrit. 2;H319 Skin Irrit. 2;H315 Skin Sens. 1;H317 Aquatic Chronic 2;H411	[1]
PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER CAS Number: 0028064-14-4	1.0 - 10	Skin Irrit. 2;H315 Eye Irrit. 2;H319 Skin Sens. 1;H317 Aquatic Chronic 2;H411	[1]
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. CAS Number: 0068609-97-2	1.0 - 10	Skin Irrit. 2;H315 Skin Sens. 1;H317	[1]
1,2,4-Trimethyl benzene CAS Number: 0000095-63-6	1.0 - 10	Flam. Liq. 3;H226 Acute Tox. 4;H332 Eye Irrit. 2;H319 STOT SE 3;H335 Skin Irrit. 2;H315 Aquatic Chronic	[1]

		2;H411	
Propylene glycol monomethyl ether CAS Number: 0000107-98-2	1.0 - 10	Flam. Liq. 3;H226 STOT SE 3;H336	[1][2]
1,3,5-Trimethylbenzene CAS Number: 0000108-67-8	1.0 - 10	Flam. Liq. 3;H226 STOT SE 3;H335 Aquatic Chronic 2;H411	[1]

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin	In case of contact, immediately flush skin with soap and plenty of water. Get medical attention immediately.
Ingestion	If swallowed, immediately contact Poison Control Center at 1-800-854-6813. DO NOT induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Overview	NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Avoid contact with eyes, skin and clothing.
Inhalation	Harmful if inhaled. Causes nose and throat irritation. Vapors may affect the brain or nervous system causing dizziness, headache or nausea.
Eyes	Causes severe eye irritation. Avoid contact with eyes.
Skin	Causes skin irritation. May cause allergic skin reaction. May be harmful if absorbed through the skin.
Ingestion	Harmful if swallowed. May cause abdominal pain, nausea, vomiting, diarrhea, or drowsiness.

Chronic effects

5. Fire-fighting measures

5.1. Extinguishing media

CAUTION: This product has a very low flashpoint. Use of water spray when fighting fire may be inefficient. CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective. SMALL FIRES: Use dry chemical, CO2, water spray or regular foam. LARGE FIRES: Use water spray, fog, or regular foam. Do not use straight streams. Move containers from fire area if you can do so without risk.

5.2. Special hazards arising from the substance or mixture

HIGHLY FLAMMABLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

ELIMINATE ALL IGNITION SOURCES (no smoking, flares, sparks or flames in immediate area). Use only non-sparking equipment to handle spilled material and absorbent. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to containers. Use non-sparking tools to collect absorbed material.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

CALL CHEMTREC at (800)-424-9300 for emergency response. Isolate spill or leak area immediately for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. LARGE SPILLS: Consider initial downwind evacuation for at least 300 meters (1000 feet).

7. Handling and storage

7.1. Precautions for safe handling

Handling

Vapors may cause flash fire or ignite explosively.

In Storage

Keep away from heat, sparks and flame.

7.2. Conditions for safe storage, including any incompatibilities

Store between 40-100F (4-38C).

Avoid contact with eyes, skin and clothing.

Strong oxidizing agents.

Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone.

7.3. Specific end use(s)

Close container after each use.

Wash thoroughly after handling.

Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000095-63-6	1,2,4-Trimethyl benzene	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	25 ppm TWA; 125 mg/m3 TWA
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0000107-98-2	Propylene glycol monomethyl ether	OSHA	150 ppm STEL; 540 mg/m3 STEL
		ACGIH	50 ppm TWA100 ppm STEL
		NIOSH	100 ppm TWA; 360 mg/m3 TWA150 ppm STEL; 540 mg/m3 STEL
		Supplier	No Established Limit
		OHSA, CAN	100 ppm TWA150 ppm STEL
		Mexico	No Established Limit
		Brazil	No Established Limit
0000108-67-8	1,3,5-Trimethylbenzene	OSHA	No Established Limit
		ACGIH	No Established Limit

		NIOSH	25 ppm TWA; 125 mg/m3 TWA
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0007429-90-5	Aluminum	OSHA	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
		ACGIH	1 mg/m3 TWA (respirable fraction)
		NIOSH	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)
		Supplier	No Established Limit
		OHSA, CAN	1 mg/m3 TWA (respirable)
		Mexico	10 mg/m3 TWA LMPE-PPT (dust)
		Brazil	No Established Limit
0025068-38-6	Epoxy Resin	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0028064-14-4	PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0037244-96-5	Nepheline syenite	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	10 mg/m3 TWA (total dust)
		Mexico	No Established Limit
		Brazil	No Established Limit
0064742-95-6	Petroleum naphtha	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0068609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
14807-96-6*	Talc (*non-asbestiform)	OSHA	No Established Limit
		ACGIH	No Established Limit

		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit

Health Data

CAS No.	Ingredient	Source	Value
0000095-63-6	1,2,4-Trimethyl benzene	NIOSH	No Established Limit
0000107-98-2	Propylene glycol monomethyl ether	NIOSH	Eye nose
0000108-67-8	1,3,5-Trimethylbenzene	NIOSH	No Established Limit
0007429-90-5	Aluminum	NIOSH	Lung changes that may lead to pulmonary fibrosis; respiratory and skin irritation
0025068-38-6	Epoxy Resin	NIOSH	No Established Limit
0028064-14-4	PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER	NIOSH	No Established Limit
0037244-96-5	Nepheline syenite	NIOSH	No Established Limit
0064742-95-6	Petroleum naphtha	NIOSH	No Established Limit
0068609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	NIOSH	No Established Limit
14807-96-6*	Talc (*non-asbestiform)	NIOSH	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000095-63-6	1,2,4-Trimethyl benzene	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000107-98-2	Propylene glycol monomethyl ether	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000108-67-8	1,3,5-Trimethylbenzene	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007429-90-5	Aluminum	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0025068-38-6	Epoxy Resin	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0028064-14-4	PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0037244-96-5	Nepheline syenite	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0064742-95-6	Petroleum naphtha	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0068609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No

		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
14807-96-6*	Talc (*non-asbestiform)	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory	Select equipment to provide protection from the ingredients listed in Section 3 of this document. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates dust, vapor, or mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. FOR USERS OF 3M RESPIRATORY PROTECTION ONLY: For information and assistance on 3M occupational health and safety products, call OH&ESD Technical Service toll free in U.S.A. 1-800-243-4630, in Canada call 1-800-267-4414. Please do not contact these numbers regarding other manufacturer's respiratory protection products. 3M does not endorse the accuracy of the information contained in this Material Safety Data Sheet.
Eyes	Avoid contact with eyes. Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 3 of this document. Depending on the site-specific conditions of use, safety glasses, chemical goggles, and/or head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Skin	Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 3 of this document. Depending on the site-specific conditions of use, protective gloves, apron, boots, head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Engineering Controls	Depending on the site-specific conditions of use, provide adequate ventilation.
Other Work Practices	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, using toilet facilities, etc. Promptly remove soiled clothing and wash clothing thoroughly before reuse. Shower after work using plenty of soap and water.

9. Physical and chemical properties

Appearance	Coloured Liquid
Odour threshold	Not Measured
pH	No Established Limit
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	117 (C) 243 (F)
Flash Point	44 (C) 111 (F)
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: 1 Upper Explosive Limit: No Established Limit
vapor pressure (Pa)	Not Measured
Vapor Density	Heavier than air
Specific Gravity	1.71
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	No Established Limit Not Measured
VOC %	Refer to the Technical Data Sheet or label where information is available.

9.2. Other information

No further information

10. Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

This product is stable and hazardous polymerization will not occur. Not sensitive to mechanical impact. Excessive heat and fumes generation can occur if improperly handled.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

HIGHLY FLAMMABLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.

11. Toxicological information

Acute toxicity

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Talc (*non-asbestiform) - (14807-96-6*)	No data available	No data available	No data available	No data available
Nepheline syenite - (37244-96-5)	No data available	No data available	No data available	No data available
Petroleum naphtha - (64742-95-6)	6,800.00, Rat - Category: NA	3,400.00, Rabbit - Category: 5	No data available	No data available
Aluminum - (7429-90-5)	No data available	No data available	No data available	No data available
Epoxy Resin - (25068-38-6)	2,000.00, Rat - Category: 4	2,000.00, Rabbit - Category: 4	No data available	No data available
PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER - (28064-14-4)	2,000.00, Rat - Category: 4	No data available	No data available	No data available
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. - (68609-97-2)	No data available	No data available	No data available	No data available
1,2,4-Trimethyl benzene - (95-63-6)	3,400.00, Rat - Category: 5	3,160.00, Rabbit - Category: 5	18.00, Rat - Category: 4	No data available
Propylene glycol monomethyl ether - (107-98-2)	5,000.00, Rat - Category: 5	13,000.00, Rabbit - Category: NA	No data available	No data available
1,3,5-Trimethylbenzene - (108-67-8)	No data available	No data available	24.00, Rat - Category: NA	No data available

Item	Category	Hazard
Acute Toxicity (mouth)	Not Classified	Not Applicable
Acute Toxicity (skin)	Not Classified	Not Applicable
Acute Toxicity (inhalation)	Not Classified	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.

Eye damage/irritation	2	Causes serious eye irritation.
Sensitization (respiratory)	Not Classified	Not Applicable
Sensitization (skin)	1	May cause an allergic skin reaction.
Germ toxicity	Not Classified	Not Applicable
Carcinogenicity	Not Classified	Not Applicable
Reproductive Toxicity	Not Classified	Not Applicable
Specific target organ systemic toxicity (single exposure)	Not Classified	Not Applicable
Specific target organ systemic Toxicity (repeated exposure)	Not Classified	Not Applicable
Aspiration hazard	Not Classified	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Talc (*non-asbestiform) - (14807-96-6*)	Not Available	Not Available	Not Available
Nepheline syenite - (37244-96-5)	Not Available	Not Available	Not Available
Petroleum naphtha - (64742-95-6)	9.22, Oncorhynchus mykiss	6.14, Daphnia magna	19.00 (72 hr), Selenastrum capricornutum
Aluminum - (7429-90-5)	0.12, Oncorhynchus mykiss	3.50, Daphnia magna	Not Available
Epoxy Resin - (25068-38-6)	3.10, Pimephales promelas	1.40, Daphnia magna	Not Available
PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER - (28064-14-4)	9.00, Oncorhynchus mykiss	9.00, Daphnia magna	Not Available
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. - (68609-97-2)	Not Available	Not Available	Not Available
1,2,4-Trimethyl benzene - (95-63-6)	7.72, Pimephales promelas	3.60, Daphnia magna	Not Available
Propylene glycol monomethyl ether - (107-98-2)	1,000.00, Oncorhynchus mykiss	500.00, Daphnia magna	1,000.00 (96 hr), Selenastrum capricornutum
1,3,5-Trimethylbenzene - (108-67-8)	12.52, Carassius auratus	6.00, Daphnia magna	25.00 (48 hr), Scenedesmus subspicatus

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

13. Disposal considerations

13.1. Waste treatment methods

Do not allow spills to enter drains or watercourses.

Dispose of in accordance with local, state and federal regulations. (Also reference RCRA information in Section 15 if listed).

14. Transport information

14.1. UN number: UN 1263

14.2. UN proper shipping name: PAINT

14.3. Transport hazard class(es)

DOT (Domestic Surface Transportation)		IMO / IMDG (Ocean Transportation)	
DOT Proper Shipping Name	PAINT	IMDG Proper Shipping Name	PAINT
DOT Hazard Class	3	IMDG Hazard Class Sub Class	3 3
UN / NA Number	UN 1263		
DOT Packing Group	III	IMDG Packing Group	III
CERCLA/DOT RQ	2510 gal. / 35842 lbs.	System Reference Code	1

14.4. Packing group: III

14.5. Environmental hazards

IMDG: Marine Pollutant: Yes (Petroleum naphtha)

14.6. Special precautions for user

Not Applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview: The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification: B3 D2B

DOT Marine Pollutants (10%):
(No Product Ingredients Listed)

DOT Severe Marine Pollutants (1%):
(No Product Ingredients Listed)

EPCRA 311/312 Chemicals and RQs (>.1%) :

- Cumene (5000 lb final RQ; 2270 kg final RQ)
- Butanol (5000 lb final RQ; 2270 kg final RQ)
- Xylenes (o-, m-, p- isomers) (100 lb final RQ; 45.4 kg final RQ)

EPCRA 302 Extremely Hazardous (>.1%) :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals (>.1%) :

- 1,2,4-Trimethyl benzene
- Aluminum
- Cumene
- Butanol
- Xylenes (o-, m-, p- isomers)

Mass RTK Substances (>1%) :

- 1,2,4-Trimethyl benzene
- Aluminum

Propylene glycol monomethyl ether
1,3,5-Trimethylbenzene

Penn RTK Substances (>1%) :
1,2,4-Trimethyl benzene
Aluminum
Propylene glycol monomethyl ether

Penn Special Hazardous Substances (>.01%) :
(No Product Ingredients Listed)

RCRA Status:
(No Product Ingredients Listed)

N.J. RTK Substances (>1%) :
1,2,4-Trimethyl benzene
Aluminum
Propylene glycol monomethyl ether

N.J. Special Hazardous Substances (>.01%) :
Aluminum
Cumene
Butanol
Propylene glycol monomethyl ether
Quartz
Xylenes (o-, m-, p- isomers)

N.J. Env. Hazardous Substances (>.1%) :
1,2,4-Trimethyl benzene
Aluminum
Cumene
Butanol
Xylenes (o-, m-, p- isomers)

Proposition 65 - Carcinogens (>0%):
Cumene
Benzene, ethyl-
Formaldehyde
Naphthalene
Quartz

Proposition 65 - Female Repro Toxins (>0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0%):
(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0%):
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H226 Flammable liquid and vapor.
H250 Catches fire spontaneously if exposed to air.
H261 In contact with water releases flammable gas.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

The following sections have changed since the previous revision.

End of Document

Material Safety Data Sheet
INTERPLUS 356 PART B

Sales Order: {SalesOrd}

Bulk Sales Reference No.:	EPA357
MSDS Revision Date:	10/21/2014
MSDS Revision Number:	A0-2

International.

1. Identification of the preparation and company

1.1. Product identifier

Product Identity	INTERPLUS 356 PART B
Bulk Sales Reference No.	EPA357

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended Use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	International Paint LLC 6001 Antoine Drive Houston Texas 77091

Emergency	
CHEMTREC (USA)	(800) 424-9300
International Paint	(713) 682-1711
Poison Control Center	(800) 854-6813
Customer Service	
International Paint	(800) 589-1267
Fax No.	(800) 631-7481

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Flam. Liq. 3;H226	Flammable liquid and vapor.
Acute Tox. 5;H313	May be harmful in contact with skin.
Skin Irrit. 2;H315	Causes skin irritation.
Eye Dam. 1;H318	Causes serious eye damage.
Aquatic Acute 2;H401	Toxic to aquatic life.

2.2. Label elements

Using the Toxicity Data listed in section 11 & 12 the product is labelled as follows.

Danger.

H226 Flammable liquid and vapor.
H313 May be harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H401 Toxic to aquatic life.

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves / eye protection / face protection.

P302+352 IF ON SKIN: Wash with soap and water.

P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P312 Call a POISON CENTER or doctor / physician if you feel unwell.

P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P362 Take off contaminated clothing and wash before reuse.

P370 In case of fire: Use water spray, fog, or regular foam..

P403+233 Store in a well ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents / container in accordance with local / national regulations.

HMIS Rating Health: 2* Flammability: 3 Reactivity: 0

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Xylenes (o-, m-, p- isomers) CAS Number: 0001330-20-7	25 - 50	Flam. Liq. 3;H226 Acute Tox. 4;H332 Acute Tox. 4;H312 Skin Irrit. 2;H315 Eye Irrit. 2;H319 STOT SE 3;H335 Asp. Tox. 1;H304	[1][2]
Butanol CAS Number: 0000071-36-3	1.0 - 10	Flam. Liq. 3;H226 Acute Tox. 4;H302 STOT SE 3;H335 Skin Irrit. 2;H315 Eye Dam. 1;H318 STOT SE 3;H336	[1][2]
2,4,6-Tri(dimethylaminomethyl)phenol CAS Number: 0000090-72-2	1.0 - 10	Acute Tox. 4;H302 Eye Irrit. 2;H319 Skin Irrit. 2;H315	[1]

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin	In case of contact, immediately flush skin with soap and plenty of water. Get medical attention immediately.
Ingestion	If swallowed, immediately contact Poison Control Center at 1-800-854-6813. DO NOT

induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Overview	NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Avoid contact with eyes, skin and clothing.
Inhalation	Harmful if inhaled. May cause allergic respiratory reaction. May cause mucous membrane and respiratory tract irritation, tightness of chest, headache, shortness of breath and dry cough. May cause asthma-like symptoms to occur. Vapors may affect the brain or nervous system causing dizziness, headache or nausea.
Eyes	Causes severe eye irritation. Avoid contact with eyes.
Skin	Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion	Harmful if swallowed. May cause abdominal pain, nausea, vomiting, diarrhea, or drowsiness.
Chronic effects	

5. Fire-fighting measures

5.1. Extinguishing media

CAUTION: This product has a very low flashpoint. Use of water spray when fighting fire may be inefficient. CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective. SMALL FIRES: Use dry chemical, CO2, water spray or regular foam. LARGE FIRES: Use water spray, fog, or regular foam. Do not use straight streams. Move containers from fire area if you can do so without risk.

5.2. Special hazards arising from the substance or mixture

HIGHLY FLAMMABLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

ERG Guide No. 128

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

ELIMINATE ALL IGNITION SOURCES (no smoking, flares, sparks or flames in immediate area). Use only non-sparking equipment to handle spilled material and absorbent. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to containers. Use non-sparking tools to collect absorbed material.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

CALL CHEMTREC at (800)-424-9300 for emergency response. Isolate spill or leak area immediately for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. LARGE SPILLS: Consider initial downwind evacuation for at least 300 meters (1000 feet).

7. Handling and storage

7.1. Precautions for safe handling

Handling

Vapors may cause flash fire or ignite explosively.

In Storage

Keep away from heat, sparks and flame.

7.2. Conditions for safe storage, including any incompatibilities

Store between 40-100F (4-38C).

Do not get in eyes, on skin or clothing.

Strong oxidizing agents.

Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone.

7.3. Specific end use(s)

Close container after each use.

Wash thoroughly after handling.

Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000071-36-3	Butanol	OSHA	100 ppm TWA; 300 mg/m3 TWA50 ppm Ceiling; 150 mg/m3 Ceiling
		ACGIH	20 ppm TWA
		NIOSH	50 ppm Ceiling; 150 mg/m3 Ceiling1400 ppm IDLH (10% LEL)
		Supplier	No Established Limit
		OHSA, CAN	20 ppm TWA
		Mexico	No Established Limit
		Brazil	40 ppm TWA LT; 115 mg/m3 TWA LT
0000090-72-2	2,4,6-Tri(dimethylaminomethyl)phenol	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0001330-20-7	Xylenes (o-, m-, p- isomers)	OSHA	100 ppm TWA; 435 mg/m3 TWA150 ppm STEL; 655 mg/m3 STEL
		ACGIH	100 ppm TWA150 ppm STEL
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	100 ppm TWA150 ppm STEL
		Mexico	100 ppm TWA LMPE-PPT; 435 mg/m3 TWA LMPE-PPT150 ppm STEL [LMPE-CT]; 655 mg/m3 STEL [LMPE-CT]
		Brazil	78 ppm TWA LT; 340 mg/m3 TWA LT

Health Data

CAS No.	Ingredient	Source	Value
0000071-36-3	Butanol	NIOSH	Eye and mucous membrane irritation CNS depression
0000090-72-2	2,4,6-Tri(dimethylaminomethyl)phenol	NIOSH	No Established Limit
0001330-20-7	Xylenes (o-, m-, p- isomers)	NIOSH	Central nervous system depressant; respiratory and eye irritation

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000071-36-3	Butanol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	

			Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000090-72-2	2,4,6-Tri(dimethylaminomethyl)phenol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0001330-20-7	Xylenes (o-, m-, p- isomers)	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No;

8.2. Exposure controls

Respiratory	Select equipment to provide protection from the ingredients listed in Section 3 of this document. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates dust, vapor, or mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. FOR USERS OF 3M RESPIRATORY PROTECTION ONLY: For information and assistance on 3M occupational health and safety products, call OH&ESD Technical Service toll free in U.S.A. 1-800-243-4630, in Canada call 1-800-267-4414. Please do not contact these numbers regarding other manufacturer's respiratory protection products. 3M does not endorse the accuracy of the information contained in this Material Safety Data Sheet.
Eyes	Avoid contact with eyes. Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 3 of this document. Depending on the site-specific conditions of use, safety glasses, chemical goggles, and/or head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Skin	Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 3 of this document. Depending on the site-specific conditions of use, protective gloves, apron, boots, head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Engineering Controls	Depending on the site-specific conditions of use, provide adequate ventilation.
Other Work Practices	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, using toilet facilities, etc. Promptly remove soiled clothing and wash clothing thoroughly before reuse. Shower after work using plenty of soap and water.

9. Physical and chemical properties

Appearance	Coloured Liquid
Odour threshold	Not Measured
pH	No Established Limit
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	137 (C) 279 (F)
Flash Point	28 (C) 82 (F)
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: 1 Upper Explosive Limit: No Established Limit
vapor pressure (Pa)	Not Measured
Vapor Density	Heavier than air
Specific Gravity	0.98
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	No Established Limit Not Measured
VOC %	Refer to the Technical Data Sheet or label where information is

available.

9.2. Other information

No further information

10. Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

This product is stable and hazardous polymerization will not occur. Not sensitive to mechanical impact. Excessive heat and fumes generation can occur if improperly handled.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

HIGHLY FLAMMABLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.

11. Toxicological information

Acute toxicity

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Xylenes (o-, m-, p- isomers) - (1330-20-7)	4,299.00, Rat - Category: 5	1,548.00, Rabbit - Category: 4	20.00, Rat - Category: 4	No data available
Butanol - (71-36-3)	2,292.00, Rat - Category: 5	3,430.00, Rabbit - Category: 5	No data available	No data available
2,4,6-Tri(dimethylaminomethyl)phenol - (90-72-2)	1,200.00, Rat - Category: 4	1,280.00, Rat - Category: 4	No data available	No data available

Item	Category	Hazard
Acute Toxicity (mouth)	Not Classified	Not Applicable
Acute Toxicity (skin)	5	May be harmful in contact with skin.
Acute Toxicity (inhalation)	Not Classified	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Eye damage/irritation	1	Causes serious eye damage.
Sensitization (respiratory)	Not Classified	Not Applicable
Sensitization (skin)	Not Classified	Not Applicable
Germ toxicity	Not Classified	Not Applicable
Carcinogenicity	Not Classified	Not Applicable
Reproductive Toxicity	Not Classified	Not Applicable
Specific target organ systemic toxicity (single exposure)	Not Classified	Not Applicable
Specific target organ systemic Toxicity (repeated exposure)	Not Classified	Not Applicable
Aspiration hazard	Not Classified	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Xylenes (o-, m-, p- isomers) - (1330-20-7)	3.30, Oncorhynchus mykiss	8.50, Palaemonetes pugio	100.00 (72 hr), Chlorococcales
Butanol - (71-36-3)	1,376.00, Pimephales promelas	1,328.00, Daphnia magna	500.00 (96 hr), Scenedesmus subspicatus
2,4,6-Tri(dimethylaminomethyl)phenol - (90-72-2)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

13. Disposal considerations

13.1. Waste treatment methods

Do not allow spills to enter drains or watercourses.

Dispose of in accordance with local, state and federal regulations. (Also reference RCRA information in Section 15 if listed).

14. Transport information

14.1. UN number UN 1263

14.2. UN proper shipping name PAINT

14.3. Transport hazard class(es)

DOT (Domestic Surface Transportation)

DOT Proper Shipping Name	PAINT
DOT Hazard Class	3
UN / NA Number	UN 1263
DOT Packing Group	III
CERCLA/DOT RQ	41 gal. / 338 lbs.

IMO / IMDG (Ocean Transportation)

IMDG Proper Shipping Name	PAINT
IMDG Hazard Class	3
Sub Class	3
IMDG Packing Group	III
System Reference Code	2

14.4. Packing group III

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

Not Applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification B2 D2B E

DOT Marine Pollutants (10%):
(No Product Ingredients Listed)

DOT Severe Marine Pollutants (1%):
(No Product Ingredients Listed)

EPCRA 311/312 Chemicals and RQs (>.1%) :

Butanol (5000 lb final RQ; 2270 kg final RQ)

Xylenes (o-, m-, p- isomers) (100 lb final RQ; 45.4 kg final RQ)

EPCRA 302 Extremely Hazardous (>.1%) :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals (>.1%) :

Butanol

Xylenes (o-, m-, p- isomers)

Mass RTK Substances (>1%) :

Butanol

Xylenes (o-, m-, p- isomers)

Penn RTK Substances (>1%) :

Butanol

Xylenes (o-, m-, p- isomers)

Penn Special Hazardous Substances (>.01%) :
(No Product Ingredients Listed)

RCRA Status:
(No Product Ingredients Listed)

N.J. RTK Substances (>1%) :

Butanol

Xylenes (o-, m-, p- isomers)

N.J. Special Hazardous Substances (>.01%) :

Butanol

Xylenes (o-, m-, p- isomers)

N.J. Env. Hazardous Substances (>.1%) :

Butanol

Xylenes (o-, m-, p- isomers)

Proposition 65 - Carcinogens (>0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0%):
(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0%):
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health

and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H372 Causes damage to organs through prolonged or repeated exposure.

This is the first revision of this SDS format, changes from previous revision not applicable.

End of Document

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

1. Identification of the preparation and company

Preparation/Product Name	INTERTHANE 990 LIGHT GREY PART A
Product Code	PHZ675
HSE Number	
Intended use	See Technical Data Sheet. For professional use only.
Application Method	See Technical Data Sheet.
Company Name	International Paint Stoneygate Lane Felling Gateshead Tyne and Wear NE10 OJY UK
Telephone No.	+44 (0)191 469 6111
Fax No.	+44 (0)191 438 3711
24 hour Emergency Telephone No.	+44 (0)191 469 6111
Official Advisory Body Telephone No.	+44 (0)870 600 6266 For Advice to Doctors & Hospitals only

2. Composition/information on ingredients

This product contains the following substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EEC and the Chemicals (Hazard Information and Packaging for Supply) Regulations 1999 (2) or have occupational exposure limits detailed in EH40.

Ingredient	EINECS	Concentration	Symbol(s)	Risk phrases (*)
1,2,4-trimethylbenzene	202-436-9	2.5 - < 10	Xn,N	R10,R20,R36/37/38,R51-53
1,3,5-trimethylbenzene	203-604-4	1 - < 2.5	Xi,N	R10, R37, R51-53
1-Methoxy-2-propyl acetate	203-603-9	2.5 - < 10	Xi	R10, R36
Ethylbenzene	202-849-4	1 - < 2.5	F,Xn	R11, R20
Solvent naphtha (petroleum), light aromatic	265-199-0	10 - < 25	Xn,N	R51-53, R65
Xylene	215-535-7	10 - < 25	Xn	R10,R20/21,R38

* The full texts of the phrases are shown in section 16.

3. Hazard identification of the product

Flammable.

Harmful by inhalation.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Further information is given in section 11.

4. First aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eye Contact

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Skin Contact

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

5. Fire-fighting measures

Recommended extinguishing media; alcohol resistant foam, CO^2. powder, water spray.

Do not use; water jet.

Note; Fire will produce dense black smoke. Decomposition products may be hazardous to health. Avoid exposure and use breathing apparatus as appropriate.

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

6. Accidental release measures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

7. Handling and storage

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

In Use

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

All sources of ignition (hot surfaces, sparks, open flames etc) should be excluded from areas of preparation and application. All electrical equipment (including torches) should be protected (Ex) to the appropriate standard.

The product may charge electrostatically. Always use earthing leads when pouring solvents and transferring product. Operators should wear clothing which does not generate static (at least 60% natural fibre) and antistatic footwear; floors should be of conducting type.

Activities such as sanding, burning off etc. of paint films may generate dust and/or fumes hazardous to the skin and lungs. Work in well ventilated areas. Use local exhaust ventilation and personal skin and respiratory protective equipment as appropriate.

Storage

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

8. Exposure controls and personal protection

Engineering Measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Exposure Limits

The following occupational exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr time weighted average)		
	ppm	mg/m³	ppm	mg/m³	
1,2,4-trimethylbenzene			25	125	S
1,3,5-trimethylbenzene			25	125	S
1-Methoxy-2-propyl acetate	100	548	50	274	S +
Ethylbenzene	125	552	100	441	S +
Xylene	100	441	50	220	S +

(M) Maximum Exposure Limit
(S) Occupational Exposure Standard
(R) Suppliers Recommended Limit
(+) There is a risk of absorption through unbroken skin.

Personal Protection

Respiratory Protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators. When spraying this product use a respiratory mask with charcoal and dust filters (as filter combination A2-P2). In confined spaces use compressed air or fresh air respiratory equipment.

Eye Protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should comply with British Standard 2092.

Hand Protection

Nitrile rubber gloves should be worn during mixing and application.

Skin Protection

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

9. Physical and chemical properties

Physical State	Liquid
Flash Point (deg C)	34
Viscosity (cSt)	224
Specific Gravity	1.2
Vapour Density	Heavier than air.
Lower Explosive Limit	0.8
Solubility in Water	Immiscible
R.A.Q. to ventilate to 10% of the LEL (m^3/l)	109

10. Stability and reactivity

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

11. Toxicological information

There are no data available on the product itself.

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

12. Ecological information

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is classified for eco-toxicological properties accordingly. See Sections 2 and 15 for details

13. Disposal considerations

Do not allow into drains or water courses. Wastes and empty containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

European Waste Catalogue Number

08 01 11 Waste paint and varnish containing organic solvents or other dangerous substances

14. Transport information

Transport only in accordance with the following regulations:

ADR/RID UN1263 Paint, 3, III

IMDG	Class	3	Subsidiary Class
	Proper Shipping Name	Paint	
	UN No	1263	
	Ems	F-E,S-E	
	Packaging Group	III	
	Marine Pollutant	Yes	
ICAO/IATA	Shipping Name	Paint	
	Class	3	
	UN No	1263	
	Packaging Group	III	

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

15. Regulatory information

In accordance with EC Directive 88/379/EEC and the Chemicals (Hazard Information and Packaging for Supply) Regulations SI /3247/1994 this product is labelled as follows:

Symbol(s)

Harmful

Contains;

R. Phrases;

Flammable.

Harmful by inhalation.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S. Phrases;

Do not breathe vapour/spray.

Avoid contact with skin.

Wear eye/face protection.

Use only in well-ventilated areas.

P. Phrases;

Safety Data Sheet

PHZ675

INTERTHANE 990 LIGHT GREY PART A

Version No. 3 **Date Last Revised** 09/06/05

16. Other information

The information on this MSDS is based upon the present state of our knowledge and on current EEC and national laws.

The product should not be used for purposes other than shown in the product data sheet without first obtaining written advice.

It is always the responsibility of the user to take all necessary steps to meet the demands of applicable legislation.

The information in this Health & Safety Data Sheet is required pursuant to Directive 91/155/EEC and the Chemicals (Hazard Information & Packaging for Supply) Regulations 1994.

The full text of the R phrases appearing in section 2 is:

R10 Flammable.

R11 Highly flammable.

R20 Harmful by inhalation.

R20/21 Harmful by inhalation and in contact with skin.

R36 Irritating to eyes.

R36/37/38 Irritating to eyes, respiratory system and skin.

R37 Irritating to respiratory system.

R38 Irritating to skin.

R51-53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 Harmful: May cause lung damage if swallowed.

Safety Data Sheet

EAF684

INTERZONE 954 SURF GREY PART A

Version No: 1 **Revision Date:** 24/09/02

1. Identification of the preparation and company

Preparation/Product Name	INTERZONE 954 SURF GREY PART A
Product Code	EAF684
HSE Number	
Intended use	See Technical Data Sheet. For professional use only.
Application Method	See Technical Data Sheet.
Company Name	International Paint Stoneygate Lane Felling Gateshead Tyne and Wear NE10 OJY UK
Telephone No.	+44 (0)191 469 6111
Fax No.	+44 (0)191 438 3711
24 hour Emergency Telephone No.	+44 (0)191 469 6111
Official Advisory Body Telephone No.	+44 (0)870 600 6266 For Advice to Doctors & Hospitals only

2. Composition/information on ingredients

This product contains the following substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EEC and the Chemicals (Hazard Information and Packaging for Supply) Regulations 1999 (2) or have occupational exposure limits detailed in EH40.

Ingredient	EINECS	Concentration Label	Symbol(s)	Risk phrases (*)
3-Glycidyloxypropyl-trimethoxysilane	-	01-02.5	n	R22,R36,R43
4-methylpentan-2-one	203-550-1	01-02.5	n	R20,R36/37,R66
Epoxy resin (av.mol.wt. 700)	500-033-5	10-25	i,N	R36/38, R43, R51-53
ylene	215-535-7	10-25	n	R20/21, R38

The full texts of the phrases are shown in section 16.

Safety Data Sheet

EAF684

INTERZONE 954 SURF GREY PART A

Version No: 1 **Revision Date:** 24/09/02

3. Hazard identification of the product

Flammable.
Irritating to eyes and skin.
May cause sensitisation by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Further information is given in section 11.

4. First aid measures

General
In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation
Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eye Contact
Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Skin Contact
Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion
If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. Fire-fighting measures

Recommended extinguishing media; alcohol resistant foam, CO . powder, water spray.

Do not use; water jet.

Note; Fire will produce dense black smoke. Decomposition products may be hazardous to health. Avoid exposure and use breathing apparatus as appropriate.

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

6. Accidental release measures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmetal Protection Agency should also be informed.

7. Handling and storage

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

In Use

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

All sources of ignition (hot surfaces, sparks, open flames etc) should be excluded from areas of preparation and application. All electrical equipment (including torches) should be protected (Ex) to the appropriate standard.

The product may charge electrostatically. Always use earthing leads when pouring solvents and transferring product. Operators should wear clothing which does not generate static (at least 60% natural fibre) and antistatic footwear; floors should be of conducting type.

Good housekeeping standards and regular safe removal of waste materials will minimise the risks of spontaneous combustion and other fire hazards.

Storage

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

The requirements of the Highly Flammable Liquids and Liquified Petroleum Gases Regulations apply if the flashpoint is between 21°C and 32°C.

8. Exposure controls and personal protection

Engineering Measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Exposure Limits

The following occupational exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr time weighted average)		
	ppm	mg/m³	ppm	mg/m³	
4-methylpentan-2-one	100	416	50	208	S +
ylene	100	441	50	220	S +

(M) Maximum Exposure Limit
(S) Occupational Exposure Standard
(R) Suppliers Recommended Limit
(+) There is a risk of absorption through unbroken skin.

Personal Protection

Respiratory Protection

When concentrations exceed the exposure limits shown above workers must wear appropriate respirators approved in accordance with Directive 89/656/EEC and the Personal Protection Equipment Regulations.

Eye Protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should comply with British Standard 2092.

Hand Protection

Nitrile rubber gloves should be worn during mixing and application.

Skin Protection

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Safety Data Sheet

EAF684

INTERZONE 954 SURF GREY PART A

Version No: 1 **Revision Date:** 24/09/02

9. Physical and chemical properties

Physical State	Liquid
Flash Point (deg C)	30
Viscosity (cSt)	-
Specific Gravity	1.775
Vapour Density	Heavier than air.
Lower Explosive Limit	0.6
Solubility in Water	Immiscible
R.A.Q. to ventilate to 10% of the LEL (m ³/l)	72

10. Stability and reactivity

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

11. Toxicological information

There are no data available on the product itself.

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Based on the properties of the epoxy constituents and considering toxicological data on similar preparations this preparation may be an irritant and a skin and respiratory sensitiser. Low molecular weight epoxy constituents are irritating to eyes, mucousmembranes and skin. Repeated skin contact may lead to irritation and sensitisation, possibly with cross-sensitisation to other epoxies.

Safety Data Sheet

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INTERZONE 954 SURF GREY PART A

Version No: 1 **Revision Date:** 24/09/02

12. Ecological information

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

13. Disposal considerations

Do not allow into drains or water courses. Wastes and empty containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

Transport only in accordance with the follwing regulations:

ADR/RID	1263 Paint, 3, III, ADR		
IMDG	Class/Div	3	Subsidiary Class
	Proper Shipping Name	Paint	
	UN No	1263	MFAG
	Ems	3-05	
	Packaging Group	III	
	Marine Pollutant	No	
ICAO/IATA	Shipping Name	Paint	
	Class	3	
	UN No	1263	
	Packaging Group	III	

Safety Data Sheet

EAF684

INTERZONE 954 SURF GREY PART A

Version No: 1 **Revision Date:** 24/09/02

15. Regulatory information

In accordance with EC Directive 88/379/EEC and the Chemicals (Hazard Information and Packaging for Supply) Regulations SI /3247/1994 this product is labelled as follows:

Symbol(s)

Irritant

Contains;

3-Glycidyloxypropyl-trimethoxysilane

Epoxy resin (av.mol.wt. 700)

R. Phrases;

Flammable.

Irritating to eyes and skin.

May cause sensitisation by skin contact.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S. Phrases;

Do not breathe vapour/spray.

Avoid contact with skin.

Wear suitable gloves.

Use only in well-ventilated areas.

P. Phrases;

Contains epoxy constituents. See information supplied by the manufacturer.

Safety Data Sheet

EAF684

INTERZONE 954 SURF GREY PART A

Version No: 1 **Revision Date:** 24/09/02

16. Other information

The information on this MSDS is based upon the present state of our knowledge and on current EEC and national laws.

The product should not be used for purposes other than shown in the product data sheet without first obtaining written advice.

It is always the responsibility of the user to take all necessary steps to meet the demands of applicable legislation.

The information in this Health & Safety Data Sheet is required purusant to Directive 91/155/EEC and the Chemicals (Hazard Information & Packaging for Supply) Regulations 1994.

The full text of the R phrases appearing in section 2 is:

R20 Harmful by inhalation.

R20/21 Harmful by inhalation and in contact with skin.

R22 Harmful if swallowed.

R36 Irritating to eyes.

R36/37 Irritating to eyes and respiratory system.

R36/38 Irritating to eyes and skin.

R38 Irritating to skin.

R43 May cause sensitisation by skin contact.

R51-53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R66 Repeated exposure may cause skin dryness or cracking

Material Safety Data Sheet
INTERZONE 954 COMPONENTE B

Sales Order: {SalesOrd}

Bulk Sales Reference No.:	EAA964
MSDS Revision Date:	10/25/2013
MSDS Revision Number:	A4-2

International.

1. Identification of the preparation and company

1.1. Product identifier

Product Identity	INTERZONE 954 COMPONENTE B
Bulk Sales Reference No.	EAA964

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended Use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	International Paint LLC 6001 Antoine Drive Houston Texas 77091

Emergency	
CHEMTREC (USA)	(800) 424-9300
International Paint	(713) 682-1711
Poison Control Center	(800) 854-6813
Customer Service	
International Paint	(800) 589-1267
Fax No.	(800) 631-7481

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Flam. Liq. 3;H226	Flammable liquid and vapor.
Acute Tox. 4;H302	Harmful if swallowed.
Acute Tox. 5;H313	May be harmful in contact with skin.
Acute Tox. 3;H331	Toxic if inhaled.
Skin Corr. 1B;H314	Causes severe skin burns and eye damage.
Eye Dam. 1;H318	Causes serious eye damage.
Skin Sens. 1;H317	May cause an allergic skin reaction.
Aquatic Acute 1;H400	Very toxic to aquatic life.
Aquatic Chronic 3;H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements

Using the Toxicity Data listed in section 11 & 12 the product is labelled as follows.

Danger.

H226 Flammable liquid and vapor.
H302 Harmful if swallowed.

H313 May be harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.
P260 Do not breathe mist / vapors / spray.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.
P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+352 IF ON SKIN: Wash with soap and water.
P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P310 Immediately call a POISON CENTER or doctor / physician.
P311 Call a POISON CENTER or doctor / physician.
P312 Call a POISON CENTER or doctor / physician if you feel unwell.
P333+313 If skin irritation or a rash occurs: Get medical advice/attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P363 Wash contaminated clothing before reuse.
P370 In case of fire: Use water spray, fog, or regular foam..
P391 Collect spillage.
P403+233 Store in a well ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents / container in accordance with local / national regulations.

HMIS Rating Health: 3 Flammability: 2 Reactivity: 0

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Benzyl alcohol CAS Number: 0000100-51-6	10 - 25	Acute Tox. 4;H332 Acute Tox. 4;H302	[1]
Isophorone diamine CAS Number: 0002855-13-2	10 - 25	Acute Tox. 4;H312 Acute Tox. 4;H302 Skin Corr. 1B;H314 Skin Sens. 1;H317 Aquatic Chronic 3;H412	[1]
m-Xylene-alpha, alpha'-diamine CAS Number: 0001477-55-0	10 - 25	Acute Tox. 4;H302 Acute Tox. 3;H331 Skin Corr. 1;H314 Skin Sens. 1;H317 Aquatic Chronic 3;H412	[1][2]
Amines, N-tallow alkyltrimethylenedi-, oleates CAS Number: 0061791-53-5	1.0 - 10	Aquatic Acute 1;H400	[1]
2,4,6-Tri(dimethylaminomethyl)phenol CAS Number: 0000090-72-2	1.0 - 10	Acute Tox. 4;H302 Eye Irrit. 2;H319 Skin Irrit. 2;H315	[1]

Methylisobutyl ketone CAS Number: 0000108-10-1	1.0 - 10	Flam. Liq. 2;H225 Acute Tox. 4;H332 Eye Irrit. 2;H319 STOT SE 3;H335	[1][2]

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin	In case of contact, immediately flush skin with soap and plenty of water. Get medical attention immediately.
Ingestion	If swallowed, immediately contact Poison Control Center at 1-800-854-6813. DO NOT induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Overview	NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Avoid contact with eyes, skin and clothing.
Inhalation	Harmful if inhaled. Causes nose and throat irritation. Vapors may affect the brain or nervous system causing dizziness, headache or nausea.
Eyes	Causes severe eye irritation. Avoid contact with eyes.
Skin	Causes skin irritation. May cause allergic skin reaction. May be harmful if absorbed through the skin.
Ingestion	Harmful if swallowed. May cause abdominal pain, nausea, vomiting, diarrhea, or drowsiness.
Chronic effects	

5. Fire-fighting measures

5.1. Extinguishing media

CAUTION: This product has a very low flashpoint. Use of water spray when fighting fire may be inefficient. CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective. SMALL FIRES: Use dry chemical, CO2, water spray or regular foam. LARGE FIRES: Use water spray, fog, or regular foam. Do not use straight streams. Move containers from fire area if you can do so without risk.

5.2. Special hazards arising from the substance or mixture

HIGHLY FLAMMABLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

ERG Guide No. 128

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

ELIMINATE ALL IGNITION SOURCES (no smoking, flares, sparks or flames in immediate area). Use only non-sparking equipment to handle spilled material and absorbent. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to containers. Use non-sparking tools to collect absorbed

material.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

CALL CHEMTREC at (800)-424-9300 for emergency response. Isolate spill or leak area immediately for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. LARGE SPILLS: Consider initial downwind evacuation for at least 300 meters (1000 feet).

7. Handling and storage

7.1. Precautions for safe handling

Handling

Vapors may cause flash fire or ignite explosively.

In Storage

Keep away from heat, sparks and flame.

7.2. Conditions for safe storage, including any incompatibilities

Store between 40-100F (4-38C).

Do not get in eyes, on skin or clothing.

Strong oxidizing agents.

Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone.

7.3. Specific end use(s)

Close container after each use.

Wash thoroughly after handling.

Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000090-72-2	2,4,6-Tri(dimethylaminomethyl)phenol	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0000100-51-6	Benzyl alcohol	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0000108-10-1	Methylisobutyl ketone	OSHA	100 ppm TWA; 410 mg/m3 TWA75 ppm STEL; 300 mg/m3 STEL
		ACGIH	20 ppm TWA75 ppm STEL
		NIOSH	50 ppm TWA; 205 mg/m3 TWA75 ppm STEL; 300 mg/m3 STEL500 ppm IDLH
		Supplier	No Established Limit
		OHSA, CAN	20 ppm TWA75 ppm STEL

		Mexico	50 ppm TWA LMPE-PPT; 205 mg/m3 TWA LMPE-PPT75 ppm STEL [LMPE-CT]; 307 mg/m3 STEL [LMPE-CT]
		Brazil	No Established Limit
0001477-55-0	m-Xylene-alpha, alpha'-diamine	OSHA	0.1 mg/m3 Ceiling
		ACGIH	0.1 mg/m3 Ceiling
		NIOSH	0.1 mg/m3 Ceiling
		Supplier	No Established Limit
		OHSA, CAN	0.1 mg/m3 Ceiling
		Mexico	No Established Limit
		Brazil	No Established Limit
0002855-13-2	Isophorone diamine	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit
0061791-53-5	Amines, N-tallow alkyltrimethylenedi-, oleates	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
		OHSA, CAN	No Established Limit
		Mexico	No Established Limit
		Brazil	No Established Limit

Health Data

CAS No.	Ingredient	Source	Value
0000090-72-2	2,4,6-Tri(dimethylaminomethyl)phenol	NIOSH	No Established Limit
0000100-51-6	Benzyl alcohol	NIOSH	No Established Limit
0000108-10-1	Methylisobutyl ketone	NIOSH	Irritation liver
0001477-55-0	m-Xylene-alpha, alpha'-diamine	NIOSH	Skin irritation systemic effects
0002855-13-2	Isophorone diamine	NIOSH	No Established Limit
0061791-53-5	Amines, N-tallow alkyltrimethylenedi-, oleates	NIOSH	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000090-72-2	2,4,6-Tri(dimethylaminomethyl)phenol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000100-51-6	Benzyl alcohol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000108-10-1	Methylisobutyl ketone	OSHA	Select Carcinogen: Yes
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;
0001477-55-0	m-Xylene-alpha, alpha'-diamine	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0002855-13-2	Isophorone diamine	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No

		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0061791-53-5	Amines, N-tallow alkyltrimethylenedi-, oleates	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory	Select equipment to provide protection from the ingredients listed in Section 3 of this document. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates dust, vapor, or mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. FOR USERS OF 3M RESPIRATORY PROTECTION ONLY: For information and assistance on 3M occupational health and safety products, call OH&ESD Technical Service toll free in U.S.A. 1-800-243-4630, in Canada call 1-800-267-4414. Please do not contact these numbers regarding other manufacturer's respiratory protection products. 3M does not endorse the accuracy of the information contained in this Material Safety Data Sheet.
Eyes	Avoid contact with eyes. Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 3 of this document. Depending on the site-specific conditions of use, safety glasses, chemical goggles, and/or head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Skin	Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 3 of this document. Depending on the site-specific conditions of use, protective gloves, apron, boots, head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Engineering Controls	Depending on the site-specific conditions of use, provide adequate ventilation.
Other Work Practices	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, using toilet facilities, etc. Promptly remove soiled clothing and wash clothing thoroughly before reuse. Shower after work using plenty of soap and water.

9. Physical and chemical properties

Appearance	Coloured Liquid
Odour threshold	Not Measured
pH	No Established Limit
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	79 (C) 175 (F)
Flash Point	44 (C) 111 (F)
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: 1.3 Upper Explosive Limit: No Established Limit
vapor pressure (Pa)	Not Measured
Vapor Density	Heavier than air
Specific Gravity	1.02
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	No Established Limit
VOC %	Refer to the Technical Data Sheet or label where information is available.

9.2. Other information

No further information

10. Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

This product is stable and hazardous polymerization will not occur. Not sensitive to mechanical impact. Excessive heat and fumes generation can occur if improperly handled.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

HIGHLY FLAMMABLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.

11. Toxicological information

Acute toxicity

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Benzyl alcohol - (100-51-6)	1,230.00, Rat - Category: 4	2,000.00, Rabbit - Category: 4	No data available	4.178, Rat - Category: 4
Isophorone diamine - (2855-13-2)	1,030.00, Rat - Category: 4	2,001.00, Rat - Category: 5	No data available	5.02, Rat - Category: NA
m-Xylene-alpha, alpha'-diamine - (1477-55-0)	930.00, Rat - Category: 4	2,000.00, Rabbit - Category: 4	2.40, Rat - Category: 3	No data available
Amines, N-tallow alkyltrimethylenedi-, oleates - (61791-53-5)	5,000.00, Rat - Category: 5	No data available	No data available	No data available
2,4,6-Tri(dimethylaminomethyl)phenol - (90-72-2)	1,200.00, Rat - Category: 4	1,280.00, Rat - Category: 4	No data available	No data available
Methylisobutyl ketone - (108-10-1)	2,080.00, Rat - Category: 5	16,000.00, Rabbit - Category: NA	12.30, Rat - Category: 4	No data available

Item	Category	Hazard
Acute Toxicity (mouth)	4	Harmful if swallowed.
Acute Toxicity (skin)	5	May be harmful in contact with skin.
Acute Toxicity (inhalation)	3	Toxic if inhaled.
Skin corrosion/irritation	1B	Causes severe skin burns and eye damage.
Eye damage/irritation	1	Causes serious eye damage.
Sensitization (respiratory)	Not Classified	Not Applicable
Sensitization (skin)	1	May cause an allergic skin reaction.
Germ toxicity	Not Classified	Not Applicable
Carcinogenicity	Not Classified	Not Applicable
Reproductive Toxicity	Not Classified	Not Applicable
Specific target organ systemic toxicity (single exposure)	Not Classified	Not Applicable

Specific target organ systemic Toxicity (repeated exposure)	Not Classified	Not Applicable
Aspiration hazard	Not Classified	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Benzyl alcohol - (100-51-6)	10.00, Lepomis macrochirus	55.00, Daphnia magna	700.00 (72 hr), Algae
Isophorone diamine - (2855-13-2)	110.00, Leuciscus idus	17.40, Daphnia magna	37.00 (72 hr), Scenedesmus subspicatus
m-Xylene-alpha, alpha'-diamine - (1477-55-0)	100.00, Oncorhynchus mykiss	16.00, Daphnia magna	Not Available
Amines, N-tallow alkyltrimethylenedi-, oleates - (61791-53-5)	0.10, Fish (Piscis)	0.001, Daphnia magna	0.01 (72 hr), Algae
2,4,6-Tri(dimethylaminomethyl)phenol - (90-72-2)	Not Available	Not Available	Not Available
Methylisobutyl ketone - (108-10-1)	505.00, Pimephales promelas	1,550.00, Daphnia magna	980.00 (48 hr), Scenedesmus subspicatus

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

13. Disposal considerations

13.1. Waste treatment methods

Do not allow spills to enter drains or watercourses.

Dispose of in accordance with local, state and federal regulations. (Also reference RCRA information in Section 15 if listed).

14. Transport information

14.1. UN number UN 1263

14.2. UN proper shipping name PAINT

14.3. Transport hazard class(es)

DOT (Domestic Surface Transportation)

DOT Proper Shipping Name PAINT

DOT Hazard Class 3

IMO / IMDG (Ocean Transportation)

IMDG Proper Shipping Name PAINT

		IMDG Hazard Class	3
		Sub Class	3
UN / NA Number	UN 1263		
DOT Packing Group	III	IMDG Packing Group	III
CERCLA/DOT RQ	14980 gal. / 127551 lbs.	System Reference Code	2

14.4. Packing group III

14.5. Environmental hazards

IMDG Marine Pollutant: Yes (Amines, N-tallow alkyltrimethylenedi-, oleates)

14.6. Special precautions for user

Not Applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification B3 D2B E

DOT Marine Pollutants (10%):
(No Product Ingredients Listed)

DOT Severe Marine Pollutants (1%):
(No Product Ingredients Listed)

EPCRA 311/312 Chemicals and RQs (>.1%) :
Methylisobutyl ketone (5000 lb final RQ; 2270 kg final RQ)

EPCRA 302 Extremely Hazardous (>.1%) :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals (>.1%) :
Methylisobutyl ketone

Mass RTK Substances (>1%) :
Benzyl alcohol
m-Xylene-alpha, alpha'-diamine
Methylisobutyl ketone

Penn RTK Substances (>1%) :
Benzyl alcohol
m-Xylene-alpha, alpha'-diamine
Methylisobutyl ketone

Penn Special Hazardous Substances (>.01%) :
(No Product Ingredients Listed)

RCRA Status:
(No Product Ingredients Listed)

N.J. RTK Substances (>1%) :
Isophorone diamine
m-Xylene-alpha, alpha'-diamine
Methylisobutyl ketone

N.J. Special Hazardous Substances (>.01%) :
Isophorone diamine
Methylisobutyl ketone

N.J. Env. Hazardous Substances (>.1%) :
Methylisobutyl ketone

Proposition 65 - Carcinogens (>0%):
Methylisobutyl ketone

Proposition 65 - Female Repro Toxins (>0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0%):
(No Product Ingredients Listed)
Proposition 65 - Developmental Toxins (>0%):
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

The following sections have changed since the previous revision.

End of Document

SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : IPA 70/30 - SATWIPES / PROSAT / SOCOSAT

Product code : 29012T.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Solvent

Cleaner

Industrial uses

Professional uses

1.3. Details of the supplier of the safety data sheet

Registered company name : SOCOMORE S.A.S..

Address : Zone Industrielle du Prat - CS 23707.56037.VANNES CEDEX.France.

Telephone : +33 (0)2 97 43 76 83. Fax : +33 (0)2 97 54 50 26.

techdirsocomore@socomore.com

Distributor: Socomore Ltd - 5, Coe Avenue – Loughborough - Leicestershire – LE11 4SE - UK - Tel: + 44 1509 262040 - Fax + 44 1509 262046

Distributor: Socomore GmbH - c/o MAZARS GmbH - Bernhard-Wicki-Straße 7 - 80636 München - Deutschland Tel. +49 (0) 89 88 91 98 15 Fax. +49 (0) 89 88 91 98 16

Distributor: Socomore Iberia - Calle Diputació, 260 - 08007 Barcelona - España - Tel. +34 93 573 82 60 - Fax +34 902 908 966

Distributor: MagChem Inc. 1271, rue Ampère, suite 101, Boucherville, QC, J4B 5Z5 Canada - tel: 1-450 641 8500 - fax: 1-450 655 1717

Distributor: Socomore Trading Shanghai - 355 East Kang Qiao Road - Kang Qiao Industrial Zone - Pudong - 201315 Shanghai - Tel. 862158131133 / Fax. 862158131933

Dystrybutor : SOCOMORE SPzoo - Ul. Piekna 18, 00-549 Warszawa Polska Tel +48 (22) 621 65 68 Fax +48 (22) 621 61 09

1.4. Emergency telephone number : +33 (0)1 45 42 59 59.

Association/Organisation : INRS.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Highly flammable.

Possibility of irritation to the eyes.

Vapors may cause drowsiness and dizziness.

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

Detergent mixture (see section 15).

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Hazard symbols :

Irritant

Highly flammable

Risk phrase :

R 36	Irritating to eyes.
R 11	Highly flammable.
R 67	Vapours may cause drowsiness and dizziness.

Safety phrase :

S 16	Keep away from sources of ignition - No smoking.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 60	This material and its container must be disposed of as hazardous waste.
S 9	Keep container in a well-ventilated place.
S 37	Wear suitable gloves.

2.3. Other hazards

No data available.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
INDEX: 603-117-00-0 CAS: 67-63-0 EC: 200-661-7 REACH: 01-2119457558-25 PROPAN-2-OL	GHS02, GHS07 Dgr Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	Xi,F Xi;R36 F;R11 R67	[1]	50 <= x % < 100

Information on ingredients :

[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation of dust, remove the person exposed to fresh air. Keep warm and at rest.

In the event of splashes or contact with eyes :

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of swallowing :

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

5.1. Extinguishing media

Keep packages cool when in the vicinity of flames.

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive
- halon
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO2)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)

5.3. Advice for firefighters

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non fire-fighters

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

Avoid any contact with the skin and eyes.

Avoid inhaling dust.

For fire-fighters

Fire-fighters will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming).

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Fire prevention :

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Prevent the accumulation of electrostatic charges with connections to earth.

The mixture can become electrostatically charged : always earth during decanting operations. Wear antistatic shoes and clothing and floors should be electrically conductive.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid eye contact with this mixture.

Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight

Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
67-63-0	200 ppm	400 ppm	-	-	-

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :

CAS	VME :	VME :	Excess	Notes

67-63-0	200 ml/m3	500 mg/m3	2(II)	DFG, Y	

- France (INRS - ED984 :2008) :

CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
67-63-0	-	-	400	980	-	84

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
67-63-0	400 ppm	500 ppm	-	-	-

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

Recommended properties :

- Impervious gloves in accordance with standard EN374

- Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing vapours.

Avoid breathing dust.

If the ventilation is insufficient, wear appropriate breathing apparatus.

When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

Type of FFP mask :

Wear a disposable half-mask dust filter in accordance with standard EN149.

Category :

- FFP1

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- A1 (Brown)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :	solid.

Important health, safety and environmental information

	neutral.
pH :	Not stated.
Boiling point/boiling range :	82 °C.
Flash Point :	17.00 °C.
Vapour pressure (50°C) :	not relevant.
Density :	< 1
Water solubility :	Soluble.
Melting point/melting range :	not relevant.
Self-ignition temperature :	not specified.
Decomposition point/decomposition range :	not relevant.

9.2. Other information

VOC (g/l) : 602

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.
- heating
- heat
- flames and hot surfaces
- formation of dusts

Dusts can form an explosive mixture with air.

10.5. Incompatible materials

Keep away from :

- combustible material

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Repeated or prolonged contact with the mixture may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days.

Splashes in the eyes may cause irritation and reversible damage

Narcotic effects may occur, such as drowsiness, narcosis, decreased alertness, loss of reflexes, lack of coordination or dizziness.

Effects may also occur in the form of violent headaches or nausea, judgement disorder, giddiness, irritability, fatigue or memory disturbance.

11.1.1. Substances

No toxicological data available for the substances.

11.1.2. Mixture

No toxicological data available for the mixture.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Substances

No aquatic toxicity data available for the substances.

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :

15 02 02 * absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2013 - IMDG 2012 - ICAO/IATA 2013).

14.1. UN number

3175

14.2. UN proper shipping name

UN3175=SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a flash-point up to 60 °C

(propan-2-ol)

14.3. Transport hazard class(es)

- Classification :

4.1

14.4. Packing group

II

14.5. Environmental hazards

-

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	4.1	F1	II	4.1	40	1 kg	216 274 601	E2	2	E

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
	4.1	-	II	1 kg	F-A,S-I	216 274	E2

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	4.1	-	II	445	15 kg	448	50 kg	A46	E2
	4.1	-	II	Y441	5 kg	-	-	A46	E2

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available.

SECTION 15 : REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Particular provisions :

No data available.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Title for H, EUH and R indications mentioned in section 3 :

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
R 11	Highly flammable.
R 36	Irritating to eyes.
R 67	Vapours may cause drowsiness and dizziness.

Abbreviations :

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

UNIVAR

MASTER SAFETY DATA SHEET

Version date:	Version number:	Printing date:	Page:
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MSDS: ID001

10% ISOPROPANOL IN WATER

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

Product Name 10% ISOPROPANOL IN WATER

Supplier

UNIVAR A/S
ROSENØRNS ALLE 9
DK-1970 FREDERIKSBERG C

Telephone: +45 3537 1244, Fax: +45 3537 5204

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS number		%	Symbols:
67-63-0	200-661-7 Isopropanol	10	XI, F **R-phrases** R11-R36-R67

Other information

Please refer to section 16 for wording of R-phrases

3. HAZARDS IDENTIFICATION

R10 FLAMMABLE.

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air
Skin contact: Flush exposed area with water
Eye contact: Flush eyes with large amounts of water. See a doctor if necessary
Ingestion: Do not induce vomiting. See a doctor if considerable amounts has been ingested

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Alcohol-resistent foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires.

Wear self-contained breathing apparatus

Keep adjacent containers cool by spraying with water

6. ACCIDENTAL RELEASE MEASURES

Prevent from spreading by using sand, earth or other appropriate barriers

Transfer liquid by mechanical means to a labelled sealable container for safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely.

Refer to section 8 for appropriate Personal Protective Equipment

7. HANDLING AND STORAGE

Univar AB
Box 4072, Kalendegatan 26
SE-203 11 Malmö
Tel +46 (0)40 -35 28 00
Fax +46 (0)40 -12 51 72

Univar AB
Box 48, Marieholmsgatan 56
SE-401 20 Göteborg
Tel +46 (0)31- 83 80 00
Fax +46 (0)31- 84 39 80

www.univarnordic.com
info.nordic@univareurope.com
Org.nr: 556114-6308

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Only use in well ventilated areas
Take precautions against eletrostatic discharges
Extinguish any naked flames

Storage
Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat.
Keep away from oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA for Isopropanol (Denmark): 200 ppm

Avoid contact with skin and eyes. Use gloves (butyl rubber) and chemical monogoggles if necessary.

Avoid breathing vapours. Use respiratory protective equipment if necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES

Liquid

Density, kg/m3	970 (calculated, 25°C)
Water solubility	complete
Flash point, °C	26 (calculated)

10. STABILITY AND REACTIVITY

Stable under normal conditions of use.

Avoid contact with strong oxidising agents and strong acids.

11. TOXICOLOGICAL INFORMATION

Isopropanol:

Skin contact: Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Eye contact: Irritating to the eyes
Inhalation: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea, continued inhalation may result in unconsciousness and/or death
May cause irritation of the respiratory system
May cause damage to the central nervous system

12. ECOLOGICAL INFORMATION

Isopropanol:

Fish: low toxicity: LC/EC/IC50 > 100 mg/l
Algae: Expected to have low toxicity: LC/EC/IC50 > 100 mg/l
Microorganisms: low toxicity: LC/EC/IC50 > 100 mg/l

Not expected to bioaccumulate significantly
Readily biodegradable

13. DISPOSAL CONSIDERATIONS

Univar AB
Box 4072, Kalendegatan 26
SE-203 11 Malmö
Tel +46 (0)40 -35 28 00
Fax +46 (0)40 -12 51 72

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SE-401 20 Göteborg
Tel +46 (0)31- 83 80 00
Fax +46 (0)31- 84 39 80

www.univarnordic.com
info.nordic@univareurope.com
Org.nr: 556114-6308

Contact local Authorities. Hazardous waste

14. TRANSPORT INFORMATION

Proper shipping name UN1219 Isopropanol
ISOPROPANOL,10% SOLUTION
Proper shipping name Isopropanol
ISOPROPANOL, 10% SOLUTION
Class/Packaging gr. 3/III
Flash point ca.26

15. REGULATORY INFORMATION

Classification	Symbol / Hazard code
Health hazard	0 : Not hazardous
Environmental hazard	0 : Not hazardous

R- and S-sentences

R10 FLAMMABLE.

Regulatory information

Children and young people are not allowed to work with the product (Denmark)

16. OTHER INFORMATION

R11 HIGHLY FLAMMABLE.
R36 IRRITATING TO EYES.
R67 VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS.

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Org.nr: 556114-6308

According to EC-Regulation 1907/2006 (REACH)

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
Strong rust and lime remover
Product no.
-
REACH registration number
Not applicable
Other means of identification

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
High-concentrate special agent for removal of limestone and rust on sanitary porcelain and chromium-plated fittings.
Do not use on terrazzo floors and enamelled objects (bath tubs).
The full text of any mentioned and identified application categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
Borup Kemi I/S
B kg rdsvej 53
DK-4140 Borup
Tlf: +45 5756 0020
Fax: +45 5756 0021
www.borup-kemi.dk
Contact person
-
E-mail
kontakt borup-kemi.dk
SDS date
18-07-2012
SDS Version
1.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Irritant.

2.2. Label elements

Hazard pictogram(s)

Hazard statement(s)
Irritating to eyes and skin. (R36/38)

Identity of the substances primarily responsible for the major health hazards

Safety statement(s)	General	Keep out of the reach of children.
	Prevention	-
	Response	If swallowed, seek medical advice immediately and show this container or label. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	Storage	-
	Disposal	-

2.3. Other hazards

This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

-

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances

NAME:	orthophosphoric acid
IDENTIFICATION NOS.:	CAS-no: 7664-38-2 EC-no: 231-633-2 Index-no: 015-011-00-6
CONTENT:	25%
DSD CLASSIFICATION:	C; R34
CLP CLASSIFICATION:	Skin Corr. 1B H314

NAME:	(2-methoxymethylethoxy)propanol
IDENTIFICATION NOS.:	CAS-no: 34590-94-8 EC-no: 252-104-2
CONTENT:	1-5%
DSD CLASSIFICATION:	-
CLP CLASSIFICATION:	-
NOTE:	S

NAME:	C9-11 PARETH-3
IDENTIFICATION NOS.:	CAS-no: 68439-46-3
CONTENT:	1-5%
DSD CLASSIFICATION:	i;R41 N;R50
CLP CLASSIFICATION:	Eye Dam. 1, Aquatic Acute 1 H318, H400

NAME:	propan-2-ol
IDENTIFICATION NOS.:	CAS-no: 67-63-0 EC-no: 200-661-7 Index-no: 603-117-00-0
CONTENT:	1-5%
DSD CLASSIFICATION:	F; R11 i; R36 R67
CLP CLASSIFICATION:	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3 H225, H319, H336
NOTE:	S

NAME:	Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.
IDENTIFICATION NOS.:	CAS-no: 85536-14-7 EC-no: 287-494-3
CONTENT:	1-5%
DSD CLASSIFICATION:	C;R34 N;R51/53
CLP CLASSIFICATION:	Skin. Corr. 1B, Aquatic Chronic 2 H314, H411

( ) See full text of H/R-phrases in chapter 16. Occupational limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. The doctor can contact the Work Environment Medical Clinic at Bispebjerg Hospital, tlf. 35 31 60 60 Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. Contact a doctor at once.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

4.3. Indication of any immediate medical attention and special treatment needed

No special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances. Avoid inhalation of vapours from waste material.

6.2. Environmental precautions

No specific requirements.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided. Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations.

6.4. Reference to other sections

See section on “Disposal” with regard to the handling of waste. See section on 'Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original.

Storage temperature

Cool and dry

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

propan-2-ol (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): 400 ppm 999 mg/m3
Short-term exposure limit (15-minute reference period): 500 ppm 1250 mg/m3

(2-methoxymethylethoxy)propanol (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): 50 ppm 308 mg/m3
Short-term exposure limit (15-minute reference period): - ppm - mg/m3
Comments: Sk (Sk = Can be absorbed through skin.)

orthophosphoric acid (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): - ppm 1 mg/m3
Short-term exposure limit (15-minute reference period): - ppm 2 mg/m3

DNEL / PNEC

DNEL (propan-2-ol): 89 mg/m3 - Exposure: Inhalation - Duration: Long term - Remarks: General population
DNEL (propan-2-ol): 26 mg/kg - Exposure: Oral - Duration: Long term - Remarks: General population
DNEL (propan-2-ol): 888 mg/kg - Exposure: Dermal - Duration: Long term - Remarks: Workers
DNEL (propan-2-ol): 500 mg/m3 - Exposure: Inhalation - Duration: Long term - Remarks: Workers
DNEL (propan-2-ol): 319 mg/kg - Exposure: Dermal - Duration: Long term - Remarks: General population
DNEL (orthophosphoric acid): 2,92 mg/m3 - Exposure: Inhalation - Duration: long term - local effects - Remarks: Workers
DNEL (orthophosphoric acid): 0,73 mg/m3 - Exposure: Inhalation - Duration: long term - local effects - Remarks: General population
DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 170 mg/kg - Exposure: Dermal - Duration: Long term - systemic effects - Remarks: Workers
DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 12 mg/m3 - Exposure: Inhalation - Duration: Long term - systemic effects - Remarks: Workers
DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 12 mg/m3 - Exposure: Inhalation - Duration: long term - local effects - Remarks: Workers

DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 85 mg/kg - Exposure: Dermal - Duration: Long term - systemic effects - Remarks: General population
DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 3 mg/m3 - Exposure: Inhalation - Duration: Long term - systemic effects - Remarks: General population
DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 0,85 mg/kg - Exposure: Oral - Duration: Long term - systemic effects - Remarks: General population
DNEL (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 3 mg/m3 - Exposure: Inhalation - Duration: long term - local effects - Remarks: General population

PNEC (propan-2-ol): 140,9 mg/L - Exposure: Water - Duration: Single - Remarks: Fresh water
PNEC (propan-2-ol): 140,9 mg/L - Exposure: Water - Duration: Single - Remarks: Marine water
PNEC (propan-2-ol): 28 mg/kg - Exposure: Soil - Duration: Single
PNEC (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 0,287 mg/L - Exposure: Water - Remarks: Fresh water
PNEC (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 0,0287 mg/L - Exposure: Water - Remarks: Marine water
PNEC (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 0,0167 mg/L - Exposure: Water - Remarks: Intermittent releases
PNEC (Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.): 35 mg/kg - Exposure: Soil

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom.

Exposure scenarios

There is no exposure scenario for this product.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values above.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see above). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

No specific requirements.

Skin protection

Special work clothing should be used.

Hand protection

Recommended: Nitrile rubber.

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Liquid	-	-	-	-	-

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
Not flammable	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Soluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions
No special

10.4. Conditions to avoid
Do not expose to heat (e.g. sunlight), because it can lead to excess pressure.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidising agents, and strong catabolic agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
propan-2-ol	Rat	LD50	Oral	5,84 g/kg
propan-2-ol	Rat	LC50	Inhalation	>10000 ppm/6 h
propan-2-ol	Rabbit	LD50	Dermal	16,4 mL/kg
orthophosphoric acid	Rat	LD50	Oral	1,7 mL/100 g BW
orthophosphoric acid	Rat	LC50	Inhalation	1217 mg/m3 (1h)
orthophosphoric acid	Rabbit	LD50	Dermal	2740 mg/kg
Benzenesulfonic acid, 4-C10-13...	Rat	LD50	Oral	1470 mg/kg
Benzenesulfonic acid, 4-C10-13...	Rat	LD50	Dermal	>2000 mg/kg

Long term effects
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
propan-2-ol	Algae	EC50	24 h	>1000000 ug/L
propan-2-ol	Daphnia	EC50	24 h	>10000 mg/L
propan-2-ol	Fish	LC50	96 h	10000 mg/L
orthophosphoric acid	Daphnia	EC50	48 h	>100 mg/L
orthophosphoric acid	Algae	EC50	72 h	>100 mg/L
Benzenesulfonic acid, 4-C10-13...	Fish	LC50	96 h	1,67 mg/L
Benzenesulfonic acid, 4-C10-13...	Daphnia	LC50	48 h	2,4 mg/L
Benzenesulfonic acid, 4-C10-13...	Algae	NOEC	72 h	2,4 mg/L

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
propan-2-ol		No data available	No data available
orthophosphoric acid	Yes	No data available	No data available
Benzenesulfonic acid, 4-C10-13...		No data available	94%

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC
propan-2-ol	No	0,05	No data available
orthophosphoric acid	No	No data available	No data available

12.4. Mobility in soil

propan-2-ol: Log Koc= 0,117995, Calculated from LogPow (High mobility potential.).
Benzenesulfonic acid, 4-C10-13...: Log Koc= 2,61248, Calculated from LogPow (Moderate mobility potential.).

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

This product contains ecotoxic substances which can have damaging effects on water-organisms. This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code

20 01 29

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

Not listed as dangerous goods under ADR and IMDG regulations.

14.1 – 14.4

ADR/RID	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Notes

IMDG	UN-no.	Proper Shipping Name	Class	PG*	EmS	MP**	Hazardous constituent

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

Designation according to EU Regulation No. 648/2004:
15-30%: Phosphates
5% : non-ionic surfactants

Demands for specific education

-

15.2. Chemical safety assessment

No

SECTION 16: Other information

Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)

Full text of H/R-phrases as mentioned in section 3

R11 - Highly flammable.
R34 - Causes burns.
R36 - Irritating to eyes.
R41 - Risk of serious damage to eyes.
R50 - Very toxic to aquatic organisms.
R67 - Vapours may cause drowsiness and dizziness.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H225 - Highly flammable liquid and vapour.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H400 - Very toxic to aquatic life.
H411 - Toxic to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

-

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet has been prepared and validated by

mediator.as, Centervej 2, DK-6000 Kolding. Konsulent: TS

Date of last essential change
(First cipher in SDS version)

-

Date of last minor change
(Last cipher in SDS version)

-

Sikkerhedsdatablad

1. Produktets handelsnavn og importør

Handelsnavn:	**KD-Check SD-1;Aerosol Art.-Nr. 9903.1. PR-nr. 1942519**
Producent:	KARL DEUTSCH Prüf- und Messgerätebau GmbH + Co KG Otto-Hausmann-Ring 101 D-42115 Wuppertal Deutschland Tlf.: (+49-202) 7192-0 Fax: (+49-202) 714932
Importør:	Altest NDT Udstyr ApS Metalgangen 19E 2690 Karlslunde Danmark Tlf: +45 46 15 34 44 Fax:+45 46 15 25 52

2. Sammensætning og oplysninger om indholdsstoffer

Indhold	CAS-nr	Indhold %	Faresymbol	R-sætninger
Isopropanol	67-63-0			
Bemærkninger:	Opslæmning af uorganiske stoffer i Isopropanol, propan, butan. Produktet er klassificeret som farligt stof ifølge Lov om Farlige stoffer / EU Regulativer.			

3. Fareidentifikation

ADVARSEL.
Trykbeholder. Må ikke udsættes for sollys eller temperaturer over 50^{0}C. Må ikke punkteres eller brændes. Gælder også for tomme beholdere. Spray ikke mod flammer eller hvidglødende materiale. Skal opbevares utilgængeligt for børn. BRANDFARLIGT: Brug – langt fra antændelige kilder – kun i områder med tilstrækkelig ventilation. Ellers kan det udløse dannelse af meget brandfarlige, eksplosive dampe. Sprayen må IKKE indåndes.

R12: Yders brandfarlig
R36: Irriterer øjnene
R67: Dampe kan forårsage træthed og døsighed.
S24/25: Undgå kontakt med huden og øjnene
S26: Kommer stoffet i øjnene, skylles straks grundigt med vand og læge kontaktes

4. Førstehjælpsforanstaltninger

General information	Ved truende bevidstløshed, skal transport foretages i aflåst sideleje. Fjern forurenet tøj øjeblikkeligt og kassér det på en sikker måde. Ved vedvarende symptomer søg læge.
Indånding:	Ved indånding, flyt den tilskadekomne ud i frisk luft, og hold den tilskadekomne i ro. I tilfælde af vejrtrækningsstop gives kunstigt åndedræt og kontakt øjeblikkelig læge.
Hudkontakt:	Vask øjeblikkelig med vand og sæbe. Søg læge hvis generne vedbliver.
Øjne:	Skyl med meget vand. Søg derefter læge.
Indtagelse:	Hvis den skadede kaster op, skal han vendes om på siden. Fremkald ikke opkastninger. Søg øjeblikkelig læge.

5. Brandbekæmpelse	
Risiko ved brand:	Ved at udsætte produktet for brand kan udledning af sod, og andre organiske stoffer; CO forekomme.
Forholdsregler:	Ved risiko for brand afkøl containeren med vand.
Egnet slukningsmiddel:	Skum, pulver, kuldioxid (CO2), sand,. vandstråle, vandtåger.
IKKE egnet slukningsmiddel:	Vand i fuld tryk
Specielt til brandvæsnets info:	Brug iltapparat med uafhængig ilttilførsel.
6. Forholdsregler overfor udslip ved uheld	
Personlig beskyttelse:	Sørg for god ventilation, undgå kontakt med huden og øjne. Undgå at produktet lækker. Benyt beskyttelsesudstyr. Hold produktet borte fra åben ild. Ved udsættelse for dampe benyt åndedragsbeskyttelse.
Miljøbeskyttelse:	Må ikke bortkastes i almindelig affaldsbeholdere, må ikke komme i afløbet, og må ikke bortkastes i jorden.
Rengøringsmetoder:	Opsamles med absorberende materiale (sand, klæde, e.g. olie) Efter opsamling skal produktet bortkastes i henhold til loven.
7. Håndtering og opbevaring	
Håndtering:	Må kun bruges i områder med tilstrækkelig ventilation. Undgå dannelse af oliestøv.
Beskyttelse mod ild og eksplosion:	Holdes væk fra antændelige kilder. Rygning forbudt. Dampe kan eksplodere i blanding med luft. Produktets dampe er tungere end luften,. Tag sikkerhedsforanstaltninger mod statisk afladning.
Opbevaring:	Opbevar ikke produktet sammen med iltende materialer. Opbevar på et køligt og luftigt sted. Beskyt fra varme/overophedning. Opbevaring kun ifølge de lokale regulativer for aerosol produkter.
8. Eksponeringskontrol - personlige værnemidler	
Generelle beskyttende forholdsregler:	Inhalér ikke dampene. Undgå kontakt med øjne og hud.
Personlig beskyttelse:	Ved risiko for stænk skal beskyttelseshandsker (PVC) og –briller (tætsiddende) anvendes. Iltapparat skal være til stede i tilfælde af aerosol eller støvdannelse.
Personlig hygiejne:	Vask huden grundigt efter arbejde. Når der arbejdes må der ikke spises, drikkes, ryges eller tages medicin.
9. Fysiske og kemiske egenskaber	
Varebeskrivelse:	Opslæmmet, hvidt, kun let lugt.
pH:	Udfyldes ikke
Kogepunkt (gr. C.):	82ºC – 83ºC
Vægtfylde (g/cm^3):	0,79 (15ºC)
Flammepunkt (gr. C):	12ºC
Damptryk (kPa/gr. C):	4100 (20ºC)
Ekspl. Omr. (vol-%):	2-12
Opløselighed i vand (W-%):	Delvist uopløseligt i vand.
10. Stabilitet og reaktivitet	
Forhold, der bør undgås:	Udvikling af brandbare blandinger er muligt i luft, ved opvarmning over flammepunktet og / eller mens man sprayer eller forstøver.

Materialer, der bør undgås: Farlige opløsningsstoffer:	Reaktioner med iltende materialer og stærke syrer. Mangelfuld forbrænding / termisk opløsning kan føre til dannelse af kuldioxid (CO_2) og farlige gaser så som kulilte.
11. Toksiologiske oplysninger	
	LD50 Akut oral, rotte: > 2.000 mg/kg
12. Miljøoplysninger.	
Bioakkumulering:	Må ikke bortkastes i miljøet. Ingen.
13. Bortskaffelse	
Affaldsnavn: Anbefalinger til aerosolindpakning:	Affaldskode (EAK): 16 05 01. Affaldsnavn: Industriel aerosol. Ifølge de lokale regulativer.
14. Transportoplysninger	
UN-Nr.: ADR/RID/GGVS/GGVE:	1950 Aerosol indpakning Klasse 2, Figur 5F
15. Oplysning om regulering.	
Klassifikationer: R-tekster: S-tekster: Vand fareklasse:	Produktet er mærket ifølge EU direktiver / Tysklands regulativer for farlige stoffer.  Sundhedsskadelig  Yderst brandfarlig R12: Yderst brandfarlig R36: Irriterer øjnene R67: Dampe kan forårsage træthed og døsighed S23: Undgå indånding af gas/røg/dampe/tåger S24/25: Undgå kontakt med huden og øjnene S26: Kommer stoffet I øjnene, skylles straks grundigt med vand og læge kontaktes. 1 (KBwS)

16. Andre oplysninger

Alle givne data korresponderer til det nuværende kendskab og erfaring, som er baseret på gældende regulativer i Tyskland.

Dette datablad beskriver udelukkende sikkerhedsbeskrivelserne og giver derfor ingen garanti på nogen ejendele.

Dato: Karlslunde, 13. november 2007 Underskrift:

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
EL-K80 Contact Cleaner
Product no.
11505
REACH registration number
Not applicable
Other means of identification

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Contact Cleaner

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
02-07-2015
SDS Version
1000.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

▼2.1. Classification of the substance or mixture

Aerosol 1; H229
Aerosol 1; H222
Eye Irrit. 2; H319
Aquatic Chronic 3; H412
EUH066

See full text of H-phrases in section 2.2.

2.2. Label elements

▼Hazard pictogram(s)

▼Signal word

Danger

Hazard statement(s)

Pressurised container: May burst if heated. (H229)
Extremely flammable aerosol. (H222)
Causes serious eye irritation. (H319)
Harmful to aquatic life with long lasting effects. (H412)

Safety statement(s)

General	-
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210). Do not spray on an open flame or other ignition source. (P211). Do not pierce or burn, even after use. (P251).
	Use only outdoors or in a well-ventilated area. (P271). Wear eye protection. (P280).
Response	-
Storage	Protect from sunlight. Do no expose to temperatures exceeding 50 oC/122oF. (P410+P412).
Disposal	-

Identity of the substances primarily responsible for the major health hazards

-

2.3. Other hazards

This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

Repeated exposure may cause skin dryness or cracking. (EUH066)

Additional warnings

-

VOC

VOC-MA : 760 g/l, MA IMUM VOC CONTENT (B/e): 840 g/l.

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	cyclopentane
IDENTIFICATION NOS.:	CAS-no: 287-92-3 EC-no: 206-016-6 Index-no: 601-030-00-2
CONTENT:	60-80%
CLP CLASSIFICATION:	Flam. Liq. 2, Aquatic Chronic 3 H225, H412
NOTE:	S
NAME:	propan-2-ol
IDENTIFICATION NOS.:	CAS-no: 67-63-0 EC-no: 200-661-7 Index-no: 603-117-00-0
CONTENT:	15-25%
CLP CLASSIFICATION:	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3 H225, H319, H336
NOTE:	S
NAME:	carbon dioxide
IDENTIFICATION NOS.:	CAS-no: 124-38-9 EC-no: 204-696-9
CONTENT:	5-10%
CLP CLASSIFICATION:	Comp. Gas H280

( ) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = 1,336 - 0
N chronic (CAT 3) Sum = Sum(Ci/M(chronic)i 25 0.1 10 CATi) = 2,5024 - 3,7536

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation
Get the person into fresh air and stay with them.

Skin contact
Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact
Remove contact lenses. Flush eyes with water (20-30°C) for at least 15 minutes. Call a doctor.

Ingestion
Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns
Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

4.3. Indication of any immediate medical attention and special treatment needed
No special

Information to medics
Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture
If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses.

Aerosols may explode if heated / fire.

5.3. Advice for firefighters
Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions
Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up
Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on “Disposal considerations ” with regard to the handling of waste. See section on 'Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Storage temperature

50°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

carbon dioxide (EH40, 2011)
Long-term exposure limit (8-hour TWA reference period): 5000 ppm 9150 mg/m3
Short-term exposure limit (15-minute reference period): 15000 ppm 27400 mg/m3

propan-2-ol (EH40, 2005)
Long-term exposure limit (8-hour TWA reference period): 400 ppm 999 mg/m3
Short-term exposure limit (15-minute reference period): 500 ppm 1250 mg/m3

DNEL / PNEC

No data available.

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

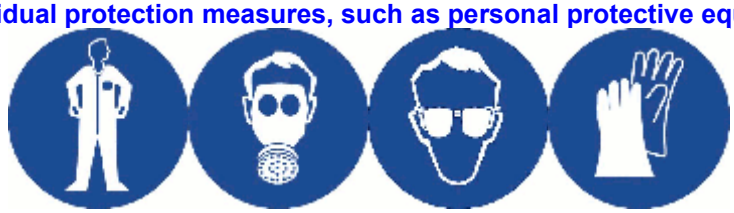
Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

The product contains liquids with a low boiling point which are poorly absorbed on charcoal filters. The use of fresh air respiratory protective equipment is thus required. In most cases a mask with an A -filter is adequate, as the product normally is used only for a short period of time.

Skin protection
Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection
Recommended: Nitrile rubber. . See the manufacturer s instructions

Eye protection
Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	Colourless	Alcohol odor	7	-	0,8

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
-50	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Soluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions
No special

10.4. Conditions to avoid
Avoid static electricity.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
propan-2-ol	Rat	LD50	Dermal	12800 mg/kg
propan-2-ol	Rabbit	LD50	Dermal	12870 mg/kg
propan-2-ol	Rat	LD50	Oral	4396 mg/kg
propan-2-ol	Rat	LC50	Inhalation	72,6 mg/L (4 h)

Skin corrosion/irritation
No data available.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity

No data available.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Long term effects
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
				9640 mg/l flow-through (Pimephales promelas)
propan-2-ol	Fish	LC50	96 h	11130 mg/L static
propan-2-ol	Fish	LC50	96 h	Pimephales promelas)
propan-2-ol	Algae	EC50	96 h	>1000 mg/L (Desmodesmus subspicatus)
propan-2-ol	Daphnia	EC50	48 h	= 13299 mg/L (Daphnia magna)
cyclopentane	Fish	LC50	96 h	100000 ug/L

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result

No data available.

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC

No data available.

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
The product is covered by the regulations on dangerous waste.

Waste
EWC code
16 05 04

Specific labelling
-

Contaminated packing
Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es)	2.1
14.4. Packing group	II
Notes	-
Tunnel restriction code	D

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Class	2.1
PG*	II
EmS	F-D, S-U
MP**	-
Hazardous constituent	Cyclopentane, Isopropanol

IATA/ICAO

UN-no.	
Proper Shipping Name	
Class	
PG*	

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC.

Demands for specific education

-

Additional information

Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H225 - Highly flammable liquid and vapour.
H280 - Contains gas under pressure; may explode if heated.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H412 - Harmful to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJH

Date of last essential change
(First cipher in SDS version)

02-07-2015

Date of last minor change
(Last cipher in SDS version)

02-07-2015

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
ELS-33 El-isol Protection
Product no.
05395
REACH registration number
Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Corrosion protection

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
22-10-2015
SDS Version
2.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Aerosol 1; H229
Aerosol 1; H222
STOT SE 3; H336
Aquatic Chronic 2; H411
EUH066

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)

Signal word
Danger
Hazard statement(s)

Pressurised container: May burst if heated. (H229)
Extremely flammable aerosol. (H222)
May cause drowsiness or dizziness. (H336)
Toxic to aquatic life with long lasting effects. (H411)

▼Safety statement(s)

General	-
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210). Do not spray on an open flame or other ignition source. (P211). Do not pierce or burn, even after use. (P251). Use only outdoors or in a well-ventilated area. (P271). Wear protective clothing/protective gloves/eye protection/face protection. (P280).
Response	-
Storage	Protect from sunlight. Do no expose to temperatures exceeding 50 oC/122oF. (P410+P412).
Disposal	-

Identity of the substances primarily responsible for the major health hazards

Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene

2.3. Other hazards

Additional labelling

Repeated exposure may cause skin dryness or cracking. (EUH066)

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene
IDENTIFICATION NOS.:	CAS-no: 64742-82-1 EC-no: 265-185-4 Index-no: 649-330-00-2
CONTENT:	25-40%
CLP CLASSIFICATION:	Flam. Liq. 3, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 2 H226, H304, H336, H411
NAME:	Petroleum gases, liquefied (0,1 % w/w 1,3-butadiene (EINECS No. 203-450-8))
IDENTIFICATION NOS.:	CAS-no: 68476-85-7 EC-no: 270-704-2 Index-no: 649-202-00-6
CONTENT:	15-25%
CLP CLASSIFICATION:	Comp. Gas, Flam. Gas 1 H220, H280
NAME:	Naphtha (petroleum), hydrotreated light (0,1 % w/w benzene (EINECS No 200-753-7)).
IDENTIFICATION NOS.:	CAS-no: 64742-49-0 EC-no: 265-151-9 Index-no: 649-328-00-1
CONTENT:	5-10%
CLP CLASSIFICATION:	Flam. Liq. 2, STOT SE 3, Skin Irrit. 2, Asp. Tox. 1, Aquatic Chronic 2 H225, H304, H315, H336, H411
NAME:	Sulfonic acids, petroleum, sodium salts
IDENTIFICATION NOS.:	CAS-no: 68608-26-4 EC-no: 271-781-5
CONTENT:	3-5%
CLP CLASSIFICATION:	Eye Irrit. 2 H319

( ) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.

Other informations

Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = 0,3696 - 0,5544
Skin Cat. 2 Sum = Sum(Ci/S(G)CLi) = 0,776 - 1
N chronic (CAT 2) Sum = Sum(Ci/M(chronic)i 25 0.1 10 CATi) = 1,155328 - 1,732992

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

No special

4.3. Indication of any immediate medical attention and special treatment needed

No special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses. Aerosols may explode if heated / fire.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours from waste material. Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on "Disposal considerations " with regard to the handling of waste. See section on 'Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Storage temperature

50°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

Petroleum gases, liquefied (0,1 % w/w 1,3-butadiene (EINECS... (EH40, 2005)
Long-term exposure limit (8-hour TWA reference period): 1000 ppm 1750 mg/m3
Short-term exposure limit (15-minute reference period): 1250 ppm 2180 mg/m3
Comments: Carc (> 0,1%butadien) (Carc = Capable of causing cancer.)

DNEL / PNEC

DNEL (Naphtha (petroleum), hydrotreated light (0,1 % w/w benzene (EINECS No 200-753-7)).): 447 mg/m3
Exposure: Inhalation
Duration of Exposure: Long term – Systemic effects - General population

DNEL (Naphtha (petroleum), hydrotreated light (0,1 % w/w benzene (EINECS No 200-753-7)).): 2085 mg/m3
Exposure: Inhalation
Duration of Exposure: Long term – Systemic effects - Workers
DNEL (Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene): 26 mg/kg bw/day
Exposure: Oral
Duration of Exposure: Long term – Systemic effects - General population

DNEL (Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene): 26 mg/kg bw/day
Exposure: Dermal
Duration of Exposure: Long term – Systemic effects - General population

DNEL (Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene): 44 mg/kg bw/day
Exposure: Dermal
Duration of Exposure: Long term – Systemic effects - Workers

DNEL (Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene): 71 mg/m3
Exposure: Inhalation
Duration of Exposure: Long term – Systemic effects - General population

DNEL (Naphtha (petroleum), hydrodesulfurized heavy 0,1 w/w% benzene): 330 mg/m3
Exposure: Inhalation
Duration of Exposure: Long term – Systemic effects - Workers

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Use only CE marked protective equipment.

Respiratory Equipment

The product contains liquids with a low boiling point which are poorly absorbed on charcoal filters. The use of fresh air respiratory protective equipment is thus required. In most cases a mask with an A -filter is adequate, as the product normally is used only for a short period of time.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: Nitrile rubber. See the manufacturer s instructions

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	Brown	Characteristic	-	-	1

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
0	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Insoluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

Avoid static electricity.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
Sulfonic acids, petroleum, sod...	Rat	LD50	Oral	> 6000 mg/kg
Naphtha (petroleum), hydrotrea...	Rabbit	LD50	Dermal	> 2000 mg/kg
Naphtha (petroleum), hydrotrea...	Rat	LD50	Oral	> 5000 mg/kg

Naphtha (petroleum), hydrodesu...	Rabbit	LD50	Dermal	> 3160 mg/kg
Naphtha (petroleum), hydrodesu...	Rat	LD50	Oral	> 5000 mg/kg

Skin corrosion/irritation
No data available.

Serious eye damage/irritation
No data available.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

STOT-single exposure
May cause drowsiness or dizziness.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Long term effects
No special

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
Naphtha (petroleum), hydrodesu...	Daphnia	EC50	48 h	10-22 mg/l

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result

No data available.

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC

No data available.

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
This product contains ecotoxic substances which can have damaging effects on water-organisms. This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
The product is covered by the regulations on dangerous waste.

Waste
EWC code
16 05 04

Specific labelling
-

Contaminated packing
Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, FLAMMABLE

14.3. Transport hazard class(es)	2.1
14.4. Packing group	-
Notes	-
Tunnel restriction code	D

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Class	2.1
PG*	-
EmS	F-D, S-U
MP**	Yes
Hazardous constituent	Petroleumgases, liquified; Naphtha hydrotreated

IATA/ICAO

UN-no.	
Proper Shipping Name	
Class	
PG*	

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

-

Demands for specific education

-

Additional information

-

Sources

Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers.
EC Regulation 1272/2008 (CLP).
EC regulation 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H220 - Extremely flammable gas.
H225 - Highly flammable liquid and vapour.
H226 - Flammable liquid and vapour.
H280 - Contains gas under pressure; may explode if heated.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H411 - Toxic to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJH

Date of last essential change
(First cipher in SDS version)

30-06-2015

Date of last minor change
(Last cipher in SDS version)

22-10-2015

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
FS-35A Spray
Product no.
06593
REACH registration number
Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Freeze Spray

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
22-10-2015
SDS Version
2.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Aerosol 3; H229
EUH210
This product is not classified as dangerous.
See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)
-
Signal word
Warning
Hazard statement(s)
Pressurised container: May burst if heated. (H229)

▼Safety statement(s)	General	-
	Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210). Do not pierce or burn, even after use. (P251).
	Response	-
	Storage	Protect from sunlight. Do no expose to temperatures exceeding 50

oC/122oF. (P410+P412).

Disposal -

Identity of the substances primarily responsible for the major health hazards

-

2.3. Other hazards

Contact with the skin may cause frostbite. Any frostbite should be treated as burns.

Additional labelling

6 % by mass of the contents are flammable.
Safety data sheet available on request. (EUH210)

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	norflurane
IDENTIFICATION NOS.:	CAS-no: 811-97-2 EC-no: 212-377-0
CONTENT:	80-95%
CLP CLASSIFICATION:	Comp. Gas H280

NAME:	dimethyl ether
IDENTIFICATION NOS.:	CAS-no: 115-10-6 EC-no: 204-065-8 Index-no: 603-019-00-8
CONTENT:	5-10%
CLP CLASSIFICATION:	Press. Gas H220
NOTE:	S

( ) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Not applicable

4.2. Most important symptoms and effects, both acute and delayed

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears,

tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

4.3. Indication of any immediate medical attention and special treatment needed

No special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Halogenated compounds Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses. Aerosols may explode if heated / fire.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No specific requirements.

6.2. Environmental precautions

No specific requirements.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on “Disposal considerations ” with regard to the handling of waste. See section on 'Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original.

Storage temperature

50°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

dimethyl ether (EH40, 2005)
Long-term exposure limit (8-hour TWA reference period): 400 ppm 766 mg/m3
Short-term exposure limit (15-minute reference period): 500 ppm 958 mg/m3

norflurane (EH40/2005, 2005)
Long-term exposure limit (8-hour TWA reference period): 1000 ppm 4240 mg/m3
Short-term exposure limit (15-minute reference period): - ppm - mg/m3

▼DNEL / PNEC

No data available.

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

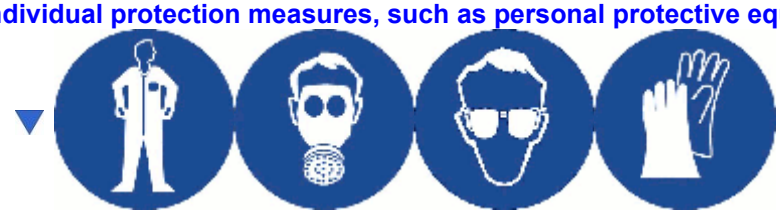
Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

Respiratory protection is not normally required in well-ventilated areas. In case of inadequate ventilation a respirator with filter A2 is recommended.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: Lether glowes. See the manufacturer s instructions

Eye protection

Use safety glasses with a side shield.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	Colourless	Characteristic	-	-	-

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
-	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Insoluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability
The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions
No special

10.4. Conditions to avoid
No special

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
dimethyl ether	Rat	LC50	Inhalation	164000
norflurane	Mouse	LC50	Inhalation	1700 g/m3

Skin corrosion/irritation
No data available.

Serious eye damage/irritation
No data available.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Long term effects
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
No data available.				

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC
No data available.			

12.4. Mobility in soil
norflurane: Log Koc= 1,408792, Calculated from LogPow (High mobility potential.).

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
No special

SECTION 13: Disposal considerations

13.1. Waste treatment methods

This product is not covered by the regulations on dangerous waste.

Waste

EWC code

16 05 04

Specific labelling

-

Contaminated packing

No specific requirements.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, SUFFOCATING
14.3. Transport hazard class(es)	2.2
14.4. Packing group	-
Notes	-
Tunnel restriction code	E

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, SUFFOCATING
Class	2.2
PG*	-
EmS	F-D, S-U
MP**	No
Hazardous constituent	Norflurane, Dimethylether

IATA/ICAO

UN-no.	
Proper Shipping Name	
Class	
PG*	

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC.

Demands for specific education

-

Additional information

Sources

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.
Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers.
EC Regulation 1272/2008 (CLP).
EC regulation 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJH

Date of last essential change
(First cipher in SDS version)

19-06-2015

Date of last minor change
(Last cipher in SDS version)

22-10-2015

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
FW-1661 Spray
Product no.
12875
REACH registration number
Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Leak Detector

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
18-01-2016
SDS Version
2.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Aerosol 3; H229

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)
-
Signal word
Warning
Hazard statement(s)
Pressurised container: May burst if heated. (H229)

Safety statement(s)	General	Keep out of reach of children. (P102).
	Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210). Do not pierce or burn, even after use. (P251). Avoid breathing spray/mist. (P261). Use only outdoors or in a well-ventilated area. (P271).
	Response	-

Storage	Protect from sunlight. Do no expose to temperatures exceeding 50 oC/122oF. (P410+P412).
Disposal	-

Identity of the substances primarily responsible for the major health hazards

-

2.3. Other hazards

Additional labelling

-

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	Propan-1,2-diol
IDENTIFICATION NOS.:	CAS-no: 57-55-6 EC-no: 200-338-0
CONTENT:	25-40%
CLP CLASSIFICATION:	NA
NAME:	N,N-bis(2-hydroxyethyl)oleamide
IDENTIFICATION NOS.:	CAS-no: 93-83-4 EC-no: 202-281-7
CONTENT:	3%
CLP CLASSIFICATION:	Skin Irrit. 2, Eye Dam. 1 H315, H318
NAME:	carbon dioxide
IDENTIFICATION NOS.:	CAS-no: 124-38-9 EC-no: 204-696-9
CONTENT:	1-3%
CLP CLASSIFICATION:	Comp. Gas H280

( ) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.

Other informations

ATEmix(oral) > 2000
Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = 0,2 - 0,3
Skin Cat. 2 Sum = Sum(Ci/S(G)CLi) = 0,2 - 0,3

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Not applicable

4.2. Most important symptoms and effects, both acute and delayed
No special

4.3. Indication of any immediate medical attention and special treatment needed
No special

Information to medics
Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

▼5.2. Special hazards arising from the substance or mixture
If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Nitrogen oxides. Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses. Aerosols may explode if heated / fire.

5.3. Advice for firefighters
Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

▼6.1. Personal precautions, protective equipment and emergency procedures
No specific requirements.

6.2. Environmental precautions
No specific requirements.

6.3. Methods and material for containment and cleaning up
Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections
See section on “Disposal considerations ” with regard to the handling of waste. See section on Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

▼7.1. Precautions for safe handling
See section on Exposure controls/personal protection for information on personal protection.

▼7.2. Conditions for safe storage, including any incompatibilities
Always store in containers of the same material as the original.

Storage temperature
50°C

7.3. Specific end use(s)
This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

▼OEL

carbon dioxide (EH40, 2011)
Long-term exposure limit (8-hour TWA reference period): 5000 ppm 9150 mg/m3
Short-term exposure limit (15-minute reference period): 15000 ppm 27400 mg/m3

▼DNEL / PNEC
No data available.

8.2. Exposure controls
Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations
Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Use only CE marked protective equipment.

Respiratory Equipment

Respiratory protection is not normally required in well-ventilated areas. In case of inadequate ventilation a respirator with filter A2 is recommended.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

No specific requirements.

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	White	None	-	-	0,76

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
-	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Soluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

No special

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
N,N-bis(2-hydroxyethyl)oleamid...	Mouse	LD50	Oral	10000 mg/kg
Propan-1,2-diol	Mouse	LD50	Oral	22000 mg/kg
Propan-1,2-diol	Rabbit	LD50		20800 mg/kg
Propan-1,2-diol	Rat	LD50		6423 mg/kg

Skin corrosion/irritation
No data available.

Serious eye damage/irritation
No data available.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Long term effects
No special

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
Propan-1,2-diol	Daphnia	LC50	48 h	1000 mg/L
Propan-1,2-diol	Fish	LC50	96 h	710 mg/L

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC
No data available.			

12.4. Mobility in soil
Propan-1,2-diol: Log Koc= -0,650148, Calculated from LogPow ().

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
No special

SECTION 13: Disposal considerations

13.1. Waste treatment methods
This product is not covered by the regulations on dangerous waste.

Waste
EWC code
16 05 04

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, SUFFOCATING
14.3. Transport hazard class(es)	2.2
14.4. Packing group	-
Notes	-
Tunnel restriction code	E

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, SUFFOCATING
Class	2.2
PG*	-
EmS	F-D, S-U
MP**	No
Hazardous constituent	-

IATA/ICAO

UN-no.	
Proper Shipping Name	
Class	
PG*	

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

-

Demands for specific education

-

Additional information

Sources

Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers.
EC Regulation 1272/2008 (CLP).
EC regulation 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H280 - Contains gas under pressure; may explode if heated.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJHMJH

Date of last essential change
(First cipher in SDS version)

26-05-2015

Date of last minor change
(Last cipher in SDS version)

18-01-2016

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
GM-12 Sliding Agent
Product no.
07395
REACH registration number
Not applicable
Other means of identification

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Sliding Agent

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
17-06-2015
SDS Version
1.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Aerosol 1; H229
Aerosol 1; H222

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)

Signal word
Danger
Hazard statement(s)
Pressurised container: May burst if heated. (H229)

Extremely flammable aerosol. (H222)

Safety statement(s)

General	-
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210). Do not spray on an open flame or other ignition source. (P211). Do not pierce or burn, even after use. (P251). Use only outdoors or in a well-ventilated area. (P271).
Response	-
Storage	Protect from sunlight. Do no expose to temperatures exceeding 50 oC/122oF. (P410+P412).
Disposal	-

Identity of the substances primarily responsible for the major health hazards

-

2.3. Other hazards

This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

-

Additional warnings

-

VOC

VOC-MA : 475 g/l, MA IMUM VOC CONTENT (B/e): 840 g/l.

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	Petroleum gases, liquefied (0,1 % w/w 1,3-butadiene (EINECS No. 203-450-8))
IDENTIFICATION NOS.:	CAS-no: 68476-85-7 EC-no: 270-704-2 Index-no: 649-202-00-6
CONTENT:	60-80%
CLP CLASSIFICATION:	Comp. Gas, Flam. Gas 1 H220, H280
NAME:	cyclopentane
IDENTIFICATION NOS.:	CAS-no: 287-92-3 EC-no: 206-016-6 Index-no: 601-030-00-2
CONTENT:	15-25%
CLP CLASSIFICATION:	Flam. Liq. 2, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 3 H225, H304, H336, H412
NOTE:	S

( ) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

N chronic (CAT 4) Sum = Sum(Ci/M(chronic)i 25 0.1 10 CAT4) = 0,57056 - 0,85584

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

4.3. Indication of any immediate medical attention and special treatment needed

No special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses.

Aerosols may explode if heated / fire.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions

No specific requirements.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on “Disposal considerations ” with regard to the handling of waste. See section on 'Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Storage temperature

50°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

Petroleum gases, liquefied (0,1 % w/w 1,3-butadiene (EINECS...
Long-term exposure limit (8-hour TWA reference period): 1000 ppm 1750 mg/m3
Short-term exposure limit (15-minute reference period): 1250 ppm 2180 mg/m3

DNEL / PNEC

No data available.

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

▼ Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

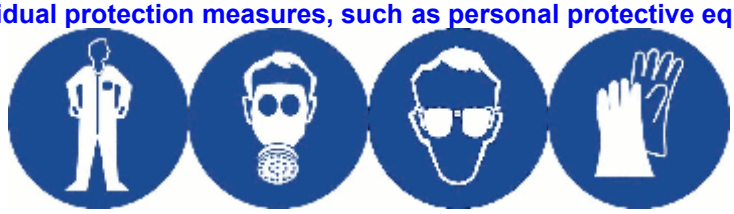
Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

The product contains liquids with a low boiling point which are poorly absorbed on charcoal filters. The use of fresh air respiratory protective equipment is thus required. In most cases a mask with an A -filter is adequate, as the product normally is used only for a short period of time.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: Nitrile rubber. . See the manufacturer s instructions

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	Colourless	Sweet	ca. 7	-	0,6

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
-100	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Insoluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions
No special

10.4. Conditions to avoid
Avoid static electricity.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
No data available.				

Skin corrosion/irritation
No data available.

Serious eye damage/irritation
No data available.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Long term effects
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
cyclopentane	Fish	LC50	96 h	100000 ug/L

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC

No data available.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code

16 05 04

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es)	2.1
14.4. Packing group	II
Notes	-
Tunnel restriction code	D

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Class	2.1
PG*	II
EmS	F-D, S-U
MP**	-
Hazardous constituent	Petroleum gas; liquefied, Cyclopentane

IATA/ICAO

UN-no.	
Proper Shipping Name	
Class	
PG*	

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC.

Demands for specific education

-

Additional information

Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H220 - Extremely flammable gas.
H225 - Highly flammable liquid and vapour.
H280 - Contains gas under pressure; may explode if heated.
H304 - May be fatal if swallowed and enters airways.
H336 - May cause drowsiness or dizziness.
H412 - Harmful to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJH

Date of last essential change
(First cipher in SDS version)

-

Date of last minor change
(Last cipher in SDS version)

-

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
RAL Colors
Product no.
07xxx
REACH registration number
Not applicable
Other means of identification

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Paint

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
20-05-2015
SDS Version
1.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

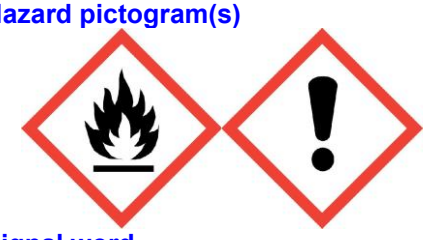
2.1. Classification of the substance or mixture

Eye Irrit. 2, STOT SE 3, Aerosol 1 // H229, EUH210, EUH066, H336, H319, H222
See full text of H/R-phrases in section 2.2.

DPD/DSD Classification
Extremely flammable (F+). Irritant (i).
Vapours may cause drowsiness and dizziness (R67). Repeated exposure may cause skin dryness or cracking (R66). Irritating to eyes (R36). Extremely flammable (R12).

2.2. Label elements

Hazard pictogram(s)



Signal word
Danger

Hazard statement(s)

Extremely flammable aerosol. (H222)
Causes serious eye irritation. (H319)
May cause drowsiness or dizziness. (H336)
Pressurised container: May burst if heated. (H229)

Safety statement(s)

General	Keep out of reach of children. (P102)
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210) Do not spray on an open flame or other ignition source. (P211) Do not pierce or burn, even after use. (P251) Avoid breathing spray/mist. (P261) Use only outdoors or in a well-ventilated area. (P271)
Response	-
Storage	Protect from sunlight. Do no expose to temperatures exceeding 50 oC/122oF. (P410+P412)
Disposal	-

Identity of the substances primarily responsible for the major health hazards

acetone, 2-methoxy-1-methylethyl acetate

2.3. Other hazards

This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

Repeated exposure may cause skin dryness or cracking. (EUH066) Safety data sheet available on request. (EUH210)

Additional warnings

-

VOC

VOC-MA : 716 g/l, MA IMUM VOC CONTENT (B/e): 840 g/l.

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances

NAME:	dimethyl ether
IDENTIFICATION NOS.:	CAS-no: 115-10-6 EC-no: 204-065-8 Index-no: 603-019-00-8
CONTENT:	60-80%
DSD CLASSIFICATION:	F+; R12
CLP CLASSIFICATION:	Press. Gas H220
NOTE:	S

NAME:	acetone
IDENTIFICATION NOS.:	CAS-no: 67-64-1 EC-no: 200-662-2 Index-no: 606-001-00-8
CONTENT:	40-60%
DSD CLASSIFICATION:	F; R11 i; R36 R66 R67
CLP CLASSIFICATION:	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3 H225, H319, H336, EUH066
NOTE:	S

NAME:	2-methoxy-1-methylethyl acetate
IDENTIFICATION NOS.:	CAS-no: 108-65-6 EC-no: 203-603-9 Index-no: 607-195-00-7
CONTENT:	5-10%
DSD CLASSIFICATION:	R10
CLP CLASSIFICATION:	Flam. Liq. 3 H226
NOTE:	S

( ) See full text of H/R-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet.

Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes with water (20-30°C) for at least 15 minutes. Call a doctor.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

4.3. Indication of any immediate medical attention and special treatment needed

No special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses. Aerosols may explode if heated / fire.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours from waste material. Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions

No specific requirements.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on "Disposal considerations " with regard to the handling of waste. See section on Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Smoking, consumption of food or liquid, and storage of tobacco, food or liquids are not allowed in the workrooms. See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Storage temperature

50°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

2-methoxy-1-methylethyl acetate (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): 50 ppm 274 mg/m3
Short-term exposure limit (15-minute reference period): 100 ppm 548 mg/m3
Comments: Sk (Sk = Can be absorbed through skin.)

acetone (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): 500 ppm 1210 mg/m3
Short-term exposure limit (15-minute reference period): 1500 ppm 3620 mg/m3

dimethyl ether (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): 400 ppm 766 mg/m3
Short-term exposure limit (15-minute reference period): 500 ppm 958 mg/m3

DNEL / PNEC

No data available.

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

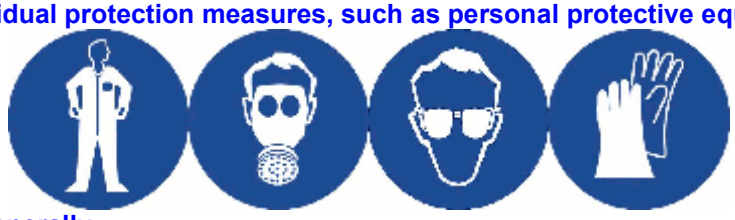
Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment



Generally

Only CE-marked personal protection equipment should be used. Use only CE marked protective equipment.

Respiratory Equipment

The product contains liquids with a low boiling point which are poorly absorbed on charcoal filters. The use of fresh air respiratory protective equipment is thus required. In most cases a mask with an A -filter is adequate, as the product normally is used only for a short period of time.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: 4H/Barrier. . See the manufacturer s instructions

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	Various colours	Characteristic	-	-	0,8

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
0	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Insoluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

Avoid static electricity.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
dimethyl ether	Rat	LC50	Inhalation	164000

Skin corrosion/irritation

No data available.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

STOT-single exposure

May cause drowsiness or dizziness.

STOT-repeated exposure

No data available.

Aspiration hazard

No data available.

Long term effects

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result

No data available.

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result

No data available.

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC

No data available.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

No special

SECTION 13: Disposal considerations

13.1. Waste treatment methods

This product is not covered by the regulations on dangerous waste.

Waste

EWC code
16 05 04

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es)	2.1
14.4. Packing group	II
Notes	-
Tunnel restriction code	D

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Class	2.1

PG*	II
EmS	F-D, S-U
MP**	No
Hazardous constituent	Acetone, Dimethylether

IATA/ICAO

UN-no.

Proper Shipping Name

Class

PG*

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group

( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC.

Demands for specific education

-

Additional information

-

Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H/R-phrases as mentioned in section 3

R10 - Flammable.
R11 - Highly flammable.
R12 - Extremely flammable.
R36 - Irritating to eyes.
R66 - Repeated exposure may cause skin dryness or cracking.
R67 - Vapours may cause drowsiness and dizziness.
H220 - Extremely flammable gas.
H225 - Highly flammable liquid and vapour.
H226 - Flammable liquid and vapour.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
EUH066 - Repeated exposure may cause skin dryness or cracking.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJH

Date of last essential change
(First cipher in SDS version)

-

Date of last minor change
(Last cipher in SDS version)

-

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
Zn-595 Zinc Spray
Product no.
25285
REACH registration number
Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Zincspray

Uses advised against
-
The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
ITW Spraytec Nordic
Priorsvej 36
8600 Silkeborg
Tlf.: +45 86 82 64 44
SDS info.: www.itwinfo.dk
Contact person
Kundeservice: tlf 8682 6444
E-mail
info itw-spraytec.dk
SDS date
22-10-2015
SDS Version
2.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Aerosol 1; H229
Aerosol 1; H222
Skin Irrit. 2; H315
Aquatic Acute 1; H400
Aquatic Chronic 1; H410

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)

Signal word
Danger
Hazard statement(s)

Pressurised container: May burst if heated. (H229)
Extremely flammable aerosol. (H222)
Causes skin irritation. (H315)
Very toxic to aquatic life with long lasting effects. (H410)

Safety statement(s)

General	-
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210). Do not spray on an open flame or other ignition source. (P211). Do not pierce or burn, even after use. (P251). Use only outdoors or in a well-ventilated area. (P271). Avoid release to the environment. (P273).
Response	-
Storage	Protect from sunlight. Do no expose to temperatures exceeding 50 oC/122oF. (P410+P412).
Disposal	-

Identity of the substances primarily responsible for the major health hazards

-

2.3. Other hazards

This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

-

Additional warnings

-

VOC

VOC-MA : 621 g/l, MA IMUM VOC CONTENT (B/e): 840 g/l.

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	zinc
IDENTIFICATION NOS.:	CAS-no: 7440-66-6 EC-no: 231-175-3 Index-no: 030-001-00-1
CONTENT:	40-60%
CLP CLASSIFICATION:	Aquatic Acute 1, Aquatic Chronic 1 H400, H410

NAME:	Aromatic hydrocarbons, C8 Light Oil Redistillate, high boiling
IDENTIFICATION NOS.:	CAS-no: 90989-38-1 EC-no: 292-694-9 Index-no: 648-010-00-
CONTENT:	15-25%
CLP CLASSIFICATION:	Flam. Liq. 3, Acute Tox. 4, Skin Irrit. 2, Asp. Tox. 1 H226, H304, H312, H315, H332

NAME:	Butane (0,1 % butadiene (203-450-8)
IDENTIFICATION NOS.:	CAS-no: 106-97-8 EC-no: 203-448-7 Index-no: 601-004-00-0
CONTENT:	10-15%
CLP CLASSIFICATION:	Flam. Gas 1 H220
NOTE:	S

NAME:	acetone
IDENTIFICATION NOS.:	CAS-no: 67-64-1 EC-no: 200-662-2 Index-no: 606-001-00-8
CONTENT:	5-10%
CLP CLASSIFICATION:	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3 H225, H319, H336, EUH066
NOTE:	S

NAME:	zinc oxide
IDENTIFICATION NOS.:	CAS-no: 1314-13-2 EC-no: 215-222-5 Index-no: 030-013-00-7
CONTENT:	5-10%
CLP CLASSIFICATION:	Aquatic Acute 1, Aquatic Chronic 1 H400, H410

NAME:	xylene
IDENTIFICATION NOS.:	CAS-no: 1330-20-7 EC-no: 215-535-7 Index-no: 601-022-00-9
CONTENT:	5-10%
CLP CLASSIFICATION:	Flam. Liq. 3, Acute tox. 4, Skin Irrit. 2 H226, H312, H315, H332
NOTE:	S

NAME:	propane
IDENTIFICATION NOS.:	CAS-no: 74-98-6 EC-no: 200-827-9 Index-no: 601-003-00-5
CONTENT:	5-10%
CLP CLASSIFICATION:	Press. Gas H220
NAME:	dimethyl ether
IDENTIFICATION NOS.:	CAS-no: 115-10-6 EC-no: 204-065-8 Index-no: 603-019-00-8
CONTENT:	5-10%
CLP CLASSIFICATION:	Press. Gas H220
NOTE:	S
NAME:	1-nitropropane
IDENTIFICATION NOS.:	CAS-no: 108-03-2 EC-no: 203-544-9 Index-no: 609-001-00-6
CONTENT:	3-5%
CLP CLASSIFICATION:	Flam. Liq. 3, Acute tox. 4 H226, H302, H312, H332
NOTE:	S

( ) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

ATEmix(inhale, vapour) > 20
ATEmix(dermal) > 2000
ATEmix(oral) > 2000
Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = 0,56 - 0,84
Skin Cat. 2 Sum = Sum(Ci/S(G)CLi) = 2,552 - 3,828
N chronic (CAT 1) Sum = Sum(Ci/M(chronic)i 25) = 1,5168 - 2,2752
N acute (CAT 1) Sum = Sum(Ci/M(acute)i 25) = 1,5168 - 2,2752

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

Give the person plenty to drink and stay with the person. If the person feels unwell, contact a doctor immediately and take this safety data sheet or the label from the product with you. Do not induce vomiting unless recommended by the doctor. Hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

4.3. Indication of any immediate medical attention and special treatment needed

No special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses. Aerosols may explode if heated / fire.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on “Disposal considerations ” with regard to the handling of waste. See section on 'Exposure controls/personal protection for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. See section on Exposure controls/personal protection for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Storage temperature

50°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

▼OEL

dimethyl ether (EH40, 2005)
Long-term exposure limit (8-hour TWA reference period): 400 ppm 766 mg/m3
Short-term exposure limit (15-minute reference period): 500 ppm 958 mg/m3

xylene (EH40, 2005)
Long-term exposure limit (8-hour TWA reference period): 50 ppm 220 mg/m3
Short-term exposure limit (15-minute reference period): 100 ppm 441 mg/m3
Comments: Sk BMGV (Bmgv = Biological Monitoring Guidance Value. Sk = Can be absorbed through skin.)

acetone (EH40, 2005)
Long-term exposure limit (8-hour TWA reference period): 500 ppm 1210 mg/m3
Short-term exposure limit (15-minute reference period): 1500 ppm 3620 mg/m3

Butane (0,1 % butadiene (203-450-8) (EH40/2005, 2005)

Long-term exposure limit (8-hour TWA reference period): 600 ppm 1450 mg/m3
Short-term exposure limit (15-minute reference period): 750 ppm 1810 mg/m3

DNEL / PNEC

DNEL (zinc): 5 mg/m
Exposure: Inhalation
Duration of Exposure: Long term – Systemic effects

DNEL (zinc): 83 mg/kg bw/day
Exposure: Dermal
Duration of Exposure: Long term – Systemic effects
PNEC (zinc): 20.6 g/L
Duration of Exposure: Single

PNEC (zinc): 6.1 g/L
Duration of Exposure: Single

PNEC (zinc): 117.8 mg/kg sediment dw
Duration of Exposure: Single

PNEC (zinc): 56.5 mg/kg sediment dw
Duration of Exposure: Single

PNEC (zinc): 35.6 mg/kg soil dw
Duration of Exposure: Single

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values below.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see below). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

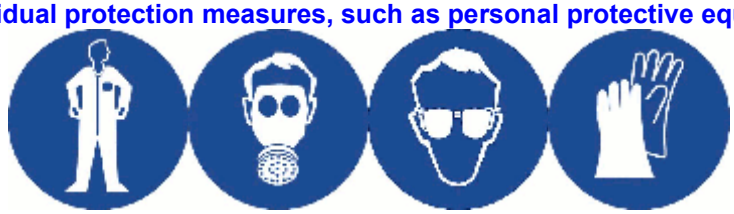
Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

The product contains liquids with a low boiling point which are poorly absorbed on charcoal filters. The use of fresh air respiratory protective equipment is thus required. In most cases a mask with an A -filter is adequate, as the product normally is used only for a short period of time.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: 4H/Barrier. See the manufacturer s instructions

Eye protection

Use safety glasses with a side shield.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Aerosol	Gray	Characteristic	-	-	1,292

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-	-	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
0	-	-

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Insoluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions
No special

10.4. Conditions to avoid
Avoid static electricity.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
dimethyl ether	Rat	LC50	Inhalation	164000
zinc oxide	Mouse	LD50	Oral	7950 mg/kg
zinc oxide	Mouse	LC50	Inhalation	2500 mg/m3
zinc oxide	Rat	LD50	Intraperitoneal	240 mg/kg
zinc	Rat	LD50	Oral	>2000 mg/kg bw
zinc	Rat	LC50	Inhalation	>5.41 mg/m

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/irritation
No data available.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Long term effects

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin s natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result
zinc oxide	Daphnia	LC50	48 h	2600 g/L
zinc oxide	Fish	LC50	96 h	1100 g/L

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC
Butane (0,1 % butadiene (203-...	No	2,89	No data available

12.4. Mobility in soil

Butane (0,1 % butadiene (203-...: Log Koc= 2,366991, Calculated from LogPow (Moderate mobility potential.).

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

This product contains ecotoxic substances which can have damaging effects on water-organisms. This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code

16 05 04

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	1950
14.2. UN proper shipping name	AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es)	2.1
14.4. Packing group	-
Notes	-
Tunnel restriction code	D

IMDG

UN-no.	1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Class	2.1
PG*	-
EmS	F-D, S-U

MP** yes
Hazardous constituent Propan, Butan, ylene, Dimethyl Ether,

IATA/ICAO
UN-no.
Proper Shipping Name
Class
PG*

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

( ) Packing group
( ) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC.

Demands for specific education

-

Additional information

Sources

COUNCIL DIRECTIVE 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.
Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.
Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers.
IDirective 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC.
EC Regulation 1272/2008 (CLP).
EC regulation 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H220 - Extremely flammable gas.
H225 - Highly flammable liquid and vapour.
H226 - Flammable liquid and vapour.
H302 - Harmful if swallowed.
H304 - May be fatal if swallowed and enters airways.
H312 - Harmful in contact with skin.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H336 - May cause drowsiness or dizziness.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.
EUH066 - Repeated exposure may cause skin dryness or cracking.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

MJH

Date of last essential change
(First cipher in SDS version)

17-06-2015

Date of last minor change
(Last cipher in SDS version)

22-10-2015

SAFETY DATA SHEET

Issue Date 09-Feb-2015 **Revision Date** 09-Feb-2015 **Version** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Kluberplex AG 11-462

Other means of identification
Product code: 039091
Synonyms None

Recommended use of the chemical and restrictions on use
Recommended Use Lubricant.
Uses advised against Consumer use

Details of the supplier of the safety data sheet
Supplier Address
Kl ber Lubrication NA, LP
32 Industrial Drive
Londonderry, NH 03053
Phone: (603) 647-4104
Fax: (603) 647-4106

Emergency telephone number
Emergency Telephone CHEMTREC: 1-800-424-9300; INTERNATIONAL: (703) 527-3887

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

EMERGENCY OVERVIEW

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Paste **Physical state** Solid **Odor** Mild

Hazards not otherwise classified (HNOC)
Other information
• Harmful to aquatic life with long lasting effects
Unknown Acute Toxicity
39.842% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Components	CAS-No	Weight %	Trade Secret
Mineral oil	Proprietary	40 - 50%	
Zinc sulfide	Proprietary	10 - 20%	

4. FIRST AID MEASURES

First aid measures

Eye contact: Flush eye with water for 15 minutes. If symptoms persist, call a physician.

Skin contact: Rinse with plenty of water. If skin irritation persists, call a physician.

Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

Ingestion: Do not induce vomiting. Consult a physician.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Carbon dioxide (CO2). Dry chemical. Dry sand. Water spray mist or foam.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapors. Water may be used to cool closed containers.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Special protective equipment for firefighters:
In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. Standard procedure for chemical fires.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Contaminated surfaces will be extremely slippery. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Environmental precautions

Environmental precautions: Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: Scrape-up. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Avoid contact with eyes and skin. Do not breathe vapors or spray mist. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep cool. Keep in properly labelled containers. Keep away from heat and sources of ignition. Handle and open container with care

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Components	ACGIH TLV	OSHA (TWA mg/m ^{3}):	IDLH:
Mineral oil -	5 mg/m ^{3} (oil mist)	5 mg/m ^{3} (oil mist)	

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.
Hand protection: Gloves made of plastic or rubber
Eye protection: Avoid contact with eyes.
Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect
General Hygiene Considerations Avoid contact with skin, eyes and clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance Paste **Odor** Mild **Color** White **Odor threshold** No information available

Property	Values	Remarks • Method	Property	Values
Melting point/freezing point	No information available		**pH**	Not applicable
			Boiling point / boiling range	No information available
Flash point	Not Applicable	ISO 2592	**Evaporation rate**	No information available
Flammability (solid, gas)	No information available		**Flammability Limit in Air**	
Upper flammability limit:	No information available		**Lower flammability limit:**	No information available
Vapor pressure	0.001 hPa, 20 °C		**Vapor density**	No information available
Specific Gravity	1.07		**Water solubility**	Insoluble in water
Solubility in other solvents	No information available		**Partition coefficient**	No information available
Autoignition temperature	No information available		**Decomposition temperature**	No information available

Kinematic viscosity	No information available	**Dynamic viscosity**	No information available
Explosive properties	No information available		
Oxidizing properties	No information available		

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable

Chemical stability

Stability Stable under normal conditions

Possibility of Hazardous Reactions

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Heat, flames and sparks

Hazardous Decomposition Products

Hazardous Decomposition Products None under normal processing

Incompatible materials

Incompatible materials Strong oxidising agents

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Eye contact Contact with eyes may cause irritation.

Skin contact Prolonged contact may cause redness and irritation.

Inhalation Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Components	Oral LD50	Dermal LD50	Inhalation LC50
Zinc sulfide -	-	-	> 5040 mg/m³ (Rat) 4 h

Information on toxicological effects

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No sensitization responses were observed.
Mutagenic effects:	Did not show mutagenic or teratogenic effects in animal experiments.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
STOT - Single Exposure	None under normal use conditions.
STOT - Repeated Exposure	None under normal use conditions.
Aspiration hazard	Not applicable.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity	39.842% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	5361 mg/kg
ATEmix (dermal)	2359 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

39.462% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT	Not Regulated by any means of transportation

15. REGULATORY INFORMATION

International Inventories

TSCA:	Listed in TSCA
DSL:	Not listed in DSL
EINECS/ELINCS	This product complies with EINECS/ELINCS
CHINA:	This product does not comply with China IECSC.
KECL:	This product does not comply with Korea KECL.

PICCS: This product does not comply with Philippines PICCS.
AICS: This product does not comply with Australia AICS

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Components	SARA 313 Threshold:
Zinc sulfide	Zinc compound (1%)

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

State Regulations (RTK)

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Components	NJRTK:	MARTK:	PARTK:
Mineral oil -	Substance no. 1437 Listed. Substance no. 4004 Listed.	Not Listed	Not Listed
Zinc sulfide -	Substance no. 3012 Listed	Not Listed	Listed

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Nfpa:
Health: 1
Flammability: 1
Instability 0
NFPA/HMIS * for Carc, Muta, Tera, Specific Organ
HMIS health rating:
Health: 1
Flammability: 1
Physical hazards 0
Personal protection B

Issue Date 09-Feb-2015
Revision Date 09-Feb-2015
Revision Note
Not applicable

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Issue Date 21-Jan-2015 **Revision Date** 21-Jan-2015 **Version** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Kl berplex BEM 41-141

Other means of identification
Product code: 020320
Synonyms None

Recommended use of the chemical and restrictions on use
Recommended Use Lubricant.
Uses advised against Consumer use

Details of the supplier of the safety data sheet
Supplier Address
Kl ber Lubrication NA, LP
32 Industrial Drive
Londonderry, NH 03053
Phone: (603) 647-4104
Fax: (603) 647-4106

Emergency telephone number
Emergency Telephone CHEMTREC: 1-800-424-9300; INTERNATIONAL: (703) 527-3887

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

EMERGENCY OVERVIEW

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Paste **Physical state** Solid **Odor** Mild

Hazards not otherwise classified (HNOC)
Other information
Unknown Acute Toxicity
17.50566% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Components	CAS-No	Weight %	Trade Secret
Molybdenum complex	Proprietary	1-5	

4. FIRST AID MEASURES

First aid measures

Eye contact: Flush eye with water for 15 minutes. If symptoms persist, call a physician.

Skin contact: Rinse with plenty of water. If skin irritation persists, call a physician.

Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

Ingestion: Do not induce vomiting. Consult a physician.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Carbon dioxide (CO2). Dry chemical. Dry sand. Water spray mist or foam.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapors. Water may be used to cool closed containers.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Special protective equipment for firefighters:
In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. Standard procedure for chemical fires.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Contaminated surfaces will be extremely slippery. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Environmental precautions

Environmental precautions: Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: Scrape-up. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. Soak up with oil absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Spilling onto the container s outside will make container slippery. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep cool. Keep in properly labelled containers. Keep away from heat and sources of ignition

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines Contains mineral oil, vegetable oil, and/or synthetic oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg/m^3, ACGIH STEL of 10 mg/m^3.

Components	ACGIH TLV	OSHA (TWA mg/m^3):	IDLH:
Molybdenum complex -	-	15 mg/m^3 (molybdenum compound)	

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.
Hand protection: Impervious gloves
Eye protection: Safety glasses with side-shields. Avoid contact with eyes.
Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect
General Hygiene Considerations Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance Paste **Odor** Mild **Color** Yellow **Odor threshold** No information available

Property	Values	Remarks • Method	Property	Values
Melting point/freezing point	No information available		**pH**	Not applicable
			Boiling point / boiling range	No information available
Flash point	Not Applicable	ISO 2592	**Evaporation rate**	No information available
Flammability (solid, gas)	No information available		**Flammability Limit in Air**	
Upper flammability limit:	No information available		**Lower flammability limit:**	No information available
Vapor pressure	0.001 hPa, 20 °C		**Vapor density**	No information available
Specific Gravity	0.88		**Water solubility**	Insoluble in water
Solubility in other solvents	No information available		**Partition coefficient**	No information available
Autoignition temperature	No information available		**Decomposition temperature**	No information available
Kinematic viscosity	No information available		**Dynamic viscosity**	No information available
Explosive properties	No information available			

Oxidizing properties	No information available

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable

Chemical stability

Stability Stable under normal conditions

Possibility of Hazardous Reactions

Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Heat, flames and sparks

Hazardous Decomposition Products

Hazardous Decomposition Products None under normal processing

Incompatible materials

Incompatible materials Strong oxidising agents

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information
Eye contact	Contact with eyes may cause irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Inhalation	Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Information on toxicological effects

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No sensitization responses were observed.
Mutagenic effects:	Did not show mutagenic or teratogenic effects in animal experiments.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
STOT - Single Exposure	None under normal use conditions.
STOT - Repeated Exposure	None under normal use conditions.
Aspiration hazard	Not applicable.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 17.50566% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 6171 mg/kg
ATEmix (dermal) 3739 mg/kg
ATEmix (inhalation-dust/mist) 9.5 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

No known hazards to the aquatic environment.

16.576% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
The product is insoluble and floats on water.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT Not Regulated by any means of transportation

15. REGULATORY INFORMATION

International Inventories

TSCA: Listed in TSCA
DSL: All of the components in this product are listed in DSL
EINECS/ELINCS This product complies with EINECS/ELINCS
CHINA: This product complies with China IECSC.
KECL: This product does not comply with Korea KECL.
PICCS: This product does not comply with Philippines PICCS.
AICS: All the constituents of this material are listed on the Australian AICS

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

State Regulations (RTK)

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Nfpa:
Health: 1
Flammability: 1
Instability 0
NFPA/HMIS * for Carc, Muta, Tera, Specific Organ
HMIS health rating:
Health: 1
Flammability: 1
Physical hazards 0
Personal protection B

Issue Date	21-Jan-2015
Revision Date	21-Jan-2015

Revision Note
Not applicable

Disclaimer

The information and recommendations contained herein are based upon tests believed to be reliable. However, Klüber does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. Klüber assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 18.03.2010 Revision: 03.03.2009

*
1 Identification of the substance/preparation and of the company/undertaking

· **Product details**

· **Trade name: Klübersynth GEM 4-220N**

· **Article number:** 012234
· **Application of the substance / the preparation** Lubricating oil

· **Manufacturer/Supplier:**
KLÜBER LUBRICATION MÜNCHEN KG
Geisenhausenerstrasse 7
D-81379 München
Tel.: 0049 (0) 897876-0
Fax: 0049 (0) 897876-333

· **Further information obtainable from:**
Material Compliance Management
E-Mail: mcm@klueber.com

· **Information in case of emergency:** 0049 (0) 89 7876 700 (24 hrs)

*
2 Hazards identification

· **Hazard description:** Not applicable.
· **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

*
3 Composition/information on ingredients

· **Chemical characterization**
· **Description:**
Synthetic hydrocarbon oil
ester oil

· **Dangerous components:** Void
· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Wash off with soap and plenty of water.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.

5 Fire-fighting measures

· **Suitable extinguishing agents:**
Water haze

(Contd. on page 2)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 18.03.2010 Revision: 03.03.2009

Trade name: Klübersynth GEM 4-220N

(Contd. of page 1)

Foam
Fire-extinguishing powder
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards caused by the substance, its products of combustion or resulting gases:**
In case of fire, the following can be released:
Carbon monoxide (CO)
Hydrocarbons
· **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Standard procedure for chemical fires.
· **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

· **Person-related safety precautions:** Particular danger of slipping on leaked/spilled product.
· **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
· **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.

7 Handling and storage

· **Handling:**
· **Information for safe handling:** Prevent formation of aerosols.
· **Information about fire - and explosion protection:** No special measures required.

· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in cool, dry conditions in well sealed receptacles.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
· **Further information about storage conditions:** None.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists valid during the making were used as basis.

· **Personal protective equipment:**
· **General protective and hygienic measures:**
Do not inhale gases / fumes / aerosols.
Immediately remove all soiled and contaminated clothing
Avoid close or long term contact with the skin.
Be sure to clean skin thoroughly after work and before breaks.
· **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
· **Eye protection:** Goggles recommended during refilling

(Contd. on page 3)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 18.03.2010 Revision: 03.03.2009

Trade name: Klübersynth GEM 4-220N

(Contd. of page 2)

*
9 Physical and chemical properties

· **General Information**

Form:	Fluid
Colour:	Light yellow
Odour:	Product specific

· **Change in condition**

Pour point	~ - 40°C (DIN ISO 3016)

· **Flash point:** > 200°C (DIN ISO 2592)

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20°C:** ~ 0.85 g/cm³ (DIN 51757)

· **Solubility in / Miscibility with water:** Insoluble.

· **Viscosity:**

Kinematic at 40°C:	~ 220 mm²/s (DIN 51562)

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Materials to be avoided:** oxidizing agents
· **Dangerous reactions** No dangerous reactions known.
· **Dangerous decomposition products:** none under normal use

11 Toxicological information

· **Additional toxicological information:**
Prolonged skin contact may cause skin irritation and/or dermatitis.

*
12 Ecological information

· **Ecotoxical effects:**
· **Behaviour in sewage processing plants:** The product can be mechanically separated.
· **General notes:** Do not allow product to reach ground water, water course or sewage system.

13 Disposal considerations

· **Product:**
· **Recommendation** Can be incinerated in accordance with local and national regulations.
· **Waste disposal key:**
For this product no waste disposal key according the European Waste Catalogue (EWC) can be determined, as only the purpose of application defined by the user enables an allocation. The waste code number has to be determined in accordance with the local waste disposer.

· **Uncleaned packaging:**
· **Recommendation:**
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

(Contd. on page 4)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 18.03.2010 Revision: 03.03.2009

Trade name: Klübersynth GEM 4-220N

(Contd. of page 3)

14 Transport information

· **Land transport ADR/RID (cross-border)**
· **ADR/RID class:** -

· **Maritime transport IMDG:**
· **IMDG Class:** -

· **Air transport ICAO-TI and IATA-DGR:**
· **ICAO/IATA Class:** -

· **Transport/Additional information:**
Not classified as dangerous according to the above specifications.

*
15 Regulatory information

· **Labelling according to EU guidelines:**
The product is not subject to classification according to the calculation methods of the "General Classification Guideline for Preparations of the EU" as issued in the latest valid version.

· **National regulations:**

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**
None of the ingredients is listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Material Compliance Management
· **Contact:** +49(0)897876-1564
· *** Data compared to the previous version altered.**

Revision Number: 005.0 **Issue date:** 06/07/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite 243**
Product type: Anaerobic Sealant

IDH number: 230760
Item number: 24300
Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: 860.571.5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state: Liquid
Color: Blue
Odor: Characteristic

HEALTH: 2
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: See MSDS Section 8

WARNING: MAY CAUSE ALLERGIC SKIN REACTION.
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Lungs, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.
Skin contact: May cause skin irritation. May cause allergic skin reaction.
Eye contact: Contact with eyes will cause irritation.
Ingestion: Not expected to be harmful by ingestion.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Polyglycol dimethacrylate	25852-47-5	60 - 100
Polyglycol dioctanoate	18268-70-7	10 - 30
Amorphous fumed silica	68611-44-9	1 - 5
1-Acetyl-2-phenylhydrazine	114-83-0	0.1 - 1
Cumene	98-82-8	0.1 - 1

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If symptoms develop and persist, get medical attention.

Skin contact: Wash clothing before reuse. If symptoms develop and persist, get medical attention. Remove contaminated clothing and footwear. Wash with soap and water.

Eye contact: Get medical attention. Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time.

Ingestion: Get medical attention. Do not induce vomiting. Keep individual calm.

5. FIRE FIGHTING MEASURES

Flash point: > 93 °C (> 199.4 °F) Tagliabue closed cup

Autoignition temperature: Not available.

Flammable/Explosive limits - lower: Not available.

Flammable/Explosive limits - upper: Not available.

Extinguishing media: If product is involved in fire extinguish with dry powder, foam or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Unusual fire or explosion hazards: None

Hazardous combustion products: Irritating organic vapours. Oxides of carbon. Oxides of sulfur. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Store in a partly filled, closed container until disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling.

Storage: Not available.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Polyglycol dioctanoate	None	None	None	None
Amorphous fumed silica	None	None	None	None
1-Acetyl-2-phenylhydrazine	None	None	None	None
Cumene	50 ppm TWA	50 ppm (245 mg/m3) TWA (SKIN)	None	None

Engineering controls: Ensure adequate ventilation. Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

Respiratory protection: No personal respiratory protective equipment normally required. If ventilation is not sufficient to effectively prevent buildup of vapor/mist/fume/dust, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Blue
Odor:	Characteristic
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	0.1 mm hg (80 °F (26.7 °C))
Boiling point/range:	> 300 °F (> 148.9 °C)
Melting point/ range:	Not available.
Specific gravity:	1.08 at 68 °F (20°C)
Vapor density:	Not available.
Flash point:	> 93 °C (> 199.4 °F) Tagliabue closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Partially soluble
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.73 %; 7.21 g/l

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: Will not occur.

Hazardous decomposition products: Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours. Oxides of carbon.

Incompatible materials: Strong alkalis. Reducing agents. Oxygen scavengers. Oxidizing agents. Other polymerization initiators. Strong oxidizing agents.

Conditions to avoid: See "Handling and Storage" (Section 7) and "Incompatibility" (Section 10).

11. TOXICOLOGICAL INFORMATION

Acute oral product toxicity: LD50 (rat) > 10,000 mg/kg

Acute dermal product toxicity: LD50 (rabbit) > 5,000 mg/kg (Estimated)

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Polyglycol dioctanoate	No	No	No
Amorphous fumed silica	No	No	No
1-Acetyl-2-phenylhydrazine	No	No	No
Cumene	No	Group 2B	No

Hazardous components	Health Effects/Target Organs
Polyglycol dimethacrylate	Irritant, Allergen
Polyglycol dioctanoate	Irritant
Amorphous fumed silica	No Target Organs
1-Acetyl-2-phenylhydrazine	Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity
Cumene	Central nervous system, Irritant, Lung

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA 313: None above reporting de minimis

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class: D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: 3, 8, 11, 15

Prepared by: Kyra Kozak Woods, Manager, Regulatory Affairs

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Revision Number: 006.0 **Issue date:** 06/12/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **LOCTITE 270 (Old)**
Product type: Anaerobic Sealant

IDH number: 230401
Item number: 23725
Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: 860.571.5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state: Liquid
Color: Green
Odor: Mild

HEALTH: 2
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: See MSDS Section 8

WARNING: CAUSES EYE IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.
Skin contact: May cause allergic skin reaction. May cause skin irritation.
Eye contact: Contact with eyes will cause irritation.
Ingestion: Not expected to be harmful by ingestion.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Polyglycol dimethacrylate	25852-47-5	60 - 100
Bisphenol A fumarate resin	39382-25-7	10 - 30
Saccharin	81-07-2	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5
Cumene	98-82-8	0.1 - 1

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms develop and persist, get medical attention.

Skin contact: Wash with soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. If symptoms develop and persist, get medical attention.

Eye contact: Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.

Ingestion: Do not induce vomiting. Keep individual calm. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash point: > 93 °C (> 199.4 °F) Tagliabue closed cup

Autoignition temperature: Not available.

Flammable/Explosive limits - lower: Not available.

Flammable/Explosive limits - upper: Not available.

Extinguishing media: Foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Unusual fire or explosion hazards: Not available.

Hazardous combustion products: Oxides of carbon. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists of this product. Wash thoroughly after handling.

Storage: For safe storage, store at or below 38 °C (100.4 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Bisphenol A fumarate resin	None	None	None	None
Saccharin	None	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Cumene	50 ppm TWA	50 ppm (245 mg/m3) PEL (SKIN)	None	None

Engineering controls: No specific ventilation requirements noted, but forced ventilation may still be required if concentrations exceed occupational exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Green
Odor: Mild
Odor threshold: Not available.
pH: Not available.
Vapor pressure: 5 mm hg (27 °C (80.6 °F))
Boiling point/range: > 149 °C (> 300.2 °F)
Melting point/ range: Not available.
Specific gravity: 1.10
Vapor density: Not available.
Flash point: > 93 °C (> 199.4 °F) Tagliabue closed cup
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not available.
Evaporation rate: Not available.
Solubility in water: Slight
Partition coefficient (n-octanol/water): Not available.
VOC content: 8.4 %; 92 g/l

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: Will not occur.

Hazardous decomposition products: Oxides of carbon. Irritating organic vapours.

Incompatible materials: Strong oxidizing agents. Strong acids. Strong reducing agents. Free radical initiators.

Conditions to avoid: Not available.

11. TOXICOLOGICAL INFORMATION

Acute oral product toxicity: LD50 (rat) > 5,000 mg/kg (Estimated)

Acute inhalation product toxicity: LD50 (rabbit) > 2000 (Estimated)

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Bisphenol A fumarate resin	No	No	No
Saccharin	No	No	No
Cumene hydroperoxide	No	No	No
Cumene	No	Group 2B	No

Hazardous components	Health Effects/Target Organs
Polyglycol dimethacrylate	Allergen, Irritant
Bisphenol A fumarate resin	No Target Organs
Saccharin	No Target Organs
Cumene hydroperoxide	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Cumene	Central nervous system, Irritant, Lung

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The shipping classifications in this sections are for non-bulk packaging only (unless otherwise specified). Shipping classification may be different for bulk packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	None above reporting de minimis
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA Section 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Saccharin (CAS 81-07-2). Cumene hydroperoxide (CAS 80-15-9).
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class:	D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: 3, 8, 11, 15 and 16

Prepared by: Diane Annis, Sr. Regulatory Affairs Specialist

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Safety Data Sheet according to (EC) No 1907/2006

sds no. : 153465
V003.6

LOCTITE 272

Revision: 23.04.2013
printing date: 18.06.2014

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
LOCTITE 272

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Anaerobic Adhesive

1.3. Details of the supplier of the safety data sheet
Henkel Limited
2 Bishop Square Business Park
AL109EY Herfordshire Hatfield

Great Britain

Phone: +44 1606 593933
Fax-no.: +44 1606 863762

ua-productsafety.uk@uk.henkel.com

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (DPD):
Sensitizing
R43 May cause sensitisation by skin contact.
Xi - Irritant
R41 Risk of serious damage to eyes.
R37/38 Irritating to respiratory system and skin.

2.2. Label elements

Label elements (DPD):

Xi - Irritant

Risk phrases:
R37/38 Irritating to respiratory system and skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.

Safety phrases:
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water and soap.
S37/39 Wear suitable gloves and eye/face protection.
S51 Use only in well-ventilated areas.

Additional labeling:
For consumer use only: S2 Keep out of the reach of children
S46 If swallowed, seek medical advice immediately and show this container or label.

Contains:
N,N-(m-phenylene)dimaleimide,
Hydroxypropyl methacrylate,
Maleic acid

2.3. Other hazards

This product contains a solid compound, which in powder form is classified as very toxic by inhalation. The product is not labelled accordingly as such exposure can be excluded under normal and foreseeable conditions. In the case that the product is used divergently under formation of aerosols, measures have to be observed to exclude inhalational exposure.

SECTION 3: Composition/information on ingredients

General chemical description:

Methacrylate resin based threadlocker

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
N,N-(m-phenylene)dimaleimide 3006-93-7	221-112-8	> 10- < 20 %	Skin irritation 2; Dermal H315 Skin sensitizer 1; Dermal H317 Serious eye damage/eye irritation 1 H318 Acute toxicity 2; Inhalation H330
Hydroxypropyl methacrylate 27813-02-1	248-666-3 01-2119490226-37	> 1- < 5 %	Skin sensitizer 1; Dermal H317 Serious eye irritation 2 H319
Cumene hydroperoxide 80-15-9	201-254-7	> 1- < 2,5 %	Acute toxicity 4; Dermal H312 Specific target organ toxicity - repeated exposure 2 H373 Acute toxicity 3; Inhalation H331 Acute toxicity 4; Oral H302 Organic peroxides E H242 Chronic hazards to the aquatic environment 2 H411 Skin corrosion 1B H314
Maleic acid 110-16-7	203-742-5	> 0,1- < 0,9 %	Acute toxicity 4; Oral H302 Acute toxicity 4; Dermal H312 Skin irritation 2 H315 Skin sensitizer 1 H317 Serious eye irritation 2 H319 Specific target organ toxicity - single exposure 3 H335
Cumene 98-82-8	202-704-5	> 0,1- < 0,9 %	Flammable liquids 3 H226 Aspiration hazard 1 H304 Specific target organ toxicity - single exposure 3 H335 Chronic hazards to the aquatic environment 2 H411
N,N-dimethyl-o-toluidine 609-72-3	210-199-8	> 0,1- < 0,5 %	Acute toxicity 3; Inhalation H331 Acute toxicity 3; Dermal H311 Acute toxicity 3; Oral H301 Specific target organ toxicity - repeated exposure 2 H373 Chronic hazards to the aquatic environment 3 H412

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
N,N-(m-phenylene)dimaleimide 3006-93-7	221-112-8	> 10 - < 20 %	T+ - Very toxic; R26 Xi - Irritant; R38 Xi - Irritant; R41 Xi - Irritant; R43
Hydroxypropyl methacrylate 27813-02-1	248-666-3 01-2119490226-37	> 1 - < 5 %	Xi - Irritant; R36, R43
Cumene hydroperoxide 80-15-9	201-254-7	> 1 - < 2,5 %	T - Toxic; R23 Xn - Harmful; R21/22, R48/20/22 O - Oxidizing; R7 C - Corrosive; R34 N - Dangerous for the environment; R51/53
Maleic acid 110-16-7	203-742-5	> 0,1 - < 0,9 %	Xn - Harmful; R21/22 Xi - Irritant; R36/37/38, R43
Cumene 98-82-8	202-704-5	> 0,1 - < 0,9 %	R10 Xn - Harmful; R65 Xi - Irritant; R37 N - Dangerous for the environment; R51/53
N,N-dimethyl-o-toluidine 609-72-3	210-199-8	> 0,1 - < 0,5 %	T - Toxic; R23/24/25 R33 R52/53

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:
Rinse with running water and soap.
Obtain medical attention if irritation persists.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:
Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed
EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

SKIN: Rash, Urticaria.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

Combustion behaviour:
Non flammable product (flash point is greater than 100°C (CC))

5.1. Extinguishing media
Suitable extinguishing media:
Carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:
High pressure waterjet

5.2. Special hazards arising from the substance or mixture
Trace amounts of toxic and/or irritating fumes may be released and the use of breathing apparatus is recommended.

5.3. Advice for firefighters
Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid skin and eye contact.

6.2. Environmental precautions
Do not let product enter drains.

6.3. Methods and material for containment and cleaning up
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.

6.4. Reference to other sections
See advice in chapter 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Use only in well-ventilated areas.
Avoid skin and eye contact.
Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

Hygiene measures:
Good industrial hygiene practices should be observed.
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities
Store in original containers at 8-21°C (46.4-69.8°F) and do not return residual materials to containers as contamination may reduce the shelf life of the bulk product.

7.3. Specific end use(s)
Anaerobic Adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient	ppm	mg/m³	Type	Category	Remarks
CUMENE 98-82-8			Skin designation:	Can be absorbed through the skin.	EH40 WEL
CUMENE 98-82-8	50	250	Short Term Exposure Limit (STEL):		EH40 WEL
CUMENE 98-82-8	25	125	Time Weighted Average (TWA):		EH40 WEL
CUMENE 98-82-8	50	250	Short Term Exposure Limit (STEL):	Indicative	ECTLV
CUMENE 98-82-8	20	100	Time Weighted Average (TWA):	Indicative	ECTLV

Biological Exposure Indices:
None

8.2. Exposure controls:

Respiratory protection:
Use only in well-ventilated areas.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A

Hand protection:
Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Wear protective glasses.

Skin protection:
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid Orange-red
Odor	characteristic
Odour threshold	No data available / Not applicable
pH ()	3 - 6
Initial boiling point	Not determined

Flash point	> 93,3 °C (> 199.94 °F); Tagliabue closed cup
Decomposition temperature	No data available / Not applicable
Vapour pressure (25 °C (77 °F))	< 0,13 mbar
Density	No data available / Not applicable
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Slight
Solubility (qualitative) (Solvent: Acetone)	Partially miscible
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity
Reducing agents.
Strong oxidizing agents.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
No decomposition if stored and applied as directed.

10.5. Incompatible materials
None if used properly.

10.6. Hazardous decomposition products
None known

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:
The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Oral toxicity:
May cause irritation to the digestive tract.

Inhalative toxicity:
Irritating to respiratory system

Skin irritation:
It is irritating and sensitising to the skin

Eye irritation:

The product may cause serious eye damage.
Avoid eye contact.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	LD50	550 mg/kg	oral		rat	

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	corrosive		rabbit	

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	positive	bacterial reverse mutation assay (e.g Ames test)	without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Cumene hydroperoxide 80-15-9	negative	dermal		mouse	

SECTION 12: Ecological information

General ecological information:

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.
Biodegradable product of low ecotoxicity.
Cured Loctite products are typical polymers and do not pose any immediate environmental hazards.
Biological and Chemical Oxygen Demands (BOD and COD) are insignificant.

12.1. Toxicity

Ecotoxicity:

Do not empty into drains / surface water / ground water.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Hydroxypropyl methacrylate 27813-02-1	LC50	493 mg/l	Fish	48 h	Leuciscus idus melanotus	
Cumene hydroperoxide 80-15-9	LC50	3,9 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Cumene hydroperoxide 80-15-9	EC50	18 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cumene hydroperoxide 80-15-9	ErC50	3,1 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Maleic acid 110-16-7	LC50	> 245 mg/l	Fish	48 h	Leuciscus idus	
Maleic acid 110-16-7	EC50	245 mg/l	Daphnia	24 h	Daphnia magna	
Cumene 98-82-8	LC50	4,8 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Cumene 98-82-8	EC50	4 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cumene 98-82-8	EC50	2,6 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

12.2. Persistence and degradability

Persistence and Biodegradability:
The product is not biodegradable.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Hydroxypropyl methacrylate 27813-02-1	readily biodegradable	aerobic	94,2 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Cumene hydroperoxide 80-15-9			18 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Maleic acid 110-16-7	readily biodegradable	aerobic	87 - 88 %	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)
Cumene 98-82-8		aerobic	86 %	

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Mobility:
Cured adhesives are immobile.

Bioaccumulative potential:
No data available.

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method

Hydroxypropyl methacrylate 27813-02-1	0,97					
Cumene hydroperoxide 80-15-9 Cumene hydroperoxide 80-15-9	 2,16	9,1		calculation		OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
Maleic acid 110-16-7	-0,48					
Cumene 98-82-8 Cumene 98-82-8	 3,55	35,5		Carassius auratus	 23 °C	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test) OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of in accordance with local and national regulations.
Contribution of this product to waste is very insignificant in comparison to article in which it is used

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.
Disposal must be made according to official regulations.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

SECTION 14: Transport information

14.1. UN number

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

14.2. UN proper shipping name

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

14.3. Transport hazard class(es)

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

14.4. Packaging group

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

14.5. Environmental hazards

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

14.6. Special precautions for user

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

VOC content (1999/13/EC) < 3 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

R10 Flammable.
R21/22 Harmful in contact with skin and if swallowed.
R23 Toxic by inhalation.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R26 Very toxic by inhalation.
R33 Danger of cumulative effects.
R34 Causes burns.
R36 Irritating to eyes.
R36/37/38 Irritating to eyes, respiratory system and skin.
R37 Irritating to respiratory system.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R7 May cause fire.
H226 Flammable liquid and vapor.
H242 Heating may cause a fire.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Revision Number: 012.0

Issue date: 08/08/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite(R) 401 Instant Adhesive Prism(R) Surface Insensitive**
IDH number: 253211
Product type: Cyanoacrylate
Item number: 33245
Restriction of Use: None identified
Region: United States
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
WARNING:	BONDS SKIN IN SECONDS. COMBUSTIBLE LIQUID. CAUSES EYE IRRITATION. MAY CAUSE RESPIRATORY IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
FLAMMABLE LIQUID	4
EYE IRRITATION	2B
SPECIFIC TARGET ORGAN TO ICITY - SINGLE E POSURE	3

PICTOGRAM(S)

Precautionary Statements

Prevention: Keep away from heat,sparks, open flames, hot surfaces - no smoking. Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, eye protection, and face protection.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Call a poison control center or physician if you feel unwell. If eye irritation persists: Get medical attention. In case of fire: Use foam, dry chemical or carbon dioxide to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Ethyl 2-cyanoacrylate	7085-85-0	60 - 100
Thickener	Proprietary	5 - 10

Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Do not pull bonded skin apart. Soak in warm soapy water. Gently peel apart using a blunt instrument. If skin is burned due to the rapid generation of heat by a large drop, seek medical attention. If lips are bonded, apply warm water to the lips and encourage wetting and pressure from saliva in mouth. Peel or roll lips apart. Do not pull lips apart with direct opposing force.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention. If eyelids are bonded closed, release eyelashes with warm water by covering with a wet pad. Do not force eye open. Cyanoacrylate will bond to eye protein and will cause a lachrymatory effect which will help to debond the adhesive. Keep eye covered until debonding is complete, usually within 1-3 days. Medical attention should be sought in case solid particles of polymerized cyanoacrylate trapped behind the eyelid caused abrasive damage.

Ingestion: Ensure breathing passages are not obstructed. The product will polymerize rapidly and bond to the mouth making it almost impossible to swallow. Saliva will separate any solidified product in several hours. Prevent the patient from swallowing any separated mass.

Symptoms: See Section 11.

Notes to physician: Surgery is not necessary to separate accidentally bonded tissues. Experience has shown that bonded tissues are best treated by passive, non-surgical first aid. If rapid curing has caused thermal burns they should be treated symptomatically after adhesive is removed.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear a self-contained breathing apparatus with a full face piece operated in pressure-demand or other positive pressure mode.

Unusual fire or explosion hazards: None

Hazardous combustion products: Trace amounts of toxic and/or irritating fumes may be released and the use of breathing apparatus is recommended.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Ventilate area. Do not allow product to enter sewer or waterways.

Clean-up methods: Do not use cloths for mopping up. Flood with water to complete polymerization and scrape off the floor. Cured material can be disposed of as non-hazardous waste. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Avoid contact with fabric or paper goods. Contact with these materials may cause rapid polymerization which can generate smoke and strong irritating vapors, and cause thermal burns.

Storage: For safe storage, store between 0 °C (32°F) and 10 °C (50°F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Ethyl 2-cyanoacrylate	0.2 ppm TWA	None	None	None
Thickener	None	None	None	None

Engineering controls: Use positive down-draft exhaust ventilation if general ventilation is insufficient to maintain vapor concentration below established exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists.

Skin protection: Use nitrile gloves and aprons as necessary to prevent contact. Do not use PVC, nylon or cotton.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Colorless, Transparent
Odor: Sharp, Irritating
Odor threshold: 1 - 2 ppm
pH: Not applicable
Vapor pressure: 0.2 mm hg
Boiling point/range: > 149 °C (> 300.2 °F)
Melting point/ range: Not determined
Specific gravity: 1.05
Vapor density: 3 Approximately
Flash point: 80 - 93 °C (176°F - 199.4 °F) Tagliabue closed cup
Flammable/Explosive limits - lower: Not determined
Flammable/Explosive limits - upper: Not determined
Autoignition temperature: 485 °C (905°F)
Evaporation rate: Not applicable
Solubility in water: Polymerises in presence of water.
Partition coefficient (n-octanol/water): Not applicable
VOC content: 2 %; 20 g/l (California SCAQMD Method 316B) (Estimated)
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.

Hazardous reactions: Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.

Hazardous decomposition products: None

Incompatible materials: Water, amines, alkalis and alcohols.

Reactivity: Not available.

Conditions to avoid: Spontaneous polymerization.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: May cause respiratory tract irritation. Exposure to vapors above the established exposure limit results in respiratory irritation, which may lead to difficulty in breathing and tightness in the chest.

Skin contact: May cause skin irritation. Bonds skin in seconds. May cause skin irritation. Cyanoacrylates have been reported to cause allergic reaction but due to rapid polymerization at the skin surface, an allergic response is rare. Cyanoacrylates have been reported to cause allergic reaction but due to rapid polymerization at the skin surface, an allergic response is rare. Cyanoacrylates generate heat on solidification. In rare circumstances a large drop will burn the skin. Cured adhesive does not present a health hazard even if bonded to the skin.

Eye contact: Irritating to eyes. Causes excessive tearing. Eyelids may bond.

Ingestion: Not expected to be harmful by ingestion. Rapidly polymerizes (solidifies) and bonds in mouth. It is almost impossible to swallow.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Ethyl 2-cyanoacrylate	None	Irritant, Allergen, Respiratory
Thickener	None	Irritant

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Ethyl 2-cyanoacrylate	No	No	No
Thickener	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Combustible liquid, n.o.s. (Cyanoacrylate ester)
Hazard class or division: Combustible Liquid
Identification number: NA 1993
Packing group: III

International Air Transportation (ICAO/IATA)

Proper shipping name: Aviation regulated liquid, n.o.s. (Cyanoacrylate ester)
Hazard class or division: 9
Identification number: UN 3334
Packing group: III
Exceptions: Primary packs containing less than 500ml are unregulated by this mode of transport and may be shipped unrestricted.

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health, Fire, Reactive
CERCLA/SARA Section 313: None above reporting de minimis

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Catherine Bimler, Regulatory Affairs Specialist

Issue date: 08/08/2014

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Revision Number: 005.1 **Issue date:** 12/16/2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Loctite(R) 577 Thread Sealant Medium Strength
IDH number: 231119
Product type: Anaerobic Sealant
Item number: 21456
Restriction of Use: None identified
Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1

PICTOGRAM(S)

Precautionary Statements

Prevention: Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Not prescribed

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Polyglycol dimethacrylate	Proprietary	30 - 60
Polyglycoldioctanoate	Proprietary	10 - 30
Lauryl methacrylate	142-90-5	5 - 10
Ethene, tetrafluoro-, homopolymer	9002-84-0	1 - 5
Vinyl Resin	Proprietary	1 - 5
Silicon dioxide	7631-86-9	1 - 5
Rheological additive	Unknown	1 - 5
Alkyl Methacrylate	Proprietary	1 - 5
Tetradecyl methacrylate	2549-53-3	1 - 5
1-Acetyl-2-phenylhydrazine	114-83-0	0.1 - 1
Cumene hydroperoxide	80-15-9	0.1 - 1

Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.

Hazardous combustion products: Oxides of carbon. Oxides of nitrogen. Oxides of sulfur. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage: For safe storage, store at or below 38 °C (100.4 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Polyglycoldioctanoate	None	None	None	None
Lauryl methacrylate	None	None	None	50 ppm
Ethene, tetrafluoro-, homopolymer	None	None	None	10 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.
Vinyl Resin	None	None	None	None
Silicon dioxide	6 mg/m3 TWA	20 MPPCF TWA 0.8 mg/m3 TWA	None	3 mg/m3 TWA Respirable fraction.
Rheological additive	10 mg/m3 TWA Total dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None
Alkyl Methacrylate	None	None	None	None
Tetradecyl methacrylate	None	None	None	50 ppm TWA 75 ppm STEL
1-Acetyl-2-phenylhydrazine	None	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None

Engineering controls: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection: Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Butyl rubber gloves. Natural rubber gloves. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Paste
Color: Yellow, dark
Odor: Mild
Odor threshold: Not available.
pH: 3.0 - 6.0
Vapor pressure: 5 mm hg (27 °C (80.6 °F))
Boiling point/range: > 149 °C (> 300.2 °F) no method
Melting point/ range: Not available.
Specific gravity: 1.15 - 1.2

Vapor density:	Not available.
Flash point:	> 100 °C (> 212°F) Pensky Martens closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Not available.
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.1 %; 0.99 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.
Hazardous decomposition products:	Oxides of carbon. Irritating organic vapours. Oxides of nitrogen. Oxides of sulfur.
Incompatible materials:	Strong oxidizing agents (peroxides, chlorine, strong acids).
Reactivity:	Not available.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact: Causes skin irritation. May cause allergic skin reaction.
Eye contact: Causes serious eye irritation.
Ingestion: May cause gastrointestinal tract irritation if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Polyglycol dimethacrylate	None	Allergen, Irritant
Polyglycoldioctanoate	None	Irritant
Lauryl methacrylate	Oral LD50 (RAT) = > 5.0 g/kg	Irritant, Allergen
Ethene, tetrafluoro-, homopolymer	None	No Target Organs
Vinyl Resin	None	Irritant
Silicon dioxide	Oral LD50 (RAT) = > 22,500 mg/kg	Nuisance dust
Rheological additive	None	No Data
Alkyl Methacrylate	None	Irritant, Allergen
Tetradecyl methacrylate	None	Irritant, Allergen
1-Acetyl-2-phenylhydrazine	None	Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Polyglycoldioctanoate	No	No	No
Lauryl methacrylate	No	No	No
Ethene, tetrafluoro-, homopolymer	No	No	No
Vinyl Resin	No	No	No
Silicon dioxide	No	No	No
Rheological additive	No	No	No
Alkyl Methacrylate	No	No	No
Tetradecyl methacrylate	No	No	No
1-Acetyl-2-phenylhydrazine	No	No	No
Cumene hydroperoxide	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)
Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
DOT Hazardous Substance(s): alpha,alpha-Dimethylbenzylhydroperoxide

International Air Transportation (ICAO/IATA)

Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division:	9
Identification number:	UN 3082
Packing group:	III

Water Transportation (IMO/IMDG)

Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class or division:	9
Identification number:	UN 3082
Packing group:	III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	Ethene, tetrafluoro-, homopolymer (CAS 9002-84-0).
CERCLA/SARA Section 302 EHS:	None above reporting de minimis.
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA Section 313:	None above reporting de minimis.
CERCLA Reportable quantity:	Cumene hydroperoxide (CAS 80-15-9) 10 lbs. (4.54 kg)
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 12/16/2015

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

Revision Number: 005.1 **Issue date:** 07/15/2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Loctite(R) 638 Retaining Compound Slip Fit
Product type: Anaerobic Adhesive
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 231111
Item number: 21448
Region: United States
Contact information:
Telephone: (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY CAUSE AN ALLERGIC SKIN REACTION.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1
SKIN SENSITIZATION	1

PICTOGRAM(S)

Precautionary Statements

Prevention: Do not breathe vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, and face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison control center or physician. If skin irritation or rash occurs: Get medical attention. Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Polyurethane methacrylate resin	Unknown	10 - 30
Hydroxyalkyl methacrylate	27813-02-1	10 - 30
Polyurethane methacrylate resin	Unknown	10 - 30
Acrylic acid	79-10-7	5 - 10
Polyglycol dimethacrylate	Proprietary	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5
Methacrylic acid	79-41-4	1 - 5
1-Acetyl-2-phenylhydrazine	114-83-0	0.1 - 1
Polyglycol dimethacrylate	Proprietary	0.1 - 1
Subsituted Silane	Proprietary	0.1 - 1
2-Hydroxyethyl methacrylate	868-77-9	0.1 - 1
Cumene	98-82-8	0.1 - 1

Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.

Hazardous combustion products: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage: For safe storage, store between 0 °C (32°F) and 32 °C (89.6 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyurethane methacrylate resin	None	None	None	None
Hydroxyalkyl methacrylate	None	None	None	1 ppm TWA 3 ppm STEL
Polyurethane methacrylate resin	None	None	None	None
Acrylic acid	2 ppm TWA (SKIN)	None	None	1 ppm TWA 3 ppm STEL (SKIN)
Polyglycol dimethacrylate	None	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Methacrylic acid	20 ppm TWA	None	None	None
1-Acetyl-2-phenylhydrazine	None	None	None	None
Polyglycol dimethacrylate	None	None	None	None
Subsituted Silane	None	None	None	None
2-Hydroxyethyl methacrylate	None	None	None	3 ppm Ceiling
Cumene	50 ppm TWA	50 ppm (245 mg/m3) PEL (SKIN)	None	None

Engineering controls: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection: Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Green
Odor:	Sharp
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	10 mm hg (27 °C (80.6 °F))
Boiling point/range:	> 149 °C (> 300.2 °F)
Melting point/ range:	Not available.
Specific gravity:	1.1
Vapor density:	Not available.
Flash point:	> 93.3 °C (> 199.94 °F) Tagliabue closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	Not available.
VOC content:	1.81 %; 19.00 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.
Hazardous decomposition products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.
Incompatible materials:	Strong oxidizing agents.
Reactivity:	Not available.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Inhalation of vapors or mists of the product may be irritating to the respiratory system. May cause nose, throat and lung irritation.
Skin contact: Corrosive to skin. Causes skin burns. May cause allergic skin reaction.
Eye contact: Causes serious eye damage.
Ingestion: May cause gastrointestinal tract irritation if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Polyurethane methacrylate resin	None	Irritant, Allergen
Hydroxyalkyl methacrylate	None	Irritant, Allergen
Polyurethane methacrylate resin	None	Irritant, Allergen
Acrylic acid	Oral LD50 (RAT) = 33.5 mg/kg Oral LD50 (RAT) = 2.5 g/kg Oral LD50 (RAT) = 193 mg/kg Oral LD50 (RAT) = 1,250 mg/kg Inhalation LC50 (RAT, 4 h) = 1,200 mg/l	Allergen, Corrosive, Irritant, Kidney, Liver
Polyglycol dimethacrylate	None	Irritant, Allergen
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Methacrylic acid	Oral LD50 (RABBIT) = 1,200 mg/kg Oral LD50 (RAT) = 1,060 mg/kg Oral LD50 (RAT) = 2,224 mg/kg Dermal LD50 (RABBIT) = 500 mg/kg Inhalation LC50 (RAT, 4 h) = 7.1 mg/l	Corrosive, Irritant, Allergen
1-Acetyl-2-phenylhydrazine	None	Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity
Polyglycol dimethacrylate	None	Allergen, Irritant
Subsituted Silane	None	Irritant, Allergen
2-Hydroxyethyl methacrylate	Oral LD50 (RAT) = 11.2 g/kg Oral LD50 (RAT) = 5,050 mg/kg	Irritant, Allergen
Cumene	Oral LD50 (RAT) = 2.91 g/kg Oral LD50 (RAT) = 1,400 mg/kg Inhalation LC50 (RAT, 4 h) = 8000 ppm	Central nervous system, Irritant, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyurethane methacrylate resin	No	No	No
Hydroxyalkyl methacrylate	No	No	No
Polyurethane methacrylate resin	No	No	No
Acrylic acid	No	No	No
Polyglycol dimethacrylate	No	No	No
Cumene hydroperoxide	No	No	No
Methacrylic acid	No	No	No
1-Acetyl-2-phenylhydrazine	No	No	No
Polyglycol dimethacrylate	No	No	No
Subsituted Silane	No	No	No
2-Hydroxyethyl methacrylate	No	No	No
Cumene	Reasonably Anticipated to be a Human Carcinogen.	Group 2B	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis

CERCLA/SARA Section 311/312: Immediate Health, Delayed Health

CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Acrylic acid (CAS 79-10-7). Cumene hydroperoxide (CAS 80-15-9).

CERCLA Reportable quantity: Cumene hydroperoxide (CAS 80-15-9) 10 lbs. (4.54 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format. 11

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 07/15/2015

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates (“Henkel”) does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user’s responsibility to determine the suitability of Henkel’s products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel’s products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel’s products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

Revision Number: 004.1

Issue date: 07/08/2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite 641**
Product type: Adhesive
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 233544
Item number: 28801
Region: United States
Contact information:
Telephone: (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
WARNING:	CAUSES SKIN IRRITATION. MAY CAUSE AN ALLERGIC SKIN REACTION. CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1

PICTOGRAM(S)

Precautionary Statements

Prevention: Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Not prescribed

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*

Polyglycol dimethacrylate	Proprietary	60 - 100
Polyglycoldioctanoate	Proprietary	10 - 30
Cumene hydroperoxide	80-15-9	1 - 5
Saccharin	81-07-2	1 - 5
Cumene	98-82-8	0.1 - 1

Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.

Hazardous combustion products: Oxides of carbon. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage: For safe storage, store at or below 38 °C (100.4 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Polyglycoldioctanoate	None	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Saccharin	None	None	None	None
Cumene	50 ppm TWA	50 ppm (245 mg/m3) PEL (SKIN)	None	None

Engineering controls: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection: Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: yellow
Odor: characteristic
Odor threshold: Not available.
pH: Not available.
Vapor pressure: 5 mm hg (27 °C (80.6 °F))
Boiling point/range: > 149 °C (> 300.2 °F)
Melting point/ range: Not available.
Specific gravity: 1.08 at 20 °C (68°F)
Vapor density: Not available.
Flash point: > 93.3 °C (> 199.94 °F) Tagliabue closed cup
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not available.
Evaporation rate: Not available.
Solubility in water: Slight
Partition coefficient (n-octanol/water): Not available.
VOC content: 0.07 %; 0.75 g/l
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use.

Hazardous reactions: None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.

Hazardous decomposition products: Oxides of carbon. Irritating organic vapours.

Incompatible materials: Free radical initiators. Oxidizing agents. Reducing agents. Metal oxides. Acids. Alkalis.

Reactivity: Not available.

Conditions to avoid: Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Inhalation of vapors or mists of the product may be irritating to the respiratory system. May cause irritation to nose and throat.
Skin contact: Causes skin irritation. May cause allergic skin reaction.
Eye contact: Causes serious eye irritation.
Ingestion: May cause irritation to the gastrointestinal tract, mouth and mucous membranes.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Polyglycol dimethacrylate	None	Allergen, Irritant
Polyglycoldioctanoate	None	Irritant
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Saccharin	None	No Target Organs
Cumene	Oral LD50 (RAT) = 2.91 g/kg Oral LD50 (RAT) = 1,400 mg/kg Inhalation LC50 (RAT, 4 h) = 8000 ppm	Central nervous system, Irritant, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Polyglycoldioctanoate	No	No	No
Cumene hydroperoxide	No	No	No
Saccharin	No	No	No
Cumene	Reasonably Anticipated to be a Human Carcinogen.	Group 2B	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Cumene hydroperoxide (CAS 80-15-9). Saccharin (CAS 81-07-2).
CERCLA Reportable quantity: Cumene hydroperoxide (CAS 80-15-9) 10 lbs. (4.54 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format. 11

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 07/08/2015

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Safety Data Sheet according to Regulation (EC) No1907/2006

SDS No. : 179512
V005.9

Loctite 7063

Revision: 27.06.2014
printing date: 13.07.2014

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Loctite 7063

Contains:
Naphtha, hydrotreated light, <0,1% benzene

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Solvent based cleaner

1.3. Details of the supplier of the safety data sheet
Henkel Limited
2 Bishop Square Business Park
AL109EY Herfordshire Hatfield

Great Britain

Phone: +44 1606 593933
Fax-no.: +44 1606 863762

ua-productsafety.uk@uk.henkel.com

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Flammable aerosols	Category 1
H222 Extremely flammable aerosol.	
H229 Pressurised container: May burst if heated.	
Skin irritation	Category 2
H315 Causes skin irritation.	
Specific target organ toxicity - single exposure	Category 3
H336 May cause drowsiness or dizziness.	
Target organ: Central Nervous System	
Chronic hazards to the aquatic environment	Category 2
H411 Toxic to aquatic life with long lasting effects.	

Classification (DPD):

F+ - Extremely flammable
R12 Extremely flammable.
Xi - Irritant
R38 Irritating to skin.
N - Dangerous for the environment
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67 Vapours may cause drowsiness and dizziness.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:	
Signal word:	Danger
Hazard statement:	H222 Extremely flammable aerosol. H229 Pressurised container: May burst if heated. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects.
Precautionary statement:	P251 Do not pierce or burn, even after use. P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. P211 Do not spray on an open flame or other ignition source. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P102 Keep out of reach of children. ***For consumer use only: P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P501 Dispose of waste and residues in accordance with local authority requirements***
Precautionary statement: Prevention	P261 Avoid breathing spray. P273 Avoid release to the environment.
Precautionary statement: Response	P302+P352 IF ON SKIN: Wash with plenty of soap and water.

Label elements (DPD):

F+ - Extremely flammable

Xi - Irritant

N - Dangerous for the environment

Risk phrases:

R12 Extremely flammable.
R38 Irritating to skin.
R67 Vapours may cause drowsiness and dizziness.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S16 Keep away from sources of ignition - No smoking.
S23 Do not breathe vapour.
S24 Avoid contact with skin.
S51 Use only in well-ventilated areas.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Additional labeling:

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of the reach of children
For consumer use only: S2 Keep out of the reach of children.
S46 If swallowed, seek medical advice immediately and show this container or label.

2.3. Other hazards

The aerosol container is under pressure. Do not expose to high temperatures.

SECTION 3: Composition/information on ingredients

General chemical description:

Solvent cleaner

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Naphtha, hydrotreated light, <0,1% benzene 64742-49-0	265-151-9 01-2119475514-35 01-2119484651-34	> 50- < 70 %	Flammable liquids 2 H225 Aspiration hazard 1 H304 Skin irritation 2 H315 Specific target organ toxicity - single exposure 3 H336 Chronic hazards to the aquatic environment 2 H411
Ethanol 64-17-5	200-578-6 01-2119457610-43	> 10- < 20 %	Serious eye irritation 2 H319 Flammable liquids 2 H225
Methylal 109-87-5	203-714-2	> 10- < 20 %	Flammable liquids 2 H225
Carbon dioxide 124-38-9	204-696-9	2,5- < 10 %	

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Naphtha, hydrotreated light, <0,1% benzene 64742-49-0	265-151-9 01-2119475514-35 01-2119484651-34	> 50 - < 70 %	F - Highly flammable; R11 Xn - Harmful; R65 Xi - Irritant; R38 R67 N - Dangerous for the environment; R51/53
Ethanol 64-17-5	200-578-6 01-2119457610-43	> 10 - < 20 %	F - Highly flammable; R11
Methylal 109-87-5	203-714-2	> 10 - < 20 %	F - Highly flammable; R11
Carbon dioxide 124-38-9	204-696-9	2,5 - < 10 %	

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.
Declaration of ingredients according to Detergent Regulation 648/2004/EC

> 30 % aliphatic hydrocarbons

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:
Rinse with running water and soap.
Obtain medical attention if irritation persists.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:
Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed
Vapors may cause drowsiness and dizziness.

SKIN: Redness, inflammation.

Prolonged or repeated contact may cause eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

Combustion behaviour:
Solvent containing flammable product. In case of fire toxic gases are released.

5.1. Extinguishing media
Suitable extinguishing media:
Foam, extinguishing powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons:
None known

5.2. Special hazards arising from the substance or mixture
Vapours may accumulate in low or confined areas, travel considerable distance to source of ignition, and flash back.
Oxides of carbon, oxides of nitrogen, irritating organic vapors.

5.3. Advice for firefighters
Wear self-contained breathing apparatus.

Additional information:
In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Remove sources of ignition.
Ensure adequate ventilation.

6.2. Environmental precautions
Do not let product enter drains.

6.3. Methods and material for containment and cleaning up
Wipe up using absorbent material.
Store in a partly filled, closed container until disposal.
Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections
See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Keep away from sources of ignition - no smoking.
Vapours should be extracted to avoid inhalation.
Use only in well-ventilated areas.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry place.
Do not store near sources of heat or ignition, or reactive materials.
Store between 0°C and 32°C. (32°F and 90°F)

7.3. Specific end use(s)

Solvent based cleaner

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient	ppm	mg/m³	Type	Category	Remarks
ETHANOL 64-17-5	1.000	1.920	Time Weighted Average (TWA):		EH40 WEL
DIMETHOXYMETHANE 109-87-5	1.250	3.950	Short Term Exposure Limit (STEL):		EH40 WEL
DIMETHOXYMETHANE 109-87-5	1.000	3.160	Time Weighted Average (TWA):		EH40 WEL
Carbon dioxide 124-38-9					
CARBON DIOXIDE 124-38-9	15.000	27.400	Short Term Exposure Limit (STEL):		EH40 WEL
CARBON DIOXIDE 124-38-9	5.000	9.150	Time Weighted Average (TWA):		EH40 WEL
CARBON DIOXIDE 124-38-9	5.000	9.000	Time Weighted Average (TWA):	Indicative	ECTLV

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Ethanol 64-17-5	aqua (freshwater)					0,96 mg/L	
Ethanol 64-17-5	aqua (marine water)					0,79 mg/L	
Ethanol 64-17-5	aqua (intermittent releases)					2,75 mg/L	
Ethanol 64-17-5	sediment (freshwater)				3,6 mg/kg		
Ethanol 64-17-5	soil				0,63 mg/kg		
Ethanol 64-17-5	STP					580 mg/L	
Ethanol 64-17-5	oral				720 mg/kg		
Ethanol 64-17-5	sediment (marine water)				2,9 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Naphtha (petroleum), hydrotreated light 64742-49-0	worker	Dermal	Long term exposure - systemic effects		13964 mg/kg bw/day	
Naphtha (petroleum), hydrotreated light 64742-49-0	general population	oral	Long term exposure - systemic effects		1301 mg/kg bw/day	
Naphtha (petroleum), hydrotreated light 64742-49-0	general population	Dermal	Long term exposure - systemic effects		1377 mg/kg bw/day	
Naphtha (petroleum), hydrotreated light 64742-49-0	general population	inhalation	Long term exposure - systemic effects		1131 mg/m3	
Naphtha (petroleum), hydrotreated light 64742-49-0	worker	inhalation	Long term exposure - systemic effects		5306 mg/m3	
Ethanol 64-17-5	worker	inhalation	Acute/short term exposure - local effects		1900 mg/m3	
Ethanol 64-17-5	worker	Dermal	Long term exposure - systemic effects		343 mg/kg bw/day	
Ethanol 64-17-5	worker	inhalation	Long term exposure - systemic effects		950 mg/m3	
Ethanol 64-17-5	general population	inhalation	Acute/short term exposure - local effects		950 mg/m3	
Ethanol 64-17-5	general population	Dermal	Long term exposure - systemic effects		206 mg/kg bw/day	
Ethanol 64-17-5	general population	inhalation	Long term exposure - systemic effects		114 mg/m3	
Ethanol 64-17-5	general population	oral	Long term exposure - systemic effects		87 mg/kg bw/day	

Biological Exposure Indices:
None

8.2. Exposure controls:

Engineering controls:
Ensure good ventilation/extraction.

Respiratory protection:
Use only in well-ventilated areas.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A

Hand protection:
Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Skin protection:
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Aerosol colourless
Odor	hydrocarbons
Odour threshold	No data available / Not applicable
pH	Not applicable
Initial boiling point	-78 °C (-108.4 °F)
Flash point	-18 °C (0.4 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure (20 °C (68 °F))	440 hPa
Density (20 °C (68 °F))	0,742 g/cm3
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Not miscible
Solubility (qualitative) (Solvent: Acetone)	Miscible
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	
lower	0,8 %(V)
upper	15 %(V)
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

Ignition temperature	200 °C (392 °F)

SECTION 10: Stability and reactivity

10.1. Reactivity
Strong oxidizing agents.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
Stable under normal conditions of storage and use.
Heat, flames, sparks and other sources of ignition.

10.5. Incompatible materials
None if used properly.

10.6. Hazardous decomposition products
None if used for intended purpose.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

STOT-single exposure:
May cause drowsiness or dizziness.

Oral toxicity:
May cause irritation to the digestive tract.

Skin irritation:
Solvent may remove essential oils from the skin making it susceptible to attack from other chemicals.
Causes skin irritation.

Eye irritation:
May cause mild irritation to the eyes.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethanol 64-17-5	LD50	13.700 mg/kg	oral		rat	

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethanol 64-17-5	LC50	124,7 mg/l	inhalation	4 h	rat	

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethanol 64-17-5	LDLo	20.000 mg/kg	dermal		rabbit	

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethanol 64-17-5	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethanol 64-17-5	Category II		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Ethanol 64-17-5	not sensitising	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Ethanol 64-17-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	in vitro mammalian chromosome aberration test	without		

SECTION 12: Ecological information

General ecological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity

Ecotoxicity:

Do not empty into drains / surface water / ground water.
Toxic to aquatic life with long lasting effects.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Ethanol 64-17-5	LC50	14,2 g/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Ethanol 64-17-5	EC50	9.268 - 14.221 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Ethanol 64-17-5	EC50	> 5.000 mg/l	Algae	7 d	Scenedesmus quadricauda	OECD Guideline 201 (Alga, Growth Inhibition Test)
Ethanol 64-17-5	NOEC	2 mg/l	chronic Daphnia	10 d		
Methylal 109-87-5	LC50	6.990 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Methylal 109-87-5	EC50	> 500 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Methylal 109-87-5	EC10	> 500 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)

12.2. Persistence and degradability

Persistence and Biodegradability:

No data available.

Persistence and degradability:

Degradation of surfactants

The product does not contain surface-active substances as defined in the EU Detergent Regulation (EC/648/2004).

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Ethanol 64-17-5	readily biodegradable	aerobic	80 - 85 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Methylal 109-87-5			88 %	OECD 301 A - F

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Mobility:
The product evaporates readily.

Bioaccumulative potential:
No data available.

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Ethanol 64-17-5	-0,31					

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Naphtha, hydrotreated light, <0,1% benzene 64742-49-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Ethanol 64-17-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
Dispose of according to regulations.

Disposal of uncleaned packages:
After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.
Disposal must be made according to official regulations.

Waste code
14 06 03 Other solvents and solvent mixtures

SECTION 14: Transport information

14.1. UN number

ADR	1950
RID	1950
ADNR	1950
IMDG	1950
IATA	1950

14.2. UN proper shipping name

ADR	AEROSOLS
RID	AEROSOLS
ADNR	AEROSOLS
IMDG	AEROSOLS (Solvent Naphtha (Petroleum), Light Aromatic)
IATA	Aerosols, flammable

14.3. Transport hazard class(es)

ADR	2.1
RID	2.1
ADNR	2.1
IMDG	2.1
IATA	2.1

14.4. Packaging group

ADR	
RID	
ADNR	
IMDG	
IATA	

14.5. Environmental hazards

ADR	Environmentally Hazardous
RID	Environmentally Hazardous
ADNR	Environmentally Hazardous
IMDG	Environmentally Hazardous
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (D)
RID	not applicable
ADNR	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

VOC content (1999/13/EC)	95 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text
of all abbreviations indicated by codes in this safety data sheet are as follows:

R11 Highly flammable.
R38 Irritating to skin.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.
H225 Highly flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Safety Data Sheet according to (EC) No 1907/2006

sds no. : 173274
V003.1

7240 90 ML E/G/A 34882

Revision: 29.07.2011
printing date: 03.05.2012

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier:
7240 90 ML E/G/A 34882

Relevant identified uses of the substance or mixture and uses advised against:
Intended use:
activator

Details of the supplier of the safety data sheet:
Henkel Limited
2 Bishop Square Business Park
AL109EY Herfordshire Hatfield

Great Britain

Phone: +44 1606 593933
Fax-no.: +44 1606 863762

ua-productsafety.uk@uk.henkel.com

Emergency Telephone Number:
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

Classification of the substance or mixture:

Classification (DPD):
Sensitizing
R43 May cause sensitisation by skin contact.
Dangerous for the environment
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label elements (DPD):

Xi - Irritant

Risk phrases:
R43 May cause sensitisation by skin contact.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:
S24 Avoid contact with skin.
S37 Wear suitable gloves.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains:
Hydroxypropyl methacrylate

Other hazards:
None if used properly.

SECTION 3: Composition/information on ingredients

General chemical description:
Activator

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Limonene, D- 5989-27-5	227-813-5	0,1- 1 %	Flammable liquids 3 H226 Acute hazards to the aquatic environment 1 H400 Skin irritation 2 H315 Skin sensitizer 1 H317 Chronic hazards to the aquatic environment 1 H410
Copper naphthenate 1338-02-9	215-657-0	0,1- 1 %	Chronic hazards to the aquatic environment 1 H410 Acute hazards to the aquatic environment 1 H400 Flammable liquids 3 H226 Acute toxicity 4; Oral H302

Only dangerous ingredients for which a CLP classification is already available are displayed in this table.
For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Hydroxypropyl methacrylate 27813-02-1	248-666-3	1 - 5 %	Xi - Irritant; R36, R43
Limonene, D- 5989-27-5	227-813-5	0,1 - 1 %	N - Dangerous for the environment; R50, R53 R10 Xi - Irritant; R38 R43
Copper naphthenate 1338-02-9	215-657-0	0,1 - 1 %	R10 Xn - Harmful; R22 N - Dangerous for the environment; R50, R53

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

Description of first aid measures:

Inhalation:
Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:
Rinse with running water and soap.
Seek medical advice.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.

Ingestion:
Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Seek medical advice.

Most important symptoms and effects, both acute and delayed:
SKIN: Rash, Urticaria.

Indication of any immediate medical attention and special treatment needed:
See section: Description of first aid measures

SECTION 5: Firefighting measures

Extinguishing media:
Suitable extinguishing media:
Carbon dioxide, foam, powder

Special hazards arising from the substance or mixture:
Oxides of carbon, oxides of nitrogen, irritating organic vapors.

Advice for firefighters:
Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Avoid skin and eye contact.
Ensure adequate ventilation.

Environmental precautions:
Do not let product enter drains.

Methods and material for containment and cleaning up:
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.

Reference to other sections:
See advice in chapter 8

SECTION 7: Handling and storage

Precautions for safe handling:
Use only in well-ventilated areas.
Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

Conditions for safe storage, including any incompatibilities:
Store in original containers at 8-21°C (46.4-69.8°F) and do not return residual materials to containers as contamination may reduce the shelf life of the bulk product.

Specific end use(s):
activator

SECTION 8: Exposure controls/personal protection

Control parameters:
Valid for
Great Britain

None

Exposure controls:

Respiratory protection:
Use only in well-ventilated areas.

Hand protection:
Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Wear protective glasses.

Skin protection:
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties:

Appearance	liquid
	liquid
	green
Odor	characteristic
pH	No data available / Not applicable
Initial boiling point	Not applicable
Flash point	> 100 °C (> 212 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure	not applicable
Density	1,05 - 1,09 g/cm3
()	
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative)	Not miscible
(Solvent: Water)	
Solubility (qualitative)	partially soluble
(Solvent: Acetone)	
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

Other information:

No data available / Not applicable

SECTION 10: Stability and reactivity

Reactivity:

Reaction with strong acids.
Reacts with strong oxidants.

Chemical stability:

Stable under recommended storage conditions.

Possibility of hazardous reactions:

See section reactivity

Conditions to avoid:

Stable

Hazardous decomposition products:

Irritating organic vapours.

SECTION 11: Toxicological information

General toxicological information:

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Oral toxicity:

This material is considered to have low toxicity if swallowed.

Inhalative toxicity:
Due to the low volatility of the product there are no hazards associated with inhalation under normal conditions of use

Skin irritation:
Prolonged or repeated contact may cause skin irritation.

Eye irritation:
Prolonged or repeated contact may cause eye irritation.

Sensitizing:
May cause sensitization by skin contact.

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Limonene, D- 5989-27-5	moderately irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

SECTION 12: Ecological information

General ecological information:
The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Ecotoxicity:
Harmful to aquatic organisms.
May cause long-term adverse effects in the aquatic environment.
Do not empty into drains / surface water / ground water.

Mobility:
Cured adhesives are immobile.

Persistence and Biodegradability:
No data available.

Bioaccumulative potential:
Does not bioaccumulate.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Hydroxypropyl methacrylate 27813-02-1	LC50	493 mg/l	Fish	48 h	Leuciscus idus melanotus	
Limonene, D- 5989-27-5	LC50	702 µg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Limonene, D- 5989-27-5	EC50	577 µg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method

Hydroxypropyl methacrylate 27813-02-1	readily biodegradable	aerobic	94,2 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Limonene, D- 5989-27-5	readily biodegradable		41 - 98 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Hydroxypropyl methacrylate 27813-02-1	0,97					
Limonene, D- 5989-27-5	4,57					

SECTION 13: Disposal considerations

Waste treatment methods:

Product disposal:

Dispose of in accordance with local and national regulations.
Contribution of this product to waste is very insignificant in comparison to article in which it is used

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

SECTION 14: Transport information

General information:

Not hazardous according to RID, ADR, ADNR, IMDG, IATA-DGR.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

VOC content (1999/13/EC) < 5 %

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

R10 Flammable.
R22 Harmful if swallowed.
R36 Irritating to eyes.
R38 Irritating to skin.
R43 May cause sensitisation by skin contact.
R50 Very toxic to aquatic organisms.
R53 May cause long-term adverse effects in the aquatic environment.

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

This safety data sheet was prepared in accordance with Council Directive 67/548/EEC and it's subsequent amendments, and Commission Directive 1999/45/EC.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL AERO HF**
Product Description: Base Oil and Additives
Product Code: 201550401010, 490128-00, 970444
Intended Use: Aviation hydraulic oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX. 77253 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 4.
Aspiration toxicant: Category 1.

LABEL:
Pictogram:

Signal Word: Danger

Hazard Statements:
H227: Combustible liquid. H304: May be fatal if swallowed and enters airways.

Precautionary Statements:
P210: Keep away from flames and hot surfaces. -- No smoking. P273: Avoid release to the environment. P280: Wear protective gloves and eye / face protection.P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331: Do NOT induce vomiting. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish.P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up.P501: Dispose of contents and container in accordance with local regulations.

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Combustible.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	1	Flammability:	2	Reactivity:	0
HMIS Hazard ID:	Health:	1*	Flammability:	2	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2,6-DI-TERT-BUTYL-P-CRESOL	128-37-0	0.1 - < 1%	H400(M factor 1), H410(M factor 1)
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	5 - < 10%	H304
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	64742-53-6	50 - < 70%	H227, H304
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	20 - < 30%	H304
TRIPHENYL PHOSPHATE	115-86-6	0.1 - < 0.25%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Combustible. Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Phosphorus oxides, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >82°C (180°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 7.0 [Estimated]
Autoignition Temperature: >225°C (437°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable

regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Avoid prolonged breathing of mists and heated vapor. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static

accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
2,6-DI-TERT-BUTYL-P-CRESOL	Inhalable fraction and vapor	TWA	2 mg/m3		N/A	ACGIH
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT [total hydrocarbon vapor]	Non-Aerosol	TWA	200 mg/m3		Skin	ACGIH
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	ACGIH
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m^3 - ACGIH TLV (inhalable fraction), 5 mg/m^3 - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:
Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Red

Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.88
Flammability (Solid, Gas): N/A
Flash Point [Method]: >82°C (180°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 7.0 [Estimated]
Autoignition Temperature: >225°C (437°F)
Boiling Point / Range: N/D
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: [N/D at 20 °C]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 13.8 cSt (13.8 mm2/sec) at 40 °C | 5.1 cSt (5.1 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -60°C (-76°F) [ASTM D97]
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Open flames and high energy ignition sources.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.

Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	May dry the skin leading to discomfort and dermatitis. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
2,6-DI-TERT-BUTYL-P-CRESOL	Oral Lethality: LD50 0.89 g/kg (Rat)

OTHER INFORMATION

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Components -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be

completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: COMBUSTIBLE LIQUID, N.O.S. (Distillates (Petroleum), Hydrotreated Light)
Hazard Class & Division: COMBUSTIBLE LIQUID
ID Number: NA1993
Packing Group: III
ERG Number: 128
Label(s): NONE
Transport Document Name: NA1993, COMBUSTIBLE LIQUID, N.O.S. (Distillates (Petroleum), Hydrotreated Light), COMBUSTIBLE LIQUID, PG III

Footnote: This material is not regulated under 49 CFR in a container of 119 gallon capacity or less when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	1, 17, 18
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	64742-53-6	1, 4, 13, 17, 18
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	1, 4, 17, 18

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H227: Combustible liquid; Flammable Liquid, Cat 4
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Revision Changes:
Section 01: Company Mailing Address information was modified.
Section 05: Hazardous Combustion Products information was modified.
Section 15: List Citations Table information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 14: Marine Pollutant information was modified.
Composition: Component Table information was modified.
Section 08: Exposure Limits Table information was modified.
Section 16: Revision Information - Implementation of GHS requirements phrase. information was deleted.

Internal Use Only

MHC: 2A, 0, 0, 0, 1, 1 PPEC: C

DGN: 2005457XUS (552975)

607234-00 MOBIL GLYGOYLE 11

1. PRODUCT AND COMPANY IDENTIFICATION

APPROVAL DATE: 01/01/95

PRODUCT NAME: MOBIL GLYGOYLE 11
SUPPLIER: MOBIL OIL CORP.
AMERICAS MARKETING AND REFINING
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Emergency (call collect):	609-737-4411	
Product and MSDS Information:	800-662-4525	703-849-5700
CHEMTREC:	800-424-9300	202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: SYN. HYDROCARBONS AND ADDITIVES

INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

Substance Name	Wt%
POLYPROPYLENE GLYCOLS (25322-69-4)	90-100

See Section 15 for European Label Information.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.
EFFECTS OF OVEREXPOSURE: No significant effects expected.
EMERGENCY RESPONSE DATA: Dark Amber Liquid. DOT ERG No. - NA

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water.
INHALATION: Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance and call a physician. If breathing has stopped, use mouth to mouth resuscitation.
INGESTION: Not expected to be a problem. However, if greater than 1/2 liter(pint) ingested, immediately give 1 to 2 glasses of water and call a physician, hospital emergency room or poison control center for assistance. Do not induce vomiting or give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None. Flash Point C(F): > 210(410) (ASTM D-93). Flammable limits - LEL: NA, UEL: NA.
NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.
ENVIRONMENTAL PRECAUTIONS: Prevent spills from entering storm sewers or drains and contact with soil.
PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.
STORAGE: Do not store in open or unlabelled containers. Store away from strong oxidizing agents or combustible material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Use in well ventilated area.
RESPIRATORY PROTECTION: No special requirements under ordinary conditions of use and with adequate ventilation.
EYE PROTECTION: Normal industrial eye protection practices should be employed.
SKIN PROTECTION: No special equipment required. However, good personal hygiene practices should always be followed.

		---TWA---		----STEL---		NOTE
Substance Name (CAS-No.)	Source	ppm	mg/m3	ppm	mg/m3	
POLYPROPYLENE GLYCOLS (25322-69-4)	MOBIL		10			

NOTE: Limits shown for guidance only. Follow applicable regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Dark Amber
ODOR: Mild
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C(F): NE
MELTING POINT C(F): NA
FLASH POINT C(F): > 210(410) (ASTM D-93)
FLAMMABILITY: NE
AUTO FLAMMABILITY: NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: NE

(Section continued next page)

VAPOR DENSITY: NE
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 1.009
SOLUBILITY IN WATER: Slight
PARTITION COEFFICIENT: NE
VISCOSITY AT 40 C, cSt: 85.0
VISCOSITY AT 100 C, cSt: 12.0
POUR POINT C(F): -29(-20)
FREEZING POINT C(F): NE
VOC: < 2.00 (Wt. %); 0.168 lbs/gal
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Not established

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS: Not established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA.

EU Labeling: EU labeling not required.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains no chemicals reportable under SARA (313) toxic release program.

(Section continued next page)

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
POLYPROPYLENE GLYCOL	25322-69-4	1, 23

--- REGULATORY LISTS SEARCHED ---

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

USE: INDUSTRIAL OIL

NOTE: MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS.

Please call the Customer Response Center on 800-662-4525 for formulation disclosure.

****

For Internal Use Only: MHC: 1* 1* NE 1* 1*, MPPEC: A, REQ: US - MARKETING, SAFE USE: L

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(Section continued next page)

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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL GLYGOYLE 30**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560505030, 607259-00, 97M461
Intended Use: Synthetic lubricants

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX. 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	68411-46-1	1 - < 5%	H402, H412
OCTANOIC ACID, COMPOUND WITH 1-OCTANAMINE (1:1)	17463-34-2	0.1 - < 1%	H302, H314(1B)
TRIPHENYL PHOSPHATE	115-86-6	< 0.25%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon, Sulfur oxides, Aldehydes

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Warn other shipping. Material will sink. Remove material, as much as possible, using mechanical equipment.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Brown
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 °C): 1.006 [ASTM D1298]
Flammability (Solid, Gas): N/A
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (601°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 220 cSt (220 mm2/sec) at 40 °C | 30.25 cSt (30.25 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30°C (-22°F) [ASTM D97]

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data	Not expected to be a germ cell mutagen. Based on assessment of

for material.	the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

Contains:
Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results

Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	ErL50 >100 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 mg/l: data for similar materials
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL0 101 mg/l: data for similar materials
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL0 103 mg/l: data for similar materials

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

PRODUCT REGISTRATION STATUS: USA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H314(1B): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H402: Harmful to aquatic life; Acute Env Tox, Cat 3
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2008596XUS (554866)

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in the United Kingdom & Ireland.

PRODUCT

Product Name: **MOBIL GLYGOYLE HE 320**
Product Description: Polyglycol
Product Code: 201560401520, 400623, 607317-60
Intended Use: Lubricant

COMPANY IDENTIFICATION

Supplier: **EXXONMOBIL LUBRICANTS & SPECIALTIES EUROPE, A DIVISION OF EXXONMOBIL PETROLEUM & CHEMICAL, BVBA (EMPC)**
POLDERDIJKWEG
B-2030 Antwerpen
Belgium

24 Hour Environmental / Health Emergency Telephone (UK) 01372 222 000 / (IRELAND) 44 1372 222 000
e-mail SDS-UK@EXXONMOBIL.COM

SECTION 2 HAZARDS IDENTIFICATION

This material is dangerous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION: | R52/53 |

HEALTH HAZARDS

Low order of toxicity. May be irritating to the eyes, nose, throat, and lungs. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

ENVIRONMENTAL HAZARDS

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Note: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is regulated as a preparation.

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	EINECS / ELINCS	Concentration*	Symbols/Risk Phrases

ALKYLATED DIPHENYL AMINES	68411-46-1	270-128-1	1 - 5%	R52/53
TRIPHENYL PHOSPHATE	115-86-6	204-112-2	0.1 - 1%	N;R50/53

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >275C (527F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Material will sink. Remove material, as much as possible, using mechanical equipment.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Remove debris in path of spill prior to oiling and remove contaminated debris from shoreline and water surface. Dispose of according to local regulations. Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source	Year
TRIPHENYL PHOSPHATE		STEL	6 mg/m3			UK EH40	2007
TRIPHENYL PHOSPHATE		TWA	3 mg/m3			UK EH40	2007
TRIPHENYL PHOSPHATE		TWA	3 mg/m3			ACGIH	2008

Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s):

UK Health and Safety Executive (HSE)

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1

for additional data.

GENERAL INFORMATION

Physical State: Liquid
Colour: brown
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 1.069
Flash Point [Method]: >275C (527F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (601F)
Vapour Density (Air = 1): N/A
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20℃
Evaporation Rate (N-Butyl Acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): < 3
Solubility in Water: Complete
Viscosity: 320 cSt (320 mm²/sec) at 40℃ | 54.6 cSt (54.6 mm²/sec) at 100C
Oxidising properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30℃ (-22℉)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity

Route of Exposure	Conclusion / Remarks
INHALATION	
Toxicity: LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or

	lungs. Based on assessment of the components.
INGESTION	
Toxicity: LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity: LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation: No end point data.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

Additional information is available by request.

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Majority of components -- Expected to remain in water or migrate through soil.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be persistent.

BIOACCUMULATION POTENTIAL

Majority of components -- Potential to bioaccumulate is low.

ECOLOGICAL DATA

Component	Acute Aquatic Toxicity
TRIPHENYL PHOSPHATE	L(E)C50 >0.1 - 1 mg/L

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 13 02 06

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

This material is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (ADR/RID) : Not Regulated for Land Transport

INLAND WATERWAYS (ADNR) : Not Regulated for Inland Waterways Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

Material is dangerous as defined by the EU Dangerous Substances/Preparations Directives.

CLASSIFICATION: Dangerous for the environment.

EU LABELING: No symbol required.

Nature of Special Risk: R52/53; Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Advice: S61; Avoid release to the environment. Refer to special instructions/safety data sheets.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: AICS, EINECS, TSCA

SECTION 16	OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):
R50/53; Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53; Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 06: Notification Procedures - Header was modified.
Section 13: Empty Container Warning was modified.
Section 09: Phys/Chem Properties Note was modified.
Section 09: Boiling Point ºC(ºF) was modified.
Section 08: Hand Protection was modified.
Section 08: Environmental Control - Note was modified.
Section 05: Hazardous Combustion Products was modified.
Section 06: Accidental Release - Spill Management - Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Flash Point ºC(ºF) was modified.
Section 09: Viscosity was modified.
Section 08: Environmental Control - Note was modified.
Section 08: Exposure Limits Table was modified.
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 12: Environmental component tox table in section 12 was added.
Section 12: Environmental component tox table in section 12 was added.
Section 12: Environmental component tox table in section 12 was added.
Section 12: Ecological data - Header was added.

%%revision_comment%%

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included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0, 0, 0, 0, 0, 1 PPEC: A

DGN: 2008607XGB (554880)

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL SHC 630**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560500550, 602953-00, 970782
Intended Use: Circulating/gear oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX. 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1-DECENE, HOMOPOLYMER HYDROGENATED	68037-01-4	20 - < 30%	H304
TRIPHENYL PHOSPHATE	115-86-6	< 0.25%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Oxides of carbon, Smoke, Fume, Sulfur oxides, Aldehydes, Incomplete combustion products

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could

ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
1-DECENE, HOMOPOLYMER HYDROGENATED	Aerosols (thoracic fraction)	TWA	5 mg/m3		N/A	ExxonMobil
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m^3 - ACGIH TLV (inhalable fraction), 5 mg/m^3 - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Orange
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.854
Flammability (Solid, Gas): N/A
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D

pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 220 cSt (220 mm2/sec) at 40 °C | 28.5 cSt (28.5 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/A
Pour Point: -36°C (-33°F)

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.

Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

Contains:
Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL50 1003 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 mg/l: data for similar materials

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: TSCA
Special Cases:

Inventory	Status
AICS	Restrictions Apply
IECSC	Restrictions Apply
KECI	Restrictions Apply
NDSL	Restrictions Apply

PRODUCT REGISTRATION STATUS: USA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
PHENOL, 4,4-METHYLENEBIS(2,6-BIS(1,1-DIMETHYLETHYL)-	118-82-1	5

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1

H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

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Internal Use Only
MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2007966XUS (1011899)

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in India.

PRODUCT

Product Name: **MOBILGEAR SHC 220**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560402515, 610808
Intended Use: Gear oil

COMPANY IDENTIFICATION

Supplier: **ExxonMobil Lubricants Private Limited**
4th Floor, Building Number 10, Tower C
DLF Cyber City, DLF Phase-II
Gurgaon - 122 002
Haryana India

Supplier General Contact +91-124-4951300

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*	Symbols/Risk Phrases
DITRIDECYL ADIPATE	16958-92-2	20 - 30%	None

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

HEALTH HAZARDS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulphur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210Â°C (410Â°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable

regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source
DITRIDECYL ADIPATE		TWA	5 mg/m3			ExxonMobil

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following is recommended: 5 mg/mÂ³ - ACGIH TLV (inhalable fraction).

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation. Particulate

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use. Nitrile,Viton

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Colour: Amber
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 Â°C): 0.874
Flash Point [Method]: >210Â°C (410Â°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316Â°C (600Â°F) [Estimated]
Vapour Density (Air = 1): > 2 at 101 kPa [Estimated]
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20 Â°C [Estimated]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 [Estimated]
Solubility in Water: Negligible
Viscosity: 220 cSt (220 mm2/sec) at 40ÂºC
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -36Â°C (-33Â°F)
Decomposition Temperature: N/D

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks

Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans.

Additional information is available by request.

IARC Classification:
The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1 2 = IARC 2A 3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND : Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

Material is not hazardous as defined by the EU Dangerous Substances/Preparations Directives.

EU LABELING: Not regulated according to EC Directives

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: DSL, TSCA
Special Cases:

Inventory	Status

AICS	Restrictions Apply
ELINCS	Restrictions Apply
IECSC	Restrictions Apply
KECI	Restrictions Apply

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS: Revision Changes:
Section 13: Disposal Considerations - Disposal Recommendations was modified.
Section 09: Phys/Chem Properties Note was modified.
Section 09: Boiling Point ÂºC(ÂºF) was modified.
Section 09: Flash Point ÂºC(ÂºF) was modified.
Section 09: n-Octanol/Water Partition Coefficient was modified.
Section 08: Comply with applicable regulations phrase was modified.
Section 09: Vapour Pressure was modified.
Section 01: Company Mailing Address was modified.
Section 01: Company Mailing Address was modified.
Section 01: Company Mailing Address was modified.
Section 09: Relative Density - Header was modified.
Section 09: Flash Point ÂºC(ÂºF) was modified.
Section 09: Viscosity was modified.
Section 08: Exposure limits/standards was modified.
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 09: Decomposition Temperature was added.
Section 09: Decomposition Temp - Header was added.
Section 09: Vapour Pressure was added.
Section 08: Exposure Limit Values - Header was added.
Section 08: OEL Table - Form Column - Header was added.
Section 08: OEL Table - Limit Column - Header was added.
Section 08: OEL Table - Notation Column - Header was added.
Section 08: OEL Table - Source Column - Header was added.
Section 08: OEL Table - Substance Name Column - Header was added.
Section 08: Exposure Limits Table was added.
Section 08: Exposure Limit Values - Header was added.
Section 08: OEL Table - Substance Name Column - Header was deleted.
Section 08: OEL Table - Limit Column - Header was deleted.
Section 08: OEL Table - Notation Column - Header was deleted.
Section 08: Exposure Limit Values - Header was deleted.
Section 08: Exposure Limit Values - Table Header was deleted.
Section 08: OEL Table - Source Column - Header was deleted.
Section 08: OEL Table - Year Column - Header was deleted.
Section 08: Exposure Limits Table was deleted.
Section 08: OEL Table - Form Column - Header was deleted.

(AP Core)

DGN: 2009053XIN (1012223)

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: (see Section 16 for Synonyms) **MOBILITH SHC 220**
Product Description: Synthetic Base Stocks and Additives
Product Code: 2015A0204040, 644021-00, 970409
Intended Use: Grease

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX. 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1H-BENZOTRIAZOLE-1-METHANAMINE, N,N-BIS(2-ETHYLHEXYL)-METHYL-	94270-86-7	0.1 - < 1%	H315, H317, H401, H411
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	68411-46-1	1 - < 5%	H402, H412
LITHIUM HYDROXIDE MONOHYDRATE	1310-66-3	0.1 - < 1%	H302, H314(1B)
LITHIUM SALT OF ALIPHATIC ACID	CONFIDENTIAL	1 - < 5%	H302
METHYLENE BIS(DIBUTYLDITHIOCARBAMATE)	10254-57-6	1 - < 5%	H413
ZINC DITHIOPHOSPHATE	68649-42-3	1 - < 2.5%	H315, H318, H401, H411

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION
Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT
Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish

flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >204°C (399°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
LITHIUM HYDROXIDE MONOHYDRATE		Ceiling	1 mg/m3		N/A	OARS WEEL

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Semi-fluid
Color: Red
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.9
Flammability (Solid, Gas): N/D
Flash Point [Method]: >204°C (399°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F) [Estimated]
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C [Estimated]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 [Estimated]
Solubility in Water: Negligible
Viscosity: 220 cSt (220 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/D

NOTE: Most physical properties above are for the oil component in the material.

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	

Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

An ingredient or ingredients that are classified as a skin sensitizer.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, IECSC, KECI, TSCA

Special Cases:

Inventory	Status
NDSL	Restrictions Apply
PICCS	Restrictions Apply

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC DITHIOPHOSPHATE	68649-42-3	1 - < 2.5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NAPHTHENIC ACIDS, ZINC SALTS	12001-85-3	15
ZINC DITHIOPHOSPHATE	68649-42-3	13, 15, 17, 19
ZINC NEODECANOATE	27253-29-8	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H314(1B): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H402: Harmful to aquatic life; Acute Env Tox, Cat 3
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3
H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

SYNONYMS: MOBILITH SHC 220 ELECTROLUBER

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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2010011XUS (553335)

Material Safety Datasheet
Glass Products

Date: 16/03/2015

Section 1: Product and company identification

1.1 Product
Multiaxial fabrics constructed from e-glass fibre for composite products.

1.2 Company
Devold AMT AS
N-6030 Langevåg
Norway

Tel + 47 70 19 85 00

Section 2: Composition/information on ingredients.

Material in product.	**Content**
For e-glass fibre	
Fibrous glass (fibre glass continuous filament)	98%-100%
Size (surface coating)	0%-2%
For knitting yarn	
Polyester	98.5%
Sizing	1.5%
For product	
E-glass	98.5%
Polyester	1.5%

Section 3: Identification of risks

- Health risks
  - Eye contact
    This product may cause irritation to eyes. Dust and fibers from this product cause mechanical irritation.
  - Skin contact
    Dust and fibers from this product may cause itching and short-term mechanical irritation.
  - Ingestion
    Dust and fibers from this product may cause mechanical irritation.
  - Inhalation
    Dust and fibers from this product may cause irritation to the nose, throat and respiratory tract.

- Medical conditions aggravated by exposure
  Respiratory or skin conditions that are aggravated by mechanical irritants may be at an increased risk for worsening from exposure to this product.

- General health risk.
  Glass fibre filament is, by the international Agency for Research in cancer, classified in group 3: Not classified as carcinogenic for human beings

Section 4: First Aid.

- Inhalation
  If inhaled, immediately remove the affected person to fresh air. If symptoms persist, get medical attention.
- Eye contact
  Immediately flush eyes with plenty of water for a minimum of 15 minutes. Do not rub or scratch eyes. Rubbing or scratching may cause mechanical damage. If irritation persists get medical attention.
- Skin contact
  In the event of skin contact wash immediately with soap and water. Use a washcloth to help remove fibers To avoid further irritation, do not rub or scratch affected areas. Rubbing or scratching may force fibers into the skin. If irritation persists seek medical attention.
- Ingestion
  Ingestion f this material is unlikely. If this does occur, observe the victim for several days to make sure that intestinal blockage does not occur

Section 5: Fire fighting measures.

Flash point:	None
Flamability classification:	Non- flammable
Upper flammable limit:	Not applicable
Lowe flammable limit:	Not applicable

Extinguishing media
Dry chemical, foam, carbon dioxide and water.

Unusual fire and explosion
None Known

Fire fighting instructions

No special procedures are expected to be required for this product. Use general accepted fire fighting procedures for packaging materials. Use self-contained breathing apparatus and fire fighting protective clothing in a sustained fire.

Hazardous Combustion Products
Primary combustion products are carbon monoxide, carbon dioxide and water. Other undetermined compounds could be released in small quantities.

Section 6: Accidental release measures.

Release of this product to the land, water and air may require reporting to the proper authorities. Refer to local and applicable regulations

- Land spill

Scoop up material and place into a suitable container for disposal as non-hazardous waste.

- Water spill

This material is non hazardous in water.

- Air release.

This material will settle out of the air. If concentrated on land, it can be scooped up for disposal as non-hazardous waste.

Section 7: Handling and storage.

Handling

General: The fabrics should be handled with care.

- Precautions
  - Use adequate protective clothing to protect against skin contact: mask, gloves and goggles
  - Ensure that handling is carried out in a well-ventilated area. Spot extractor fans should be used to avoid excessive dust.
  - Ventilation systems should have a filter to avoid discharge into open air.
  - Insulating varnish may be applied to electronic boards and electrical terminals.
  - Avoid friction that may generate flying debris.

Storage

- Recommended conditions
  - Storage conditions do not affect the stability of the product or increase the danger risks.
  - The product should be stored in a clean dry place away from dust and it original packaging.

Section 8: Exposure controls/personal protection.

- General — If dust is created and ventilation is inadequate it is advised to wear dust mask, eye protection and work clothing.
- Individual protection
  - Respiratory - Dust mask
  - Hands - Gloves (surgical or cotton type)
  - Eyes - Goggles
  - Skin - Protective cream may help.

Section 9: Physical and chemical properties

Physical state	Solid
Form	Fabric
Color	White (white stitching)
Odor	None
pH concentration	N/A
Temperature at which physical state changes	N/A
Decomposition temperature	N/A
Inflammation point	N/A
Self-combusting point	N/A
Explosive characteristics	N/A
Steam pressure	N/A
Solubility	Insoluble fiber.
Radioactivity	N/A

Section 10: Stability and reactivity

Product stability	Stable
Possible dangerous reactions	Not identified
Possible decomposition agents (other than carbon monoxide,	None

carbon dioxide and water)

Section 11: Toxicological information

Acute toxicity	Product assumed non toxic
Local effects	Possible irritation of mucous membrane

Section 12: Ecological information

There are no known effects to the behavior and evolution of the product with respect to the environment..
The product has no know effects on the environment and is stable and non polluting.

Section 13: Considerations concerning disposal

Recommended disposal methods	Dispose of in a suitable place complying with local regulations. Do not incinerate, as this may cause fiber to be disbursed into the air threatening electrical equipment.

Section 14: Information regarding transport

Codes and classifications of international regulations	None
Specific transport conditions	None

Section 15: Regulatory information

Warnings related to danger and safety	N/A

Section 16:Additional information

We believe the information contained in this safety data sheet to be correct to the best of our knowledge. However, the information contained in this sheet is not exhaustive. This safety sheet does not anticipate all the circumstances in which the product may be used, nor all the physical and mental characteristics of each individual responsible for its transportation or transformation. It is the

duty of the user to test and use this product safely, in accordance with the laws and regulations in force. Unless otherwise stated in writing, we accept no responsibility for complaints or damage caused related to the use of this product. For additional information, please contact Devold AMT AS.

BOSTIK FINDLEY

HAZARD RATINGS HMIS
Health 1
Flammability 1
Reactivity 0
PPE

1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product **V048740**

MSDS Name NEV-SZ REG NS160 1

CAS # Mixture

Generic Description Miscellaneous

Manufacturer
BOSTIK FINDLEY, INC.
211 Boston Street
Middleton , MA 01949 USA

24 Hour Emergency Assistance
Phone: 1-800-227-0332

General Assistance
Phone: 1-978-777-0100

MSDS Assistance
Phone: 1-978-777-0100

2 COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Percentage
Graphite	7782-42-5	10 - 30
Copper Powder	7440-50-8	5 - 10
Zinc Oxide	1314-13-2	1 - 3
Aluminum Powder	7429-90-5	1 - 3
Non-hazardous and other ingredients below reportable levels	Proprietary	Balance

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Extended contact with this material may cause irritation to the skin, eyes, and mucous membranes. Primary Routes of Exposure: eyes, skin, and inhalation. Irritating fumes and gases may be released upon thermal processing or during combustion.

POTENTIAL HEALTH EFFECTS

SKIN CONTACT: This product may cause irritation to the skin. Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.

EYE CONTACT: This product may cause irritation to the eyes.

INHALATION: Fumes released during thermal processing may irritate respiratory system, skin and eyes.

INGESTION: Ingestion may cause gastrointestinal tract discomfort or damage.

TARGET ORGANS

Skin.

4 FIRST AID MEASURES

SKIN

For minor exposures, wash thoroughly with soap and clean water. In situations involving considerable skin contact, place the contaminated person in a deluge shower for at least 15 minutes. Remove contaminated clothing to prevent further skin exposure and dispose of properly. Get medical attention if irritation persists.

EYE

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.

INHALATION

Move person to non-contaminated air. If the affected person is not breathing, apply artificial respiration. Seek medical attention.

INGESTION

Do not induce vomiting. If person is conscious and can swallow, immediately give two glasses of water. Seek immediate medical attention. Do not give anything by month to an unconscious or convulsing person.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Dermatitis.

NOTES TO PHYSICIAN

Treat symptomatically and supportively. Contact Bostik Findley to determine whether any additional information is available.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Use dry chemical, carbon dioxide, or foam. Water spray (fog).

DUST EXPLOSION HAZARD

None Known

SENSITIVITY TO MECHANICAL IMPACT

None Known

SENSITIVITY TO STATIC DISCHARGE

None Known

UNUSUAL FIRE & EXPLOSION HAZARDS

Product may burn and produce toxic gases in a fire.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS

Firefighters should wear full protective clothing including self contained breathing apparatus.

Flash Point > 482 F (> 250 C)

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY ACTION

Appropriate safety measures and protective equipment should be used. See Section 8. Do not discharge to lakes, streams, ponds, or sewers. Dispose of in compliance with local, state, and federal regulations.

SPILL OR LEAK PROCEDURE

Scrape up grease and deposit into appropriate containers for disposal.

CLEAN-UP PROCEDURES

Scrape up the spilled material. Deposit into appropriate containers for disposal. Follow the guidelines of 29CFR 1910.120 for dealing with a spill of any size. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill, including the material spilled, the quantity of the spill and the area in which the spill occurred. Wear appropriate protective equipment and clothing during clean-up.

7 HANDLING & STORAGE

STORAGE

Keep the container tightly closed and in a cool, well-ventilated place.

EMPTY CONTAINER PRECAUTION

Attention Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption, or where skin contact can occur.

8 E POSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Ventilation is not normally required.

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Wear safety glasses with side shields.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Wear protective impervious gloves to minimize skin exposure. Work clothing sufficient to prevent all skin contact should be worn, such as coveralls and long sleeves.

RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Not normally needed.

EXPOSURE LIMITS

ACGIH - Occupational Exposure Limits - 8 Hour TWAs

COPPER	7440-50-8	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists, as Cu)
ZINC O IDE	1314-13-2	5 mg/m3 TWA (fume); 10 mg/m3 TWA (dust)

OSHA - Vacated PELs - Time Weighted Averages

COPPER	7440-50-8	0.1 mg/m3 TWA (fume, dusts, mists as Cu)
ZINC O IDE	1314-13-2	5 mg/m3 TWA (fume); 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

9 PHYSICAL & CHEMICAL PROPERTIES

Solubility In Water	0.1 %
Target Solids	100 %
Density	1.21 g/cc
Odor Threshold	NA
Octanol/Water Coefficient	NA
Odor	GREASELIKE
Color	SILVERY GRAY
Physical State	Paste
Freeze Protect	No

10 STABILITY & REACTIVITY

STABILITY/INCOMPATABILITY

Stable under normal conditions.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

If product is burned hazardous gases such as oxides of carbon and nitrogen and various hydrocarbons may be produced.

HAZARDOUS POLYMERIZATION

Will not occur.

CONDITIONS TO AVOID

Avoid contact with Strong Oxidizers and Strong Acids.

11 TO ICOLOGICAL INFORMATION

LD50

NIOSH - Selected LD50s and LC50s

ZINC O IDE	1314-13-2	Inhalation LC50 Mouse: 2500 mg/m3; Oral LD50 Mouse: 7950 mg/kg

CHRONIC EFFECTS

Chronic overexposure to the hazardous materials in this product has been associated with dermatitis.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available for this product.

13 DISPOSAL CONSIDERATIONS

We make no guarantee or warranty of any kind that the use or disposal of this product complies with all local, state, or federal laws. It is also the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable statutes.

WASTE DISPOSAL

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Be aware that State and Local requirements may differ widely depending on location and may in many cases be different from Federal rules.

14 TRANSPORT INFORMATION

COMMENTS

This product is not regulated as a hazardous material by the United States (DOT) or Canadian (TDG) transportation regulations. This product is regulated under IMDG Classification for Ocean Transport as an environmentally hazardous substance, liquid, n.o.s. (contains copper metal powder), class 9, UN3082, PG III, Marine Pollutant.

Proper Shipping Name	Non-Regulated
DOT Restrictions	Not Applicable

15 REGULATORY INFORMATION

This MSDS is prepared and distributed pursuant to the Federal Hazard Communication Standard, 29 CFR 1910.1200.

FEDERAL REGULATIONS

All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA - Hazardous Substances and their Reportable Quantities

COPPER	7440-50-8	final RQ = 5000 pounds (2270 kg) (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)
ZINC O IDE	1314-13-2	statutory RQ = 1 pound (0.454 kg)

Based on an evaluation of the components used, this product does contain hazardous ingredients identified as per 29 CFR 1910.1200.

STATE REGULATIONS

If this product contains any ingredients listed under California Proposition 65, they will be noted below:

INTERNATIONAL REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and contains all the information required by the Controlled Products Regulations.

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS). Class D Division 2 Sub-division B.

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES

Not Regulated

SARA 311/312 HAZARD CATEGORIES

Immediate Hazard	No
Delayed Hazard	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

SARA 313 TOXIC CHEMICALS

Component	CAS Number	Percentage
Copper Powder	7440-50-8	5 - 10
Zinc Oxide	1314-13-2	1 - 3
Aluminum Powder	7429-90-5	1 - 3

16 OTHER INFORMATION

DISCLAIMER

The data in this MSDS has been compiled from publicly available sources. This data relates only to the designated product and not to the use of said product in combination with other materials. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Responsibility for proper precautions and safe use of the product lies with the user. All data in this MSDS is typical of the product as a whole, and does not represent any individual lot or batch, therefore, Bostik Findley, Inc. makes no warranty about the accuracy of the data herein and assumes no liability for the use of such data. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Issue Date 10-Jul-2002 **Supercedes** 06-Nov-2001

Prepared By Russell Hardenber

MSDS Sections Reviewed and/or Updated

Composition / Information on Ingredients: COMPOSITION COMMENTS

Composition / Information on Ingredients: CONDITIONAL DEFAULT STATEMENTS

*** BÜFA®-Bonding Paste 0588** Date revised: 30.05.2015

7400588 Version: 8 / EU Master No. M-401 Print date: 13.01.16

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

BÜFA®-Bonding Paste 0588

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Purpose of use: Raw substance formulas for manufacturing shaped parts from unsaturated polyester / vinyl ester resins.

1.3. Details of the supplier of the safety data sheet

Address

BÜFA Composite Systems
GmbH & Co. KG
Hohe Looge 2-8
26180 Rastede

Telephone no.	+49 4402 975-0
Fax no.	+49 4402 975-400
Information provided by / telephone	Department product safety / +49 4402 975-415
E-Mail	produktsicherheit-compositesystems@buefa.de

1.4. Emergency telephone number

Giftzentrale Goettingen: +49 551 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 3	H226	
Skin Irrit. 2	H315	
Eye Irrit. 2	H319	
Repr. 2	H361d	
STOT SE 3	H335	
STOT RE 1	H372	Organs: Ear; Route of exposure: inhalative

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Danger

Hazard statements

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H335	May cause respiratory irritation.

H372	Causes damage to organs through prolonged or repeated exposure: Ear; Route of exposure: inhalative

Precautionary statements

P210.9	Keep away from sparks, open flames and other ignition sources. No smoking.
P260.8	Do not breathe vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains Styrene

2.3. Other hazards

The product does not contain PBT/vPvB-substances.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients

Styrene

CAS No.	100-42-5				
EINECS no.	202-851-5				
Registration no.	01-2119457861-32-XXXX				
Concentration	>=	29	<	50	%

Flam. Liq. 3	H226	
Skin Irrit. 2	H315	
Acute Tox. 4	H332	
Eye Irrit. 2	H319	
STOT SE 3	H335	
STOT RE 1	H372	Organs: Ear; Route of exposure: inhalative
Asp. Tox. 1	H304	
Repr. 2	H361d	

Complete text of hazard statements in chapter 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Adhere to personal protective measures when giving first aid. Remove soiled or soaked clothing immediately, do not allow to dry.

After inhalation

Remove the casualty into fresh air and keep him calm. Irregular breathing/no breathing: artificial respiration. In the event of symptoms take medical treatment.

After skin contact

Wash off immediately with soap and water.

After eye contact

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Seek medical advice immediately. Remove contact lenses

After ingestion

Rinse mouth thoroughly with water. Summon a doctor immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If individual is drowsy or unconscious place in recovery position (on left side, with head down).

4.2. Most important symptoms and effects, both acute and delayed

The following symptoms may occur: Headache, Dizziness, Nausea

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, Dry powder, Carbon dioxide

Non suitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible. In the event of fire the following can be released: Carbon monoxide (CO); Nitrogen oxides (NOx); dense black smoke

5.3. Advice for firefighters

Use self-contained breathing apparatus.

Collect contaminated fire-fighting water separately, must not be discharged into the drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes and clothing. Use personal protective clothing. Keep away sources of ignition. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol.

6.2. Environmental precautions

Do not allow to enter drains or waterways. Do not discharge into the subsoil/soil. Prevent spread over a wide area (e.g. by containment or oil barriers).

6.3. Methods and material for containment and cleaning up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust). When picked up, treat material as prescribed under Section 13 "Disposal".

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Observe the usual precautions for handling chemicals.

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Vapours can form an explosive mixture with air.

7.2. Conditions for safe storage, including any incompatibilities

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Keep container tightly closed and dry in a cool, well-ventilated place. Protect from heat and direct sunlight.

7.3. Specific end use(s)

No information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Derived No/Minimal Effect Levels (DNEL/DMEL)

Styrene

Reference substance	Styrene			
DNEL				
Conditions	Worker	Acute	inhalative	Systemic effects
Concentration	289	mg/m³		
DNEL				
Conditions	Worker	Long term	inhalative	Systemic effects
Concentration	85	mg/m³		
DNEL				
Conditions	Worker	Acute	inhalative	Local effects
Concentration	306	mg/m³		
DNEL				
Conditions	Worker	Long term	dermal	Systemic effects
Concentration	406	mg/kg/d		

8.2. Exposure controls

Appropriate engineering controls

Use only in well ventilated areas.
Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommendedor statutory limits.

General protective and hygiene measures

Provide good ventilation of working area (local exhaust ventilation if necessary). Avoid contact with skin and eyes. Do not inhale gases/vapours/aerosols.

Respiratory protection

If workplace limits are exceeded, a respiratory protection approved for this particular job must be worn.
Short term: filter apparatus, Filter A

Hand protection

Chemical resistant gloves

Appropriate Material	Butyl rubber		
Material thickness		0,7	mm
Breakthrough time	=	30	min

Eye protection

Tightly fitting safety glasses

Body protection

Clothing as usual in the chemical industry.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Pasty		
Colour	grey		
Odour	of styrene		
Flash point			
Value		32	°C
Efflux time			
Value	>	61	s
Method	DIN EN ISO 2431 - 6 mm		
Density			
Value		1,25	g/cm³

Temperature	20	°C

9.2. Other information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability

The product is stable.

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid

Protect from heat and direct sunlight.

10.5. Incompatible materials

Reactions with peroxides and other radical components.

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

Based on available data, the classification criteria are not met.

Acute oral toxicity (Components)

Styrene

Species	rat		
LD50	>	5000	mg/kg

Acute dermal toxicity

Based on available data, the classification criteria are not met.

Acute dermal toxicity (Components)

Styrene

Species	rat		
LD50	>	5000	mg/kg

Acute inhalational toxicity

ATE		39,5	mg/l
Administration/Form	Vapors		
Method	calculated value (Regulation (EC) No. 1272/2008)		
ATE		5,02	mg/l
Administration/Form	Dust/Mist		
Method	calculated value (Regulation (EC) No. 1272/2008)		

Acute inhalative toxicity (Components)

Styrene

Species	rat		
LC50		11,8	mg/l
Duration of exposure		4 h	
Administration/Form	Vapors		

Skin corrosion/irritation

evaluation	irritant

Serious eye damage/irritation

evaluation irritant

Sensitization (Components)

Styrene

evaluation non-sensitizing

Mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

evaluation Suspected of damaging the unborn child.

Specific Target Organ Toxicity (STOT)

evaluation May cause damage to organs.
Route of exposure inhalative
Organs: Ear

Other information

Inhalation of the vapours causes irritation of the respiratory tract and mucous membrane, headaches, nausea, giddiners, vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Fish toxicity

Styrene

LC/EC/IC50	>	1,0	to	10	mg/l

Daphnia toxicity

Styrene

Species	Daphnia magna				
LC/EC/IC50	>	1,0	to	10	mg/l

Algae toxicity

Styrene

LC/EC/IC50	>	1,0	to	10	mg/l

Bacteria toxicity

No toxicological data are available.

12.2. Persistence and degradability

For this subsection there is no ecotoxicological data available on the product as such.

Biodegradability

Styrene

evaluation Readily biodegradable (according to OECD criteria)

12.3. Bioaccumulative potential

For this subsection there is no ecotoxicological data available on the product as such.

12.4. Mobility in soil

For this subsection there is no ecotoxicological data available on the product as such.

12.5. Results of PBT and vPvB assessment

The product does not contain PBT/vPvB-substances.

12.6. Other adverse effects

For this subsection there is no ecotoxicological data available on the product as such.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

EWC waste code 07 02 08* other still bottoms and reaction residues

The listed waste code numbers, according to the European Waste Catalogue (EWC), are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company.

Disposal recommendations for packaging

Packaging that cannot be cleaned should be disposed off as product waste.

SECTION 14: Transport information

Land transport ADR/RID

14.1. UN number

UN number 1866

14.2. UN proper shipping name

RESIN SOLUTION

14.3. Transport hazard class(es)

Class	3

14.4. Packing group

Packing group	III
Special provision	640E
Remarks	Viscous product: Transport according to paragraph 2.2.3.1.5 ADR/RID
Tunnel restriction code	D/E

Marine transport IMDG/GGVSee

14.1. UN number

UN number 1866

14.2. UN proper shipping name

RESIN SOLUTION

14.3. Transport hazard class(es)

Class	3

14.4. Packing group

Packing group	III
Remarks	Transport according to 2.3.2.5 of the IMDG Code
EmS	F-E, S-E

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

VOC

VOC (EU) 0,22 %

Other information

The product does not contain substances of very high concern (SVHC).

MAL-Code 5-6

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

Hazard statements listed in Chapter 3

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure:

Abbreviations

CAS: Chemical Abstracts Service
EAK: Europäischer Abfallkatalog
EINECS: European Inventory of Existing Commercial Chemical Substances
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very persistent and very bioaccumulative
VOC: Volatile Organic Compound

CLP categories listed in Chapter 3

Acute Tox. 4	Acute toxicity, Category 4
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2	Eye irritation, Category 2
Flam. Liq. 3	Flammable liquid, Category 3
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin irritation, Category 2
STOT RE 1	Specific target organ toxicity - repeated exposure, Category 1
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

HEALTH AND SAFETY DATA SHEET

OPTIMAT CARBON VEIL

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT : **OPTIMAT CARBON VEIL**

COMPANY : PRF Composite Materials
3 Upton Road
Poole
Dorset
BH17 7AA

TELEPHONE : 01202 680022

FAX : 01202 680077

Out of hours : 07785 501851

2. HAZARDS IDENTIFICATION

Cutting through the material and surface scuffing may release small amounts of airborne carbon fibres and dust which are mechanical irritants to skin, eyes and upper respiratory system.

As with any airborne dust, pre-existing upper respiratory and lung diseases may be aggravated.

Cutting through the material or mechanical processing may create small amounts of respirable fibre particulates of carbon.

Airborne Carbon fibres or dust may result in shorts and malfunction of electrical equipment.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Constitution:

	% By Weight	CAS / EINECS No
Pitch or PAN based Carbon Fibre	75 - 97	7440-44-0 / 231-153-3
Polymeric binder	3.0 – 25	N/A

HEALTH AND SAFETY DATA SHEET
OPTIMAT CARBON VEIL

4. FIRST AID MEASURES

SKIN	Rinse affected areas with water and wash gently with soap. Do not use detergent.
EYES	Flush eyes with large quantities of water. Have eye bath readily available in areas where eye contact may occur. Seek medical attention if irritation continues.
INGESTION	Drink plenty of water. Seek medical advice if symptoms persist.
INHALATION	Remove to fresh air, drink water and clear throat and blow nose to evacuate fibre/dust. Seek medical attention.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Use extinguishing agent suitable for type of surrounding combustible materials.

Unusual Fire & Explosion Hazards:

Incineration of product may result in release of airborne Carbon fibres leading to shorts in electrical equipment.

6. ACCIDENTAL RELEASE MEASURES

Do not allow dust or fibres to be wind blown.
Unwanted product should be collected and stored in sealed bags.

Do not use compressed air to remove dust or fibres from clothing or equipment

Dust or fibre deposits should be collected using a suitable vacuum cleaner with HEPA exhaust air filtration. The collected deposits and used vacuum bags should be sealed into poly bags before disposal.

If sweeping is required the area should be thoroughly damped down with water before sweeping commences to prevent dust or fibre becoming airborne during sweeping.

7. HANDLING AND STORAGE

Handling: Keep dust generation to a minimum.

Storage: Store dry and cool. Keep in original wrapping until required for use.

HEALTH AND SAFETY DATA SHEET
OPTIMAT CARBON VEIL

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Applicable Occupational Exposure Limits: from HSE EH40 / 2005 and Supplement Oct 2007:

Fine Carbon Dust: 3.5 mg/m^3(8 hr TWA) and 7 mg/m^3 (STEL)

Respiratory Protection: Use local exhaust ventilation (extraction) where available to maintain airborne carbon dust levels below the occupational exposure limit. If airborne carbon dust levels exceed the occupational exposure limit wear disposable dust masks to EN149:2001 - FFP2minimum.

Hand Protection: The use of disposable vinyl gloves is recommended.

Eye Protection: Wear goggles or safety glasses with side shields.

Skin Protection: Wear overalls that are loose fitting at the neck and wrists.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black Tissue, veil or mat.

Density: 60 -110 kg/m$_3$

Flammability: The material will burn for a short period until the polymeric binder is burnt out.

10. STABILITY AND REACTIVITY

Stability/Conditions to avoid: Stable

Materials to avoid: Strong oxidising agents.

Hazardous decomposition products: Combustion products are H_2O, CO_2 CO_2 and hydrocarbons.

Hazardous Polymerisation: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carbon fibre is non-toxic

Skin contact with carbon fibres or dust produced by cutting or mechanical processing of the product may cause temporary irritation to the eyes skin and respiratory system due to mechanical effects.

Prolonged or repeated skin contact may result in mechanical dermatitis

The carbon fibres have mean diameters > 6.0 μm and are not classified as respirable fibres; the fibres do not fibrillate during mechanical processing.

Cutting or mechanical processing of the products may create small amounts of respirable fibre particulates of carbon.

HEALTH AND SAFETY DATA SHEET
OPTIMAT CARBON VEIL

12. ECOLOGICAL INFORMATION

The fibre content will remain inert.

The polymeric binder may bio-degrade releasing the carbon fibres

13. DISPOSAL CONSIDERATIONS

Waste is not classified as a hazardous waste and may be disposed of at a normal licensed industrial waste site. Local regulations should be considered.

Waste should be bagged or suitably contained for disposal to prevent any dusts being wind blown during disposal.

Incineration of waste should only be done in incinerators fitted with exhaust gas filtration or scrubbers to prevent the release of airborne fibres and dust

14. TRANSPORT INFORMATION

Not regulated for Transport.

Ensure that dust is not wind blown during transportation

15. REGULATORY INFORMATION

These products are not subject to regulation

16. OTHER INFORMATION

Notes: Revised January 2009

Sections 2 - Hazards Info ; note added regarding respirable fibre particulates

Section 11 - Toxicology note added regarding respirable fibre particulates of carbon

Plus minor changes

This information only concerns the above named product(s) and may not be valid if used with other product(s) or in any process. This information is, to our best knowledge, correct and complete, but no guarantee can be given. It remains the responsibility of the user to make sure that the information is appropriate and complete for their particular use of the product.
If you have purchased this product for supply to a third party for use at work, it is your duty to take all necessary steps to ensure that any person handling or using the product is provided with the information on this sheet.
If you are an employer, it is your duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions which should be taken.

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name	**Optipit**
Product code	453841-DE03
SDS no.	453841
Historic SDS no.	66400-AG
Product type	Grease

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses
General use of lubricants and greases in vehicles or machinery-Industrial General use of lubricants and greases in vehicles or machinery-Professional

Use of the substance/ mixture	Grease for industrial applications. For specific application advice see appropriate Technical Data Sheet or consult our company representative.

1.3 Details of the supplier of the safety data sheet

Supplier	BP Europa SE Geschäftsbereich Industrieschmierstoffe Erkelenzer Straße 20 D-41179 Mönchengladbach Germany Telefon: +49 (0)2161 909-30 Telefax: +49 (0)2161 909-392
E-mail address	MSDSadvice@bp.com

1.4 Emergency telephone number

EMERGENCY TELEPHONE NUMBER	Carechem: +44 (0) 1235 239 670 (24 hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification	R43 R52/53
Human health hazards	May cause sensitisation by skin contact.
Environmental hazards	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

2.2 Label elements

Hazard symbol or symbols

Indication of danger Irritant

Risk phrases R43- May cause sensitisation by skin contact.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 2: Hazards identification

Safety phrases
S28- After contact with skin, wash immediately with plenty of soap and water.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Hazardous ingredients
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)

Supplemental label elements
Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings
Not applicable.

Tactile warning of danger
Not applicable.

2.3 Other hazards

Other hazards which do not result in classification
Defatting to the skin.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

SECTION 3: Composition/information on ingredients

Substance/mixture
Mixture

Highly refined mineral oil and additives. Thickening agent.

Product/ingredient name	Identifiers	%	Classification 67/548/EEC	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
Fatty acids, vegetable-oil, Me esters, sulfurized	EC: 276-337-4 CAS: 72102-30-8	>=0.25 - <2.5	N; R51/53	Aquatic Chronic 2, H411	[1]
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	REACH #: 01-0000016000-92 EC: 412-780-3 Index: 042-004-00-5	>=1 - <2.5	Xi; R38 R43 N; R51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
Phosphorous acid, decyl diphenyl ester.	EC: 247-777-4 CAS: 26544-23-0	>=0.25 - <1	Xi; R38 R43 N; R51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
zinc bis[O-(2-ethylhexyl)] bis[O-(isobutyl)] bis (dithiophosphate)	EC: 247-810-2 CAS: 26566-95-0	>=0.25 - <1	Xi; R41 N; R51/53	Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1]

See Section 16 for the full text of the R-phrases declared above.

See Section 16 for the full text of the H statements declared above.

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact
Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. In the event of any complaints or symptoms, avoid further exposure. Get medical attention.

Inhalation
If inhaled, remove to fresh air. Get medical attention if symptoms appear. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 4: First aid measures

Ingestion
Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention if symptoms occur.

Protection of first-aiders
No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician
In case of inhalation of decomposition products in a fire, symptoms may be delayed.
The exposed person may need to be kept under medical surveillance for 48 hours.
Treatment should in general be symptomatic and directed to relieving any effects.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media
Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture
In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products
Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)
metal oxide/oxides
nitrogen oxides (NO, NO_2 etc.)
sulphur oxides (SO, SO_2, etc.)

5.3 Advice for firefighters

Special precautions for fire-fighters
Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. This material is harmful to aquatic organisms.

Special protective equipment for fire-fighters
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. Do not breathe vapour or mist. Ensure good ventilation. Put on appropriate personal protective equipment.

For emergency responders
Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

6.2 Environmental precautions
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.

SECTION 6: Accidental release measures

6.3 Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Use a tool to scoop up solid or absorbed material and place into appropriate labelled waste container.

Large spill

Immediately contact emergency personnel. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. If emergency personnel are unavailable, contain spilt material. Suction or scoop the spill into appropriate disposal or recycling vessels, then cover spill area with oil absorbent. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 5 for firefighting measures.
See Section 8 for information on appropriate personal protective equipment.
See Section 12 for environmental precautions.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store and use only in equipment/containers designed for use with this product. Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10).

Germany - Storage code

11

7.3 Specific end use(s)

Recommendations

See section 1.2 and Exposure scenarios in annex, if applicable.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived No Effect Level

No DNELs/DMELs available.

SECTION 8: Exposure controls/personal protection

Predicted No Effect Concentration

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

Respiratory protective equipment is not normally required where there is adequate natural or local exhaust ventilation to control exposure.
In case of insufficient ventilation, wear suitable respiratory equipment.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

General Information:

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Recommended: Nitrile gloves.
Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.
Our recommendations on the selection of gloves are as follows:

Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.
If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.
It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Glove Thickness:

SECTION 8: Exposure controls/personal protection

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

• Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

• Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Skin and body

Use of protective clothing is good industrial practice.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	Grease
Colour	Clear Brown. [Dark]
Odour	Mild
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Drop Point	>250 °C
Flash point	Closed cup: >150°C (>302°F) [Based on Lubricants - Base Oils]
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Density	<1000 kg/m³ (<1 g/cm³) at 20°C
Solubility(ies)	insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

SECTION 9: Physical and chemical properties

Explosive properties Not available.

Oxidising properties Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

10.2 Chemical stability The product is stable.

10.3 Possibility of hazardous reactions Under normal conditions of storage and use, hazardous polymerisation will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid Avoid all possible sources of ignition (spark or flame).

10.5 Incompatible materials Reactive or incompatible with the following materials: oxidising materials.

10.6 Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Inhalation Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion No known significant effects or critical hazards.

Skin contact May cause skin dryness and irritation. May cause sensitisation by skin contact.

Eye contact No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation No specific data.

Ingestion No specific data.

Skin contact Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Eye contact No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Inhalation Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.

Ingestion Ingestion of large quantities may cause nausea and diarrhoea.

Skin contact Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Eye contact Potential risk of transient stinging or redness if accidental eye contact occurs.

Potential chronic health effects

General Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Environmental hazards Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Non-volatile. Grease. insoluble in water.

12.5 Results of PBT and vPvB assessment

PBT Not applicable.

vPvB Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste Yes.

European waste catalogue (EWC)

Waste code	Waste designation
12 01 12*	spent waxes and fats

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging

Methods of disposal Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Recycle, if possible.

Waste code	European waste catalogue (EWC)
15 01 10*	packaging containing residues of or contaminated by dangerous substances

Special precautions This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-

SECTION 14: Transport information

14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

14.6 Special precautions for user Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Other regulations

REACH Status The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

United States inventory (TSCA 8b) All components are listed or exempted.

Australia inventory (AICS) All components are listed or exempted.

Canada inventory At least one component is not listed.

China inventory (IECSC) All components are listed or exempted.

Japan inventory (ENCS) At least one component is not listed.

Korea inventory (KECI) All components are listed or exempted.

Philippines inventory (PICCS) At least one component is not listed.

National regulations

Hazard class for water 2 Appendix No. 4 (classified according VwVwS)

15.2 Chemical Safety Assessment This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DPD = Dangerous Preparations Directive [1999/45/EC]

SECTION 16: Other information

DSD = Dangerous Substances Directive [67/548/EEC]
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SADT = Self-Accelerating Decomposition Temperature
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVCB = Complex hydrocarbon substance
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Full text of abbreviated H statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1

Full text of abbreviated R phrases

R41- Risk of serious damage to eyes.
R38- Irritating to skin.
R43- May cause sensitisation by skin contact.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD]

Xi - Irritant
N - Dangerous for the environment

History

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Prepared by Product Stewardship

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition	Mixture
Code	453841-DE03
Product name	Optipit

Section 1:: Title

Short title of the exposure scenario	General use of lubricants and greases in vehicles or machinery - Industrial - B-B6.4 (i)
List of use descriptors	**Identified use name:** General use of lubricants and greases in vehicles or machinery-Industrial **Process Category:** PROC01, PROC02, PROC08b, PROC09 **Sector of end use:** SU03 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC04, ERC07 **Specific Environmental Release Category:** ATIEL-ATC SPERC 4.Biv1
Processes and activities covered by the exposure scenario	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

Section 2: Operational conditions and risk management measures

Section 2.1: Control of worker exposure

Product characteristics:

Physical state:	Liquid, vapour pressure < 0.5 kPa
Concentration of substance in product:	Covers use of substance/product up to 100 % (unless stated differently)
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Other given operational conditions affecting workers exposure:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities:
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Avoid direct eye contact with product also via contamination on hands.

General exposures (closed systems):
No other specific measures identified.

Initial factory fill of equipment Use in contained systems:
No other specific measures identified.
Initial factory fill of equipment (open systems):
Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out operation for more than 4 hours.

Operation of equipment containing engine oils and similar Use in contained systems:
No other specific measures identified.

Equipment cleaning and maintenance:
Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature).:
Drain down and flush system prior to equipment break-in or maintenance. Provide extract ventilation to emission points when contact with warm (>50°C) lubricant is likely. Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain-downs in sealed storage pending disposal

or for subsequent recycle.

Storage:
Store substance within a closed system.

Section 2.2:: Control of environmental exposure

Amounts used:	
EU tonnage of risk determining substance per year:	2.63E+3 Tonnes/year
Frequency and duration of use:	
Emission Days (days/year):	300
Environment factors not influenced by risk management:	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other given operational conditions affecting environmental exposure:	Negligible wastewater emissions as process operates without water contact.
Release fraction to wastewater from process (after typical onsite RMMs and before sewage treatment plan)	2.00E-11
Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	Prevent discharge of undissolved substance to or recover from onsite wastewater. User sites are assumed to be provided with oil/water separators and waste water to be discharged via a sewage treatment plant
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant:	
Estimated substance removal from wastewater via on-site sewage treatment (%):	69.1
Assumed domestic sewage treatment plant flow rate (m3/d)	2.00E+3
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): as product:	7594049
Conditions and measures related to external treatment of waste for disposal:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

Section 3:: Exposure estimation

Exposure estimation and reference to its source - Environment

Exposure assessment (environment):	Used ECETOC TRA model (May 2010 release).

Exposure estimation and reference to its source - Workers

Exposure assessment (human):	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4:: Guidance to check compliance with the exposure scenario

Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.ATIEL.org/REACH_GES
Health	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition	Mixture
Code	453841-DE03
Product name	Optipit

Section 1:: Title

Short title of the exposure scenario	General use of lubricants and greases in vehicles or machinery - Professional - B-B6. 4 (p)
List of use descriptors	**Identified use name:** General use of lubricants and greases in vehicles or machinery-Professional **Process Category:** PROC01, PROC02, PROC08a, PROC08b, PROC20 **Sector of end use:** SU22 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC09a, ERC09b **Specific Environmental Release Category:** ESVOC SpERC 9.6b.v1
Processes and activities covered by the exposure scenario	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

Section 2: Operational conditions and risk management measures

Section 2.1: Control of worker exposure

Product characteristics:

Physical state:	Liquid, vapour pressure < 0.5 kPa
Concentration of substance in product:	Covers use of substance/product up to 100 % (unless stated differently)
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Other given operational conditions affecting workers exposure:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities:
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product also via contamination on hands.

Operation of equipment containing engine oils and similar Use in contained systems:
No other specific measures identified.

Material transfers Non-dedicated facility:
Avoid carrying out activities involving exposure for more than 4 hours. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Equipment cleaning and maintenance Dedicated facility:
Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Storage:
Store substance within a closed system.

Section 2.2:: Control of environmental exposure

Amounts used:	
EU tonnage of risk determining substance per year:	5.39 Tonnes/year
Frequency and duration of use:	
Emission Days (days/year):	365
Environment factors not influenced by risk management:	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other given operational conditions affecting environmental exposure:	Negligible wastewater emissions as process operates without water contact.
Release fraction to wastewater from process (after typical onsite RMMs and before sewage treatment plan)	5.00E-04
Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	Prevent discharge of undissolved substance to or recover from onsite wastewater.
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant:	
Estimated substance removal from wastewater via on-site sewage treatment (%):	69.1
Assumed domestic sewage treatment plant flow rate (m3/d)	2.00E+3
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): as product:	19111
Conditions and measures related to external treatment of waste for disposal:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

Section 3:: Exposure estimation

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Used ECETOC TRA model (May 2010 release).

Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4:: Guidance to check compliance with the exposure scenario

Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.ATIEL.org/REACH_GES
Health	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

AQUA SUPER®

SAFETY SHEET

Drawn out after the Danish Ministry of Employment's order, number 559 by 4. July 2002

1. Identification of the substance/material:

Product name: **Optirens**

Manufacture: **North Clean Technology aps.**
Voddervej 1
DK-6780 Skaerbaek
Tlf: +45 97132382
Email: erri-comfort.dk

Product registration number:-

Use: All-round cleaning product.
Usually used in a mixture of 3-8%.

Date: 03.06.2008

2. Composition/information about content of substances:

Content among others	EINECS/ELINS	CAS-number	Weight-%	Classification
Lutensol GD 70	Pr.nr.99371	-	8-13	Xi;R41

-: Means no data or not relevant. The whole text for R-sentences can be found in point 16.

3. Danger identification:

The product can irritate the eyes.

4. First aid:

Inhaling:

Seek into an area with fresh air. If the malaise does not stop contact a doctor.

Skin contact:

Wash skin in plenty of water and soap. After cleaning smear skin with a thick cream. If irritation does not stop contact Medical doctor or an emergency room.

Eye contact:

Open one's eye wide and wash with plenty of water for at least 15 minutes. If irritation does not stop right away contact a Medical doctor.

Consumption:

Let the injured drink water or milk and contact a Medical doctor.

5. Fire control:

The product is not inflammable.

As far as possible the product must be removed from fire treaten areas.

6. Precautions to be taken at a leak caused by an accident:

If larger leaks occur, contact the Local Authorities

Larger amounts of waste is covered/soaked up with sand or another material with abilities for absorption. The absorbed material is treated as a waste. Pct. 8 and 13

Avoid that the spilled product runs into the drainage

7. Handling and storage:

When handling the product, secure good ventilation in the area. If this is not possible wear an approved breathing mask.

Avoid contact with skin and eyes. If skin contact cannot be avoided one must use safety gloves. When risk for splash use eye protectors. Read point 8.

Store the product in the original container and keep it closed.

Danger of fire: -

8. Expose control/personal protection:

The following information about the ingredients has a limit value after the At-directions 96:

GV(ppm) GV (mg/m3)

Securing the limit value can be controlled by occupational hygienic measuring.

The following personal protection is recommended if necessary:

Breathing mask: Rubber half-maske/A2-filtre Gloves: Nitrile rubber gloves* Eye protection: -

*): It is important to make clear that there are many different types of nitrile gloves and it is necessary to prove the efficiency of the glove in question with the concerned product.

9. Physic-chemical qualities:

Aappearence:	Clear liquid	Solubility in water:	Miscible
Smell:	Strong smell	Distributing coefficient:	-
pH:	10	Flash point:	100°C
Boiling point:	232°C	Self-ignition temperature:	200°C
Melting/freezingpoint	- C	Limits of explosion:	0,7 - 5,9%
Steam	< 0,01(BuAc = 1)	Viscosity (20 °C):	5,9 mPa
pressure(20°C):	0,01 kg/l	Other:	-
Specific Gravity	0,988 kg/l		

10. Stability and reactivity:

The product is stable if used under normal conditions.

Substances with strong oxidation abilities (Acid. Strong base.) Must be avioded.

11. Toxicological information (unhealthy qualities):

Inhaling:

Vapour can cause headache, dizzyness

Skin contact:

The product can cause irritation if the skin is in contact with the product for a longer period of time.

Eye contact:

The product cause irritation if it gets into the eyes.

Consumption:

Consumption can causnausea, indisposition and possibly vomiting.

12. Environmental information:

Dangerousness in the water environment: The used ingredients are all 100% biodegradable.

Eco toxic: the product is not considered to have any acute toxic effect on the enviroment.

Lc_{50} (96 hours, carp): 2000mg/l

13. Removal:

On transport as waste: read point 14.

14. Transportation:

The product is not regarded as dangerous goods.

15. Regulatory information:

Danger indicating label on the package:

Irritates the eyes and the skin (R36)
If the product gets into the eyes wash immediately with water and contact a medical doctor (S26)

May cause skin mild irritation

Use limit: Must not be used by persons under 18 years (apprentices excepted).

Requests for specific education: None.

Further proclamation: None.

16. Other information:

Text for R-sentences mentioned in point 2 and 3:

R22: Consumption may be dangerous

S26: If the product gets into the eyes wash immediately with water and contact a medical doctor

R36: Irritates the eyes and the skin.

R38 Irritates the skin

R41: Risk for dangerous damage on the eye

Made by:Bodil Riisng, DVM, Voddervej 1, 6780 Skaerbaek

OXSILAN® MM-0705

Version *1.18*
Revision Date 01/24/2014

Print Date 01/24/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	O SILAN MM-0705
MSDS Number	:	REL 10500
Company	:	Chemetall US, Inc. 675 Central Avenue New Providence, NJ 07974
Telephone	:	+18005264473
Telefax	:	+19084644658
Emergency telephone no	:	CHEMTREC - 800-424-9300

SECTION 2. HAZARDOUS COMPONENTS INFORMATION

Component	CAS-No.	Weight percent
Trade Secret Registry	735517-5281P	5.00 - 10.00
Ethanol	64-17-5	10.00 - 20.00

Unidentified ingredients are considered not hazardous under Federal Hazard Communication Standard (29CFR 1910.1200).

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Colour	:	colourless
Odour	:	alcohol-like
Hazard Summary	:	Flammable/Combustible Repeated or prolonged exposure may cause irritation of eyes and skin.

Route(s) of Entry :	Inhalation	Skin	Ingestion
	no	yes	yes

Carcinogenicity:

NTP	No substance in this product is listed by NTP as a carcinogen
IARC	No substance in this product is listed by IARC as a carcinogen
OSHA	No substance in this product is regulated by OSHA as a carcinogen

SECTION 4. FIRST AID MEASURES

Inhalation	:	Remove to fresh air. If symptoms persist, call a physician.
Skin contact	:	Wash off with plenty of water.If skin irritation persists, call a

physician.

Eye contact	:	Keep eye wide open while rinsing.Rinse immediately with plenty of water for at least 15 minutes.If eye irritation persists, consult a specialist.
Ingestion	:	Rinse mouth.Never give anything by mouth to an unconscious person.Obtain medical attention.

SECTION 5. FIREFIGHTING MEASURES

Flash point	:	42.77 °C (108.99 °F) Tag closed cup
Lower explosion limit	:	Note: no data available
Upper explosion limit	:	Note: no data available
Auto-ignition temperature	:	No information available.
TDG Flammability Class	:	3
Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Carbon dioxide blanket Dry chemical Foam
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Use personal protective equipment. Ventilate the area.
Methods for cleaning up	:	Wear personal protective equipment. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Additional advice	:	Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Unscrew closure slowly. Allow all pressure to escape through threads before removing closure

Storage

Requirements for storage areas and containers : Store indoors in a cool, well-ventilated place
Keep away from open flames, hot surfaces and sources of ignition.
Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Keep drum out of sun and away from heat.
Store below 95F.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV (TWA)	OSHA PEL (TWA)
Trade Secret Registry	NONE	NONE
Ethanol	1,884.000000 mg/m3	NONE

Engineering measures : The bath must be treated with Calcium Hydroxide prior to discharge to the local POTW.

Eye protection : Safety glasses with side-shields

Hand protection : Impervious gloves

Skin and body protection : Rubber or plastic apron

Respiratory protection : If the occupational exposure limits cannot be met, suitable respirator equipment shall be worn.

Hygiene measures : Avoid contact with eyes.
Wear suitable gloves and eye/face protection.
Wear suitable protective clothing.
Wash hands before breaks and immediately after handling the product.
Provide adequate ventilation.
Do not inhale fumes.
Keep away from heat and flame.
Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

pH	:	5.5 - 6.5 Note: +/- 0.5
Freezing point	:	-1.11 °C (30.00 °F)
Boiling point/boiling range	:	Note: no data available
Vapour pressure	:	Note: no data available
Bulk density	:	8.2000 lb/gal
Water solubility	:	Note: completely soluble
Relative density	:	0.984
Evaporation rate	:	Note: (Water =1) Less than 1

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Heat, flames and sparks.
Materials to avoid	:	Strong oxidizing agents Bases
Hazardous decomposition products	:	Carbon dioxide (CO2) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity: : Mixture; Not Determined.

Acute oral toxicity

Ethanol : LD50, rat
Dose: 7,060.000000 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Advice on Disposal : Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse, recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

Refer to Bill of Lading.

SECTION 15. REGULATORY INFORMATION

TSCA Status : All components of this material comply with US TSCA requirements.

SARA 313 Components : NONE

CERCLA Reportable Quantity : NONE

California Prop. 65 : N.D

NFPA : 1 2 0

HMIS : 1 2 0 B

SECTION 16. OTHER INFORMATION

Further information

Chemetall US, Inc. warrants that the products described herein will conform with its published specifications. The products supplied by Chemetall and information related to them are intended for use by buyers having necessary industrial skill and knowledge. Buyers should undertake sufficient verification and testing to determine the suitability of the Chemetall materials for their own particular purpose. Since buyer s conditions of use of products are beyond Chemetall s control, Chemetall does not warrant any recommendations and information for the use of such products. CHEMETALL DISCLAIMS ALL OTHER WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE IN CONNECTION WITH THE USE OF ITS PRODUCTS.

SAFETY DATA SHEET
Effective date: 4 January 2013
Replaced edition from: 4 June 2012
Distribution date: 4 January 2013

1907/2006/EC & GHS
Safety Data Sheet

TRADE NAME
PANEX® CARBON FIBER

1. Identification of the substance / preparation and of the company

1.1 Product identifier

Product name	**:**	PANEX® CARBON FIBER
Synonyms	**:**	n/a
Chemical family	**:**	Carbon fiber
Product description	:	Article

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant uses : Industrial applications

1.2.2 Uses advised against : None known

1.3 Details of the supplier of the safety data sheet

Company **:** Zoltek Zrt
H-2537 Nyergesujfalu
Hungary
+36-33-536-021

Zoltek Companies, Inc.
3101 Mckelvey Road
St. Louis, MO 63044
USA
(314) 291-5110

E-mail enquiry : msds@zoltek.com

1.4 Emergency phone company : +36-33-536-021
(314) 291-5110

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2. Hazards Identification

2.1 Classification of the substance or mixture

Product definition : Article

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

: Not classified

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

Hazard symbols : None
R-phrases : None
The product does not require a hazard warning label in accordance with EC-directives

2.2 Label elements

Labeling according to Regulation 67/548/EEC or 1994/45/EC

Hazard symbols : none
R-phrases : none
S-phrases : none
Special labeling : n/a

2.3 Other hazards

Physio-chemical hazards : See chapter 10
In the supplied form the product is not explosive at all; however, the build-up of fine dust can lead to a risk of dust explosions.

Human health dangers : See chapter 11 and below
Eye : Dust may cause temporary irritation.
Skin : Dust may cause mild irritation. In some cases, the dust may cause allergic skin reactions.
Inhalation : Dust may cause mild irritation.

Environmental hazards : See chapter 12

Other hazards : This product and its dusts are electrically conductive

Least: 0; Slight: 1; Moderate: 2; High: 3; Extreme: 4	Health	Fire	Reactivity
Carbon fiber	1	0	0
Sizing	1	1	0

3. Composition / Information on ingredients

3.1 Product-type : Article

Component	CAS. NO	%	LIMITS FOR AIR CONTAMINANTS
Carbon fiber, Polyacrylonitrile (PAN)-based carbon	CAS: 7440-44-0	91.0-99.8	

OSHA and ACGIH have not established air contamination for carbon fibers. Under certain conditions this substance may be a nuisance dust. OSHA has an established standard for particulates not otherwise regulated (nuisance dust) set at 5 mg/m^3 (respirable fraction) and 15 mg/m^3 (total dust). ACGIH has established an exposure value of 3 mg/m^3 (respirable fraction) and 10 mg/m^3 (total).

Sizing	Proprietary	0.2-9.0%

4. FIRST AID MEASURES

Eye contact: Flush eyes with water for 15 minutes.
Skin contact: Wash affected areas thoroughly with soap and water.
Inhalation: Remove from the area of the dust to fresh air. Seek medical attention if you feel unwell.
Ingestion: In the event of deliberate ingestion, do not induce vomiting unless directed to do so by consulting with a doctor.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Normal firefighting media and procedures
Restrictions: Use of extinguishing media is dependent on processing plant conditions.
Unusual fire & explosion hazards: Airborne fibers are electrically conductive.

Flashpoint: not determined
Main combustion gas: CO_2, CO and a minute amount of N_2, HCN and H_2O.
Personal Protection: Self-contained breathing apparatus

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions: N/A
Environmental precautions: N/A
Methods for cleaning up: In case of spill, collect the spilled materials. If the material is not contaminated, put it into a clean container and it can be reused. Otherwise, dispose of it properly. Because the dust is electrically conductive and may become airborne, clean up with a vacuum. If an electrical appliance is used, take the steps necessary to avoid the risk of electrical shock.

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7. HANDLING AND STORAGE

Precautions for safe handling: No special measures necessary if used properly.
Conditions for safe storage: Airborne particles and filaments should be controlled so as to minimize skin irritation and electrical shorts in switch gears, etc. due to conductivity of fiber.
Other precautions: Protect all electrical equipment, in or near areas in which fiber is handled or used, from contact with airborne particles and filaments to avoid possible damage caused by electrical shorts.

---

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection: Personal dust respirators applicable if high degree of fiber fly is experienced.
Ventilation: Yes – local exhaust for airborne fiber removal.
Protective gloves: The use of protective gloves is recommended.
Eye protection: Safety glasses.
Other protective clothing or equipment: Recommend disposable protective garments to eliminate possible skin irritation.
Work / hygienic practices: Gloves (Tyvek) and NIOSH approved nuisance dust masks. Before eating, drinking or smoking, wash hands and face thoroughly with soap and water.

---

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black fiber
Odor: Odorless
pH: N/A
Melting point: N/a
Freezing point: N/A
Boiling point: N/A
Flashpoint: N/A
Flammability: N/A
Lower explosion limit: N/A

Upper explosion limit: N/A
Vapor pressure: N/A
Vapor density: N/A
Specific gravity: 1.82 g/cm^3 (H_2O = 1)
Evaporation rate: N/A (Butyl Acetate = 1)
Solubility in water: Negligible (Dispersible)
Partition coefficient: N/A
Auto ignition temperature: N/A
Decomposition temperature: Begins to oxidize at temperatures >240°C in standard air environment

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10. STABILITY AND REACTIVITY

Stability: Stable
Conditions to avoid: Can react with strong oxidizing agents.
Incompatible materials: See above.
Hazardous decomposition or byproducts: Products of combustion and decomposition depend on other materials present in the fire and the fire conditions. Burning will produce CO_2, CO, and a minute amount of N_2, HCN and H_2O. Avoid inhalation.
Hazard polymerization: Will not occur. Carbon fiber is basically inert.

---

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity: not determined
Acute dermal toxicity: not determined
Acute inhalation toxicity: not determined
Irritant effect on eyes: not determined
Irritant effect on skin: not determined
Sensitization: not determined
Chronic toxicity: not determined
Reproduction toxicity: not determined
Carcinogenicity: not determined
Mutagenicity: not determined
Signs & Symptoms of exposure: possible rash

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12. ECOLOGICAL INFORMATION

Aquatic toxicity: not determined
Biological degradability: not determined
Bioaccumulative potential: not determined
Mobility in soil: not determined
General information: Ecological data is not available.

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13. DISPOSAL CONSIDERATIONS

Landfill sites – industrially approved. Do not incinerate. If necessary, consult local, state, and federal agencies prior to disposal of this material.

Contaminated packaging – packaging that cannot be cleaned should be disposed of as for products. Uncontaminated packaging may be taken for recycling.

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14. TRANSPORATION INFORMATION

US/International shipping information under DOT/ADR/IMDG/IATA regulations: This product is not regulated as dangerous or hazardous goods under DOT, ARD, IMDG, IATA, or UN shipping regulations.

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15. REGULATORY INFORMATION

This product is not classified as a toxic chemical or hazardous material. No special warning label is required.

TSCA (US) NO: Carbon fiber 7440-44-0
EINECS NO: N/A
WHMIS (Canada): N/A
CAS: 7440-44-0
OSHA: N/A
SARA Title III Section 313 Toxic chemicals: None

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16. OTHER INFORMATION

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is believed to be accurate to the best knowledge of Zoltek Companies, Inc. The information presented in this SDS is related only to specific material designated herein. Zoltek Companies, Inc. assumes no legal responsibility for the use or reliance upon these data. The user should review any recommendation in the specific context of the intended use to determine whether appropriate.

Safety Data Sheet

Section 1: PRODUCT AND COMPANY IDENTIFICATION

SDS Identification Name: Polyspeed® Laminates
SDS Number: 439-7278-POLY-0000-00 **Date:** September 1, 2010 **Page:** 1 of 6
Supersedes SDS: New

Manufacturer:
Hexcel®
11711 Dublin Boulevard
Dublin, CA 94568-2832

Emergency Telephone Number:
800-433-5072 (24-Hour) Hexcel®

Information Telephone Number:
925-551-4900 (Normal Business Hours-PT)

Product Identification Number: Polyspeed® Laminates

Chemical Family: Cured Epoxy Resin on Fiberglass

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS® Number	% by Weight	OSHA (PEL)	ACGIH® (TLV®)
Fiberglass fiber synthetic, vitreous continuous filament	65997-17-3	50-75	15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	5 mg/m^3 (Inhalable) 1 f/cc (Respirable)

This product is not classified as a Hazardous Chemical as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
Appearance and Odor:
Laminate with no distinctive odor.

Statements of Hazard:
Warning! Dust generated from machining, grinding or sanding the product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present.

Dust or particulate from machining, grinding or sawing the product may cause irritation to the eyes, skin and respiratory tract.

Handling the product may cause cuts and abrasions.

Primary Routes of Exposure:
Eye--Yes Skin--Yes Inhalation--Yes Ingestion--No

HMIS® Rating:
Health--1 Flammability--0 Reactivity--0 Special—None

Section 3: HAZARDS IDENTIFICATION (Continued)

EMERGENCY OVERVIEW (continued):

Potential Health Effects:

Eye: Dust or particulate from machining, grinding or sawing the product may cause mechanical irritation.

Skin: Dust or particulate from machining, grinding or sawing the product may cause mechanical irritation.

Inhalation: Dust or particulate from machining, grinding or sawing the product may cause irritation to the respiratory tract.

Ingestion: The effects of ingestion are unknown. Mechanical irritation may occur.

Medical Conditions Aggravated by Exposure: Preexisting eye, skin or respiratory disorders may be aggravated by exposure from machining, grinding or sawing the product.

Carcinogenic Information: None of the components present in the product at concentrations equal to or greater than 0.1 % are listed or regulated by IARC, NTP, OSHA or ACGIH® as a carcinogen.

Other:	**OSHA (PEL)**	**ACGIH® (TLV®)**
Exposure limits for product dust as [Particulate Not Otherwise Regulated (PNOR) by OSHA or Classified (PNOC) by ACGIH®]:	15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	10 mg/m^3 (Inhalable) 3 mg/m^3 (Respirable)

Section 4: FIRST AID MEASURES

Eye: In case of contact with the dust or particulate from the product, immediately flush with large amounts of water for at least 15 minutes, keeping the eyelids open. Get medical attention immediately.

Skin: Use normal medical treatment for cuts or abrasions. In case of contact with dust or particulate from the product, immediately wash skin with soap and plenty of water. Get medical attention immediately, if irritation develops.

Inhalation: If dust or particulate are inhaled in a large quantity, remove to fresh air. Get medical attention immediately.

Ingestion: In case of ingestion, mechanical irritation may occur. Get medical attention, if necessary.

Section 5: FIRE FIGHTING MEASURES

Flash Point/Method of Determination: Not determined

Means of Extinction: Use water-spray, dry chemical or CO_2 to extinguish fires.

Special Fire Hazards: Avoid exposure through use of a self-contained, positive-pressure breathing apparatus. Dust generated from machining, grinding or sanding the product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present.

Section 6: ACCIDENTAL RELEASE MEASURES

Procedures in case of Accidental Release or Leakage: No special precautions required.

Section 7: HANDLING AND STORAGE

Precautions to be taken in Handling and Storage: Maintained sealed against contamination from dirt or moisture.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection: Usually not required. Avoid eye and skin contact. Wear safety glasses with side shields when machining, grinding or sawing the product.

Skin Protection: Use gloves, as necessary, to protect from cuts or abrasions while handling the product. Wear protective clothing, as necessary, to protect from the dust or particulate generated when machining, grinding or sawing the product.

Respiratory Protection: Usually not required. If dust or particulate are being generated from machining, grinding or sawing the product, use a NIOSH approved dust respirator.

Ventilation: Use local exhaust sufficient to control the dust or particulate generated during machining, grinding or sawing the product. If an exhaust ventilation is not available or is inadequate, use a NIOSH approved respirator, as appropriate.

General Hygiene Recommendations: Good personal hygiene practices should be followed at all times. Before eating, drinking, smoking or using toilet facilities, wash face and hands thoroughly with soap and water. Use vacuum equipment to remove the product dust or particulate from clothing and work areas. Compressed air is not recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor..... Laminate with no distinctive odor.
Boiling Point (^{o}F/^{o}C)..... N/A
Melting Point (^{o}F/^{o}C)..... N/A
Density (lbs./ft^{3})(Water=62.3)..... N/A
pH of Undiluted Product..... N/A
Vapor Pressure (mm Hg.)..... N/A
Vapor Density (Air=1).....N/A
Viscosity..... N/A
Volatile [Percent (%) by Weight]..... N/A
Percent (%) VOC..... N/A
Solubility in Water.....Not Soluble

Section 10: STABILITY AND REACTIVITY

Stability: Stable

Incompatible Materials: None

Products evolved from Heat of Combustion or Decomposition: The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Component information says that burning should produce carbon and nitrogen oxides, sulphur and other unidentified gases and vapors that may be toxic. Avoid inhalation.

Hazardous Polymerization: None

Section 11: TOXICOLOGICAL INFORMATION

Component Toxicity Data:
Median Lethal Dose (Species):
Oral (LD_{50})...Not determined
Inhalation (LC_{50})...Not determined
Dermal (LD_{50})...Not determined

Irritation Index, Estimation of Irritation (Species):
Skin...Not determined
Eyes...Not determined
Inhalation...Not determined

Section 12: ECOLOGICAL INFORMATION

Total Product Data:
Not regarded as dangerous for the environment.

Section 13: DISPOSAL CONSIDERATIONS

Waste Disposal Methods: It is the responsibility of the generator to comply with all federal, state, provincial and local laws and regulations. We recommend that you contact an appropriate waste disposal contractor and environmental agency for relevant laws and regulations. Under the U.S., Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

Section 14: TRANSPORT INFORMATION

DOT:
Proper Shipping Name.....Not regulated
Hazard Class..... Not regulated
Identification Number.....Not regulated
Packing Group.....Not regulated
Label Required..... None

Section 15: REGULATORY INFORMATION

SARA Title III:
Section 302/304 Extremely Hazardous Substance:
None

Section 311 Hazardous Categorization:
None

Section 313 Toxic Chemicals:
None

CERCLA Section 102(a) Hazardous Substance:
None

RCRA Information: Currently, the product is not listed in federal hazardous waste regulations 40 CFR, Part 261.33, paragraphs (e) or (f), i.e. chemical products that are considered hazardous if they become wastes. State or local hazardous waste regulations may also apply if they are different from the federal regulation. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

WHMIS (Canada):
Classification:
None

This product has been classified in accordance with hazard criteria of the "Controlled Products Regulations" and this SDS contains all the information required by the "Controlled Products Regulations."

Ingredient disclosure list:
Fibrous glass (CAS® # 65997-17-3)

U.S., EPA and TSCA Information: This product is an article as defined by TSCA and is not required to be listed in the TSCA Inventory.

Ozone Depletion Information: This product does not contain or is not manufactured with ozone depleting substances as identified in Title VI, Clean Air Act "Stratospheric Ozone Protection" and the regulations set forth in 40 CFR, Part 82.

Section 16: OTHER INFORMATION

Special Precautions for Carbon: Airborne carbon fibers, dust or particulate may create electrical short-circuits that could result in damage to or malfunctioning of electrical equipment.

Explanation and Disclaimer: Wherever such words or phrases as "hazardous," "toxic," "carcinogen," etc. appear herein, they are used as defined or described under state employee right-to-know laws, Federal OSHA laws or the direct sources for these laws such as the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful. **Any exposure can only be understood within the entire context of its occurrence, which includes such factors as the substance's characteristics as defined in the SDS, amount and duration of exposures, other chemicals present and preexisting individual differences in response to the exposure.**

The data provided in this SDS is based on the information received from our raw material suppliers and other sources believed to be reliable. We are supplying you this data solely in compliance with the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200 and other Federal and state laws as described in Section 15: Regulatory Information.

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Prepared by: Darryl Ong,
Hexcel Corporate Safety and Health,
Senior Product Information Specialist

Revision History:
09/01/10 new SDS

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PYROSTOP 6

Common chemical name : Sulphur hexafluoride

CAS nr : 2551-62-4

EC Number : 219-854-2

REACH registration numbe : 01-2119458769-17

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified uses : Gas dielectric agent / Electric insulation for high and medium voltage

1.3. Details of the supplier of the safety data sheet : INVENTEC PERFORMANCE CHEMICALS SA
20 rue de Bourgogne
BP 211
69802 SAINT-PRIEST Cedex France
Tel : +33 (0) 4 72 28 13 00
Fax : +33 (0) 4 72 28 13 41

e-mail : ContactFDS@inventec.dehon.com

1.4 Emergency telephone number : EMERGENCY TELEPHONE NUMBER (24h/24) : + 33 (0) 1 72 11 00 03
Anti-poison Center : INRS/ORFILA (France) : +33 (0) 1 45 42 59 59
Anti-poison Centre (Spain) : +34 91 562 04 20
Anti-poison Centre (Belgium) : +32 70 245 245
Anti-poison Centre (Netherlands) : +31 30 274 8888
Anti-poison Centre (United Kingdom) : +44 870 600 6266
Poisons Information Centre (Hungary) : +36 80 201 199

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Regulation (EC) No 1272/2008 (CLP)

Physical hazards : Gases under pressure - Liquefied gas (Press. Gas) - H280

2.1.2 Directive EEC/67/548 or 1999/45/ CE : Not classified as dangerous product.

2.2. Label elements

Hazard pictograms

Signal words : Warning

Hazard statements : H280 : Contains gas under pressure; may explode if heated

Precautionary statements :

• Storage : P410 + P403 : Protect from sunlight Store in a well-ventilated place

- Further data : Greenhouse fluorinated gas falling within Kyoto Protocol

2.3. Other hazards

Adverse human health effects : In high concentrations may cause asphyxiation.
Contact with liquid may cause cold burns/frostbite.

SECTION 3 Composition/information on ingredients

3.1./3.2. Substance / Preparation : Substance.

Components contributing to the hazard :

Substance name		Contents	CAS No	EC No	Index No	Ref REACH	Classification
Sulphur hexafluoride	:	> 95 %	2551-62-4	219-854-2	-----	01-2119458769-17	Not classified. (DSD/DPD) --- Liquefied gas;H280

SECTION 4 First aid measures

4.1. Description of first aid measures

Inhalation : Move the affected person away from the contaminated area and into the fresh air
Make the person rest

Skin contact : In the event of contact with the liquid: treat resulting frostbite as a burn
Immediately remove contaminated clothing or footwear
Immediately rinse with plenty of water
If skin burns appear, call a doctor immediately

Eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum)
Consult an eye specialist immediately, even if there are no immediate symptoms.

Ingestion : Not specifically applicable (gas)

Protection of first-aiders : Do not enter without an appropriate protective equipment
- self-contained breathing apparatus

4.2. Most important symptoms and effects, both acute and delayed

Acute symptoms : At high concentrations:
Anoxia (asphyxia).
Narcosis
Loss of consciousness

4.3. Indication of any immediate medical attention and special treatment needed : No information available

SECTION 5 Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media : All extinguishing agents can be used

Unsuitable extinguishing media : None to our knowledge. If there is a fire close by, use suitable extinguishing agents

5.2. Special hazards arising from the substance or mixture

Specific hazards : Not classified as flammable according to EC criteria, but may present a risk in the event of a fire
On heating or during combustion :
Toxic gases are released

5.3. Advice for firefighters

Specific fire fighting methods : Close the valve if possible
Cool down the containers exposed to heat with a water spray
Do not attempt to fight the fire without suitable protective equipment

Protection of fire-fighters : Self-contained breathing apparatus
Impermeable protective equipment

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SECTION 5 Fire-fighting measures (continued)

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes
Remove all sources of ignition
Do not smoke
Do not breathe vapours
Evacuate the danger area.
Stop the leak.
Heavy vapours. Shut off low-level openings in the vicinity (ventilation shafts, drains...).

6.2. Environmental precautions : -

6.3. Methods and material for containment and cleaning up : Mechanically ventilate the spillage area.

- Recovery : Let the product evaporate

6.4 Reference to other sections : For further information refer to section 8 "Exposure controls/personal protection"

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Technical measures : Ventilation

Industrial hygiene : Do not drink, eat or smoke in the workplace

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

- Recommended : Store :
- the container tightly closed
- in a cool, well-ventilated area
- away from direct sunlight
- away from any source of heat

Incompatible products : Strong oxidizing agents
Alkaline earth metals

Packaging materials

- Recommended : Ordinary steel

7.3. Specific end use(s) : -

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

Engineering measures : Ensure good ventilation of the work station

8.1.1. Occupational Exposure Limits : Sulphur hexafluoride : USA (OSHA) : PEL - TWA (8h; mg/m³) : 6000
Sulphur hexafluoride : USA (OSHA) : PEL - TWA (8h; ppm) : 1000
Sulphur hexafluoride : United Kingdom : WEL - TWA (8h; mg/m³) : 6070
Sulphur hexafluoride : United Kingdom : WEL - TWA (8h; ppm) : 1000
Sulphur hexafluoride : United Kingdom : WEL - STEL (15min; mg/m³) : 7590
Sulphur hexafluoride : United Kingdom : WEL - STEL (15min; ppm) : 1250
Sulphur hexafluoride : France : LEP - VME (8h; mg/m³) : 6000
Sulphur hexafluoride : France : LEP - VME (8h; ppm) : 1000
Sulphur hexafluoride : Germany : MAK - TWA (8h; mg/m³) : 6100
Sulphur hexafluoride : Germany : MAK - TWA (8h; ppm) : 1000
Sulphur hexafluoride : Germany : MAK - STEL (15min; mg/m³) : 48800
Sulphur hexafluoride : Germany : MAK - STEL (15min; ppm) : 8000

SECTION 8 Exposure controls/personal protection (continued)

Sulphur hexafluoride : Belgium : GWBB - TWA (8h; mg/m³) : 6057
Sulphur hexafluoride : Belgium : GWBB - TWA (8h; ppm) : 1000

8.2. Exposure controls

Personal protection :

* **- Respiratory protection** : In the event of insufficient ventilation: Mask with AX canister
In a confined area : Self-contained breathing apparatus (ARI)

- Hand protection : Protective gloves made of rubber or PVC
Neoprene protective gloves

- Eye protection : Sealed safety goggles with side shields

- Skin protection : Majority cotton clothing

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

9.1.a. Appearance

Physical state	: Compressed liquefied gas
Colour	: Colourless
9.1.b. Odour	: Odourless
9.1.c. Odour threshold	: No data
9.1.d. pH	: Not applicable
9.1.e. Melting point / Freezing point	: -50.8 °C
9.1.f. Initial boiling point - boiling range	: -63.8°C
9.1.g. Flash point	: Not applicable
9.1.h. Evaporation rate	: No data
9.1.i. Flammability	: Non flammable.
9.1.j. Explosion limits (lower - upper)	: None
9.1.k. Vapour pressure	: 37.1 bar at 45°C
9.1.l. Vapour density	: 5.1
9.1.m. Relative density	: 1.56 at 0 °C
9.1.n. Solubility	
-in water	: 0.04 g/l at 20 °C Practically insoluble
- in organic solvents	: - alcohols - ethers. Soluble in :
9.1.o. Partition coefficient : n-octanol / water	: 1.68 (log Pow)
9.1.p. Auto-ignition temperature	: No data
9.1.q. Thermal decomposition	: 200 °C (humid air) 800 °C (dry air)
9.1.r. Viscosity	: Not applicable
9.1.s. Explosive Properties	: Not explosive material according to EC criteria
9.1.t. Oxidising properties	: Non oxidizing material according to EC criteria

9.2. Other information

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SECTION 9 Physical and chemical properties (continued)

Critical temperature : : 45.6°C
Critical pressure : : 3719 kPa

SECTION 10 Stability and reactivity

10.1. Reactivity : -
10.2. Chemical stability : Stable up to 500 °C
10.3. Possibility of hazardous reactions : -
10.4. Conditions to avoid : Heat or source of heat
10.5. Incompatible materials : - reactive metals (Al, K, Zn ...)
- strong oxidizing agents
10.6. Hazardous decomposition products : : On thermal decomposition (pyrolysis), releases :
Hydrogen fluoride
Sulfur monofluoride, difluoride, tetrafluoride and decafluoride
Sulphur dioxide

SECTION 11 Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Asphyxiating
Skin corrosion/irritation : No specific data
Serious eye damage/irritation : No specific data
Respiratory or skin sensitization : No data available
Germ cell mutagenicity : No mutagenic effect
Carcinogenicity : No carcinogenic effect
Reproductive toxicity : No teratogenic effect
STOT-single exposure : No specific data
STOT-repeated exposure : No specific data
Aspiration hazard : Not applicable
Other information : Contact with liquefied gas may cause severe ocular lesions
Contact with liquid causes frostbite.

SECTION 12 Ecological information

12.1. Toxicity
Effects on the aquatic environment : No information available
12.2. Persistence and degradability
Persistence : The product persists in air in inert form
Degradability :
- Hydrolysis: : Water / Earth: Half-life : > 1000 y
- Photolysis: : Half-life : > 1000 y
12.3. Bioaccumulative potential : Not bioaccumulable.
Octanol/water partition coefficient : 1.68 (log Pow)

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SECTION 12 Ecological information (continued)

Bioconcentration factor. : BCF : 89

12.4. Mobility in soil : -

Volatility : Air : Henry's constant : 452 kPa.m3/mol
Extremely volatile
In aqueous medium :
Rapid evaporation : Half-life = 3.5 h

Adsorption/desorption: : Product adsorbs little onto the soil

12.5. Results of PBT and vPvB assessment : This substance is considered not to be PBT and vPvB

12.6. Other adverse effects

Global warming potential: : GWP (CO2=1) = 22200

SECTION 13 Disposal considerations

13.1. Waste treatment methods

CONTAMINATED PACKAGING :

Destruction/Disposal : Dispose of at an licensed site

NOTE : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal

SECTION 14 Transport information

14.1. UN number : UN 1080

14.2. UN proper shipping name : SULPHUR HEXAFLUORIDE

14.3. Transport hazard class(es)

Rail/road (RID/ADR) : Class : 2

Sea transport : Class : 2.2

Air transport (OACI/IATA) : Class : 2.2

Hazard Label(s) : 2.2

14.4. Packing group : Not applicable

14.5. Environmental hazards : Not classified as dangerous to the aquatic environment
Marine pollutant : NO

14.6. Special precautions for user

Rail/road (RID/ADR) : Classification code : 2A
Hazard identification number : 20
Tunnel restriction code : (C/E)

Sea transport : EmS Nr : F-C, S-V
Segregation group : -

Air transport (OACI/IATA) : Cargo aircraft:
Packing instruction: 200
Quantity: 150kg
Passenger aircraft:
Packing instruction: 200
Quantity: 75kg

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SECTION 14 Transport information (continued)

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable

NOTE : The above regulatory prescriptions are those valid on the date of publication of this sheet However, given the possible evolution of transport regulations for hazardous materials, in case the present sheet is dating back to more than 12 months ago, it would be advisable to check their validity with your commercial agency

SECTION 15 Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture : Ensure all national/local regulations are observed.

France : Professional diseases(table(s) nr 32) : applicable
Specific medical surveillance : Decree of the 11th july1977 : applicable

REGULATION EC No 842/2006 : Greenhouse fluorinated gas falling within Kyoto Protocol

15.2. Chemical safety assessment : No information available

SECTION 16 Other information

Further information : Product for industrial use only
For more information regarding the use of this product, please refer to our technical information or contact the sales department in your region
This safety data sheet has been written in conformity with the regulation (UE) 453/2010.

Text of H-Phrases in § 3 : H280 - Contains gas under pressure; may explode if heated

*** Update** : Modifications are indicated by an asterisk (*)

This sheet complements the technical sheets but does not replace them. The information given is based on our knowledge of the product, at the time of publication. It is given in good faith.
Besides, the attention of the user is drawn to the possible risks incurred by using the product for any other use than that for which it was intended.
In no way does this exempt the user from knowing and applying all the regulations controlling his activity. He alone will take on the responsibility for taking the precautions involved by the use of the product.
The aim of all the mandatory regulations mentionned is just to help the user to fulfil his obligations regarding the use of hazardous products.

This information must not be considered exhaustive. It does not exempt the user from ensuring that other obligations than those mentioned could apply, related to the storage and use of the product, this being his sole responsibility.

End of document

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Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Rando HDZ 22, 32, 46, 68, 100

Product Use: Hydraulic Oil
Product Number(s): 254609, 254610, 254611, 273260, 273261, 273262, 273263, 273264, 278065
Synonyms: Rando HDZ 22, 32, 46, 68 ISOCLEAN Certified
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: 315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: No data available
Density: 0.86 kg/l @ 15°C (59°F)
Coefficient of Therm. Expansion / °F: Not Applicable
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 150 °C (302 °F) Minimum
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.
The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	NO
2.	Delayed (Chronic) Health Effects:	NO
3.	Fire Hazard:	NO
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1, 16.
Revision Date: AUGUST 14, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
Benzin, Rense

Product no.
-

REACH registration number
-

Other means of identification

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Applicated for extraction of fats and as a solvent in adhesives and paint products.
The full text of any mentioned and identified application categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address
Borup Kemi I/S
Bækgårdsvej 53
4140 Borup
Tlf: 5756 0020
Fax: 5756 0021
www.borup-kemi.dk

Contact person
-

E-mail
kontakt@borup-kemi.dk

SDS date
18-05-2011

SDS Version
1.0

1.4. Emergency telephone number

Use your national or local emergency number
See section 4 “First aid measures”

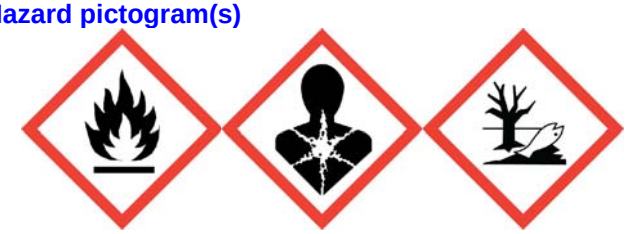
SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Aquatic Chronic 2, Asp. Tox. 1, Flam. Liq. 2

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger!

Hazard statement(s)

Highly flammable liquid and vapour. (H225)
May be fatal if swallowed and enters airways. (H304)
Toxic to aquatic life with long lasting effects. (H411)

Identity of the substances primarily responsible for the major health hazards

Naphtha (petroleum), hydrodesulfurized light, dearomatized. Index-no.: 649-383-00-1

Safety statement(s)	General	Keep out of reach of children. (P102) If medical advice is needed, have product container or label at hand. (P101)
	Prevention	Avoid release to the environment. (P273)
	Response	In case of fire: Use alcohol-resistant foam or powder for extinction. (P370+P378) IF SWALLOWED: Do NOT induce vomiting. Get immediate medical advice/attention. (P301+P331+P315)
	Storage	-
	Disposal	-

2.3. Other hazards

This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

-

Additional warnings

Tactile warning.

VOC

-

DPD/DSD Classification

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.(R51/53).
Harmful: may cause lung damage if swallowed.(R65). Extremely flammable.(R12).

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances

NAME:	Naphtha (petroleum), hydrodesulfurized light, dearomatized
IDENTIFICATION NOS.:	CAS-no: 92045-53-9 EC-no: 295-434-2 Index-no: 649-383-00-1
CONTENT:	95-100%
DSD CLASSIFICATION:	F;R11 Xn;R65 N;R51/53
CLP CLASSIFICATION:	Flam. Liq. 2, Asp. Tox. 1, Aquatic Chronic 2 H225, H304, H411
NOTE:	S

(*) See full text of H/R-phrases in chapter 16. Occupational limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. The doctor can contact the Work Environment Medical Clinic at Bispebjerg Hospital, tlf. 35 31 60 60 Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the person into fresh air and stay with them.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

Do not induce vomiting! If vomiting occurs, keep head facing down so that vomit does not get into the lungs. Call a doctor or ambulance. Symptoms of chemical pneumonia can appear after several hours. People who have swallowed the product should therefore be kept under medical attention for at least 48 hours.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

This product contains substances that can give chemical pneumonia if inhaled. The symptoms of chemical pneumonia can appear after several hours.
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned:
Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture
No special

5.3. Advice for firefighters
Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid inhalation of vapours from waste material. Avoid direct contact with spilled substances. Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions
Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities.

6.3. Methods and material for containment and cleaning up
Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided. Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations.

6.4. Reference to other sections
See section on “Disposal” with regard to the handling of waste. See section on 'Exposure controls/personal protection' for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Smoking, consumption of food or liquid, and storage of tobacco, food or liquids are not allowed in the workrooms. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. See section on 'Exposure controls/personal protection' for information on personal protection. Avoid direct contact with the product.

7.2. Conditions for safe storage, including any incompatibilities
Always store in containers of the same material as the original. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Storage temperature
Frost free

7.3. Specific end use(s)
This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

No data available

DNEL / PNEC

No data available.

8.2. Exposure controls

No control is necessary if the product is used in a normal way.

General recommendations

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

There are no maximum exposure limits for the substances contained in this product.

Appropriate technical measures

Take ordinary precautions when using the product. Avoid inhalation of gas or dust.

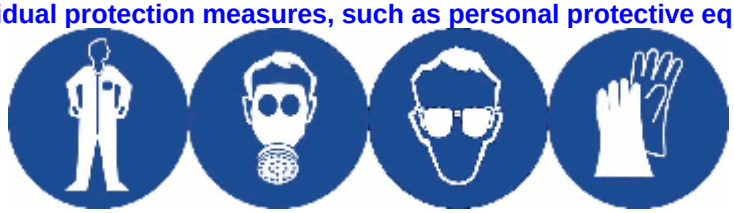
Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Keep damming materials near the workplace. If possible collect spillage during work.

Individual protection measures, such as personal protective equipment



Generally

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

If the ventilation at the work place is not sufficient, use a half or whole mask with an appropriate filter or an air-supplied respiratory protector. The choice depends on the concrete work situation and how long you will be using the product.

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit.

Hand protection

Recommended: Nitrile rubber. . Breakthrough time: See the manufacturer's instructions

Eye protection

Use face shield. Use safety glasses with a side shield as an alternative.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Liquid	Colourless	Gasoline-like	-	-	0,72

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
-60	97	-

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
-4	-	200

Explosion limits (Vol %)	Oxidizing properties
-	-

Solubility

Solubility in water	n-octanol/water coefficient
Insoluble	-

9.2. Other information

Solubility in fat	Additional information
-	N/A

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
The product is stable under the conditions, noted in the section on “Handling and storage”.

10.3. Possibility of hazardous reactions
No special

10.4. Conditions to avoid
Avoid static electricity. Do not expose to heat (e.g. sunlight), because it can lead to excess pressure.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidising agents, and strong catabolic agents.

10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result

No data available.

Long term effects

This product contains substances that can give chemical pneumonia if inhaled. The symptoms of chemical pneumonia can appear after several hours.
Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc.
Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Test duration	Result

No data available.

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result

No data available.

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BFC

No data available.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

This product contains ecotoxic substances which can have damaging effects on water-organisms. This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code

20 01 13

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Notes
	1268	PETROLEUM DISTILLATES, N.O.S. (Naphtha (petroleum), hydrodesulfurized light, dearomatized)	3	II	-

IMDG	UN-no.	Proper Shipping Name	Class	PG*	EmS	MP**	Hazardous constituent
	1268	PETROLEUM DISTILLATES, N.O.S. (Naphtha (petroleum), hydrodesulfurized light, dearomatized)	3	II	F-E, S-E	-	-

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. For exceptions, see the Danish Working Environment Authority's Executive Order No. 239 of 6 April 2005.

Demands for specific education

-

15.2. Chemical safety assessment

No

SECTION 16: Other information

Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)

Full text of H/R-phrases as mentioned in section 3

R11 - Highly flammable.
R65 - Harmful: may cause lung damage if swallowed.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H225 - Highly flammable liquid and vapour.
H304 - May be fatal if swallowed and enters airways.
H411 - Toxic to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

-

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

TS

Date of last essential change
(First cipher in SDS version)

-

Date of last minor change
(Last cipher in SDS version)

-

ROCOL RTD METALCUTTING LIQUID

Chemwatch Material Safety Data Sheet
Issue Date: 26-Jul-2013
X9317SP

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
ROCOL RTD METALCUTTING LIQUID

SYNONYMS
"metal cutting lubricant"

PRODUCT USE
Metal cutting lubricant.

SUPPLIER

Company: ITW POLYMERS AND FLUIDS	Company: ITW Polymers & Fluids
Address:	Address:
100 Hassall Street	100 Hassall Street
Wetherill Park	Wetherill Park
NSW 2164	NSW, 2164
Australia	Australia
Telephone: +61 2 9757 8800	Telephone: +61 2 9757 8800
Emergency Tel: 1800 039 008	Emergency Tel: 1800 039 008
Emergency Tel: +61 3 9573 3112	Emergency Tel: +61 3 9573 3112
Fax: +61 2 9757 3855	Fax: +61 2 9757 3855

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

RISK
•None under normal operating conditions.

SAFETY
•None under normal operating conditions.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
chlorinated waxes		>60
sulfurised oil		10-30

NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

Section 4 - FIRST AID MEASURES

SWALLOWED
• If swallowed do NOT induce vomiting.
• If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

continued...

• Observe the patient carefully.
• Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

EYE
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
■ If skin contact occurs:
• Immediately remove all contaminated clothing, including footwear.
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

INHALED
• If fumes or combustion products are inhaled remove from contaminated area.
• Lay patient down. Keep warm and rested.
• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
• Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN
Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• Foam.
• Dry chemical powder.
• BCF (where regulations permit).
• Carbon dioxide.

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves.
• Prevent, by any means available, spillage from entering drains or water course.
• Use water delivered as a fine spray to control fire and cool adjacent area.

FIRE/EXPLOSION HAZARD
• Combustible.
• Slight fire hazard when exposed to heat or flame.
• Heating may cause expansion or decomposition leading to violent rupture of containers.
• On combustion, may emit toxic fumes of carbon monoxide (CO).
Other combustion products include: carbon dioxide (CO_2), sulfur oxides (SOx), chlorine, hydrogen chloride and hydrogen sulfide (H_2S).

FIRE INCOMPATIBILITY
■ Avoid contamination with strong oxidising agents as ignition may result.

HAZCHEM
None

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
Slippery when spilt.
• Remove all ignition sources.
• Clean up all spills immediately.
• Avoid breathing vapours and contact with skin and eyes.
• Control personal contact with the substance, by using protective equipment.

continued...

MAJOR SPILLS
Remove all ignition sources.
Slippery when spilt.
Minor hazard.
• Clear area of personnel.
• Alert Fire Brigade and tell them location and nature of hazard.
• Control personal contact with the substance, by using protective equipment as required.
• Prevent spillage from entering drains or water ways.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• Avoid smoking, naked lights or ignition sources.
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.

SUITABLE CONTAINER
• Metal can or drum
• Packaging as recommended by manufacturer.
• Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY
Avoid storage with oxidisers.

STORAGE REQUIREMENTS
• Store in original containers.
• Keep containers securely sealed.
• No smoking, naked lights or ignition sources.
• Store in a cool, dry, well-ventilated area.
• DO NOT allow product to freeze.
DO NOT store above 50 deg. C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

MATERIAL DATA
ROCOL RTD METALCUTTING LIQUID:
None assigned.

PERSONAL PROTECTION

EYE
• Safety glasses with side shields; or as required,
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET
■ Wear chemical protective gloves, e.g. PVC.
Wear safety footwear.

continued...

OTHER
• Overalls.
• Eyewash unit.

ENGINEERING CONTROLS
■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Dark brown liquid; does not mix with water.

PHYSICAL PROPERTIES
Liquid.
Does not mix with water.
Sinks in water.

State	Liquid	Molecular Weight	Not applicable.
Melting Range (°C)	Not applicable.	Viscosity	Not available
Boiling Range (°C)	Not available.	Solubility in water (g/L)	Immiscible
Flash Point (°C)	>150	pH (1% solution)	Not applicable
Decomposition Temp (°C)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°C)	Not available.	Vapour Pressure (kPa)	Not available
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.16
Lower Explosive Limit (%)	Not applicable	Relative Vapour Density (air=1)	Not available
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY
• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ The liquid is discomforting to the gastro-intestinal tract.
Ingestion may result in nausea, abdominal irritation, pain and vomiting.
Considered an unlikely route of entry in commercial/industrial environments.

EYE
■ The liquid is discomforting to the eyes and capable of causing a mild, temporary redness of the conjunctiva (similar to wind-burn), temporary impairment of vision and/ or other transient eye damage/ ulceration.

SKIN
■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives .

continued...

INHALED
■ Not normally a hazard due to non-volatile nature of product.
The vapour from heated material is discomforting and may be harmful.

CHRONIC HEALTH EFFECTS
■ Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

TOXICITY AND IRRITATION
No data for this material.

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Rocol RTD Metalcutting Liquid	No Data Available	No Data Available	No Data Available	No Data Available

Section 13 - DISPOSAL CONSIDERATIONS

• Recycle wherever possible or consult manufacturer for recycling options.
• Consult State Land Waste Authority for disposal.
• Bury or incinerate residue at an approved site.
• Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE
None

REGULATIONS

No data for Rocol RTD Metalcutting Liquid (CW: 12253)

Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

continued...

Issue Date: 26-Jul-2013
Print Date: 12-Sep-2013

This is the end of the MSDS.

SAFETY DATA SHEET

RTD COMPOUND

Compilation date: 22/05/2014

Revision date: 13/11/2015

Revision No: 12

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: RTD COMPOUND

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of substance / mixture: Lubricant for reaming, tapping and drilling.

1.3. Details of the supplier of the safety data sheet

Company name: ROCOL

ROCOL House

Swillington

Leeds

West Yorkshire

LS26 8BS

ENGLAND

Tel: +44 (0) 113 232 2700

Fax: +44 (0) 113 232 2740

Email: customer-service rocol.com

1.4. Emergency telephone number

Emergency tel: +44 (0) 113 232 2600

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Lact.: H362; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; -: EUH066; -: EUH208

Most important adverse effects: Repeated exposure may cause skin dryness or cracking. Contains pine oil. May produce an allergic reaction. May cause harm to breast-fed children. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Label elements:

Hazard statements: EUH066: Repeated exposure may cause skin dryness or cracking.

EUH208: Contains pine oil. May produce an allergic reaction.

H362: May cause harm to breast-fed children.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

Hazard pictograms: GHS09: Environmental

[cont...]

Signal words: Warning

Precautionary statements: P260: Do not breathe dust/fumes/gas/mist/vapours/spray.
P263: Avoid contact during pregnancy.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P308+313: IF exposed or concerned: Get medical advice/attention.
P391: Collect spillage.
P501: Dispose of contents/container to local/national regulations.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

C14-C17 CHLORINATED PARAFFIN - REACH registered number(s): 01-2119519269-33-

EINECS	CAS	PBT / WEL	CLP Classification	Percent
287-477-0	85535-85-9	-	Lact.: H362; Aquatic Chronic 1: H410; Aquatic Acute 1: H400; -: EUH066	50-70%

PINE OIL

304-455-9	94266-48-5	-	Flam. Liq. 3: H226; Aquatic Chronic 2: H411; Eye Irrit. 2: H319; Skin Irrit. 2: H315; Skin Sens. 1: H317	1%

Contains: Mineral oil contains 3% (w/w) DMSO extractable according to IP346

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes.

Ingestion: Wash out mouth with water.

Inhalation: Remove casualty from exposure ensuring one s own safety whilst doing so.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be irritation of the throat.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: No data available.

[cont...]

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Not applicable.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. Mark out the contaminated area with signs and prevent access to unauthorised personnel.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

Suitable packaging: Must only be kept in original packaging.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

[cont...]

Hazardous ingredients:

PINE OIL

Workplace exposure limits: **Respirable dust**

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	100 ppm, 566 mg/m3	150 ppm, 850 mg/m3	-	-

DNEL/PNEC Values

DNEL / PNEC No data available.

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.
Respiratory protection: Respiratory protective device with particle filter.
Hand protection: Protective gloves.
Eye protection: Safety glasses. Ensure eye bath is to hand.
Skin protection: Protective clothing.
Environmental: No special requirement.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Paste
Colour: Brown
Odour: Characteristic odour
Evaporation rate: Negligible
Oxidising: Non-oxidising (by EC criteria)
Solubility in water: Insoluble
Viscosity: No data available.
Boiling point/range°C: No data available.
Melting point/range°C: No data available.
Flammability limits %: lower: No data available.
upper: No data available.
Flash point°C: >100
Part.coeff. n-octanol/water: No data available.
Autoflammability°C: >200
Vapour pressure: No data available.
Relative density: 1.17
pH: No data available.
VOC g/l: No data available.

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

[cont...]

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

C14-C17 CHLORINATED PARAFFIN

ORAL	RAT	LD50	> 2000	mg/kg

PINE OIL

DERMAL	RBT	LD50	> 5000	mg/kg
ORAL	RAT	LD50	> 3200	mg/kg

Toxicity values: No data available.

Symptoms / routes of exposure

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be irritation of the throat.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: No data available.

Other information: May cause harm to breastfed babies.

Section 12: Ecological information

12.1. Toxicity

[cont...]

Ecotoxicity values:

Species	Test	Value	Units
Daphnia magna	48H EC50	0.006	mg/l
FISH	96H LC50	>5000	mg/l
ALGAE	96H ErC50	>3.2	mg/l

Hazardous ingredients:

C14-C17 CHLORINATED PARAFFIN

ALGAE	96H ErC50	>3.2	mg/l
Daphnia magna	48H EC50	0.006	mg/l
FISH	96H LC50	>5000	mg/l

PINE OIL

ALGAE	96H ErC50	> 1.81	mg/l
FISH	96H LC50	0.221	mg/l

12.2. Persistence and degradability

Persistence and degradability: Not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: Bioaccumulation potential.

12.4. Mobility in soil

Mobility: Non-volatile. Absorbed only slowly into soil.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Toxic to aquatic organisms. Toxic to soil organisms.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

Recovery operations: No data available

Waste code number: 12 01 99

Disposal of packaging: Dispose of in a regulated landfill site or other method for hazardous or toxic wastes.

NB: The user s attention is drawn to the possible existence of regional or national regulations regarding disposal.

[cont...]

Section 14: Transport information

14.1. UN number

UN number: UN3077

14.2. UN proper shipping name

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
(C14-C17 CHLORINATED PARAFFIN)

14.3. Transport hazard class(es)

Transport class: 9

14.4. Packing group

Packing group: III

14.5. Environmental hazards

Environmentally hazardous: Yes **Marine pollutant:** Yes

14.6. Special precautions for user

Special precautions: No special precautions.
Tunnel code: E
Transport category: 3

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk: No data available.

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

Phrases used in s.2 and s.3: EUH066: Repeated exposure may cause skin dryness or cracking.
EUH208: Contains name of sensitising substance>. May produce an allergic reaction.
H226: Flammable liquid and vapour.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.

[cont...]

H362: May cause harm to breast-fed children.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

H411: Toxic to aquatic life with long lasting effects.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

SECTION 1. IDENTIFICATION

Product name : Shell Tellus S4 V 32

Product code : 001D7769

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
P.O. Box 4427
Houston T 77210-4427
USA

SDS Request : (+1) 877-276-7285

Customer Service :

Emergency telephone number

Spill Information : 877-504-9351

Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Hydraulic oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms :

Signal word : Warning

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
H332 Harmful if inhaled.
H315 Causes skin irritation.
ENVIRONMENTAL HAZARDS:
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P312 Call a POISON CENTER/doctor if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
Storage:
No precautionary phrases.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
Contains Gas oils (petroleum), hydrodesulphurised.

Other hazards which do not result in classification
Used oil may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains 3% (w/w) DMSO-extract, according to IP346.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Gas oils (petroleum), hydrodesulfurized	Gas oils (petroleum), hydrodesulfurized	64742-79-6	70 - 80

SECTION 4. FIRST-AID MEASURES

If inhaled : Remove to fresh air. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

In case of eye contact	:	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
If swallowed	:	If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.
Most important symptoms and effects, both acute and delayed	:	If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.
Protection of first-aiders	:	When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Immediate medical attention, special treatment	:	Treat symptomatically. Call a doctor or poison control center for guidance. High pressure injection injuries require prompt surgical intervention an d possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.
Specific hazards during fire-fighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion

occurs.
Unidentified organic and inorganic compounds.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter s clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.

Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately.
Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.
Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.

Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.
Must be stored in a diked (bunded) area.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m3	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m3	OSHA TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut f r Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany

http://www.dguv.de/inhalt/index.jsp
L Institut National de Recherche et de Securit , (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid at room temperature.
Colour	:	colourless
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
pour point	:	-60 °C / -76 °FMethod: ISO 3016
Initial boiling point and boiling range	:	> 280 °C / 536 °Festimated value(s)

Flash point	:	>= 100 °C / 212 °F Method: ISO 2592
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper explosion limit	:	Typical 10 %(V)
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	:	> 1estimated value(s)
Relative density	:	0.866 (15 °C / 59 °F)
Density	:	866 kg/m3 (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	Pow: > 6(based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	33.8 mm2/s (40.0 °C / 104.0 °F) Method: ASTM D445
		9.93 mm2/s (100 °C / 212 °F) Method: ASTM D445
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable.
Possibility of hazardous reac-	:	Reacts with strong oxidising agents.

tions

Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure
Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	:	LC 50 (Rat): > 1 - 5 mg/l Exposure time: 4 h Remarks: Harmful if inhaled.
Acute dermal toxicity	:	LD 50 (Rabbit): > 2,000 - 5,000 mg/kg Remarks: May be harmful in contact with skin.

Skin corrosion/irritation

Product:
Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:
Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:
Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:
Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:
Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:
Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:
Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:
Not considered an aspiration hazard.

Further information

Product:
Remarks: Used oils may contain harmful impurities that have accumulated during use. The con-

centration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment	:	Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: Expected to be toxic: LL/EL/IL50 > 1 = 10 mg/l
Toxicity to daphnia and other aquatic invertebrates (Acute toxicity)	:	Remarks: Expected to be toxic: LL/EL/IL50 > 1 = 10 mg/l
Toxicity to algae (Acute toxicity)	:	Remarks: Expected to be toxic: LL/EL/IL50 > 1 = 10 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: Data not available
Toxicity to bacteria (Acute toxicity)	:	Remarks: Data not available

Persistence and degradability

Product:

Biodegradability	:	Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains constituents with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.
Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Gas oils, (petroleum), hydrodesulphurised)
Class	:	9
Packing group	:	III
Labels	:	9MI

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Gas oils, (petroleum), hydrodesulphurised)
Class	:	9
Packing group	:	III
Labels	:	9
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category	:	Not applicable
Ship type	:	Not applicable
Product name	:	Not applicable
Special precautions	:	Not applicable

Special precautions for user

Remarks	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information **:** MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Toxic
Irritant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Cumene	98-82-8	5000	

: Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA., The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Immediate (Acute) Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

ylene, mixed isomers	1330-20-7	0.0001 %
Naphthalene	91-20-3	0.0001 %

Pennsylvania Right To Know

Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4

California Prop 65 WARNING This product contains a chemical known to the State of California to cause cancer.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 1, 1, 0

Due to the conversion of this product to GHS classification and labelling, there has been a significant change to the nature of the information presented in chapter 2.
A vertical bar ( ) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial

Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTE = Benzene, Toluene, Ethylbenzene, ylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN DES = Skin Designation
STEL = Short term exposure limit

TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 05/12/2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Material Safety Data Sheet

1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : **Shell Tivela Oil S 320**
Product Code : 001A9648
Uses : Gear lubricant.

Manufacturer/Supplier : **Shell Oil Products US**
P.O. Box 4427
Houston T 77210-4427
USA
SDS Request : (+1) 877-276-7285

Emergency Telephone Number
Spill Information : 877-242-7400
Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

Blend of polyalkylene glycol and additives.

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance and Odour : Clear colourless. Liquid at room temperature. Slight hydrocarbon.

Health Hazards : Not classified as dangerous for supply or conveyance.
Safety Hazards : Not classified as flammable but will burn.
Environmental Hazards : Not classified as dangerous for the environment.

Health Hazards : Not expected to be a health hazard when used under normal conditions.

Health Hazards
Inhalation : Under normal conditions of use, this is not expected to be a primary route of exposure.
Skin Contact : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Contact : May cause slight irritation to eyes.
Ingestion : Low toxicity if swallowed.
Other Information : Used oil may contain harmful impurities.
Signs and Symptoms : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.
Aggravated Medical Conditions : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.

Environmental Hazards	:	Not classified as dangerous for the environment.
Additional Information	:	Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

4. FIRST-AID MEASURES

General Information	:	Not expected to be a health hazard when used under normal conditions.
Inhalation	:	No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
Skin Contact	:	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
Eye Contact	:	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
Ingestion	:	In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Advice to Physician	:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Flash point	:	Typical 286 °C / 547 °F (COC)
Upper / lower Flammability or Explosion limits	:	Typical 1 - 10 %(V)
Auto ignition temperature	:	> 320 °C / 608 °F
Specific Hazards	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
Suitable Extinguishing Media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media	:	Do not use water in a jet.
Protective Equipment for Firefighters	:	Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Protective measures	:	Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or

other appropriate barriers.

Clean Up Methods	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
Additional Advice	:	Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

General Precautions	:	Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Handling	:	Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Storage	:	Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
Recommended Materials	:	For containers or container linings, use mild steel or high density polyethylene.
Unsuitable Materials	:	PVC.
Additional Information	:	Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Biological Exposure Index (BEI)
No biological limit allocated.

Exposure Controls	:	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g.

		personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
Personal Protective Equipment	:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Respiratory Protection	:	No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
Hand Protection	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.
Eye Protection	:	Wear safety glasses or full face shield if splashes are likely to occur.
Protective Clothing	:	Skin protection not ordinarily required beyond standard issue work clothes.

Monitoring Methods	:	Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/ Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/ Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/ Institut f r Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany. http://www.dguv.de/inhalt/index.jsp L Institut National de Recherche et de Securit , (INRS), France http://www.inrs.fr/accueil
Environmental Exposure Controls	:	Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear colourless. Liquid at room temperature.
Odour	:	Slight hydrocarbon.
pH	:	Not applicable.
Initial Boiling Point and Boiling Range	:	> 280 °C / 536 °F estimated value(s)
Pour point	:	Typical -39 °C / -38 °F
Flash point	:	Typical 286 °C / 547 °F (COC)
Upper / lower Flammability or Explosion limits	:	Typical 1 - 10 %(V)
Auto-ignition temperature	:	> 320 °C / 608 °F
Vapour pressure	:	0.5 Pa at 20 °C / 68 °F (estimated value(s))
Density	:	Typical 1,069 kg/m3 at 15 °C / 59 °F
Water solubility	:	Negligible.
n-octanol/water partition coefficient (log Pow)	:	> 6 (based on information on similar products)
Kinematic viscosity	:	Typical 320 mm2/s at 40 °C / 104 °F

Vapour density (air=1)	:	> 1 (estimated value(s))
Electrical conductivity	:	This material is not expected to be a static accumulator.
Evaporation rate (nBuAc=1)	:	Data not available

10. STABILITY AND REACTIVITY

Stability	:	Stable.
Conditions to Avoid	:	Extremes of temperature and direct sunlight.
Materials to Avoid	:	Strong oxidising agents.
Hazardous Decomposition Products	:	Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	:	Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
Acute Oral Toxicity	:	Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	:	Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	:	Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	:	Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	:	Expected to be slightly irritating.
Respiratory Irritation	:	Inhalation of vapours or mists may cause irritation.
Sensitisation	:	Not expected to be a skin sensitiser.
Repeated Dose Toxicity	:	Not expected to be a hazard.
Mutagenicity	:	Not considered a mutagenic hazard.
Carcinogenicity	:	Not expected to be carcinogenic.

Solvent naphtha (petroleum), light aromatic	:	GHS / CLP: No carcinogenicity classification
Amine phosphate	:	GHS / CLP: No carcinogenicity classification
Phenothiazine	:	GHS / CLP: No carcinogenicity classification

Reproductive and Developmental Toxicity	:	Not expected to be a hazard.
Additional Information	:	Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Acute Toxicity	:	Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract.
Mobility	:	Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Floats on water.
Persistence/degradability	:	Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
Bioaccumulation	:	Contains components with the potential to bioaccumulate.
Other Adverse Effects	:	Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

Material Disposal	:	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
Container Disposal	:	Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Local Legislation	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)
This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG
This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

DSL	All components listed.
EINECS	All components listed or polymer exempt.
TSCA	All components listed.

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

NFPA Rating (Health, Fire, Reactivity)	:	0, 1, 0
SDS Version Number	:	2.3
SDS Effective Date	:	02/05/2014
SDS Revisions	:	A vertical bar ( ) in the left margin indicates an amendment from the previous version.
SDS Regulation	:	The content and format of this MSDS is in accordance with the

Material Safety Data Sheet

SDS Distribution	:	OSHA Hazard Communication Standard, 29 CFR 1910.1200. The information in this document should be made available to all who may handle the product.
Disclaimer	:	The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

SECTION 1. IDENTIFICATION

Product name : Shell Spirax S5 ATE 75W-90

Product code : 001D8288

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285

Customer Service :

Emergency telephone number

Spill Information : 877-504-9351

Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Transmission oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Synthetic base oil and additives.
Highly refined mineral oil.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.
The highly refined mineral oil is only present as additive diluent.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Dialkylpolysulphide		68937-96-2	1 - 5
Amine phosphate		91745-46-9	1 - 2.4
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.

Protection of first-aiders	:	When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Immediate medical attention, special treatment	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.
Specific hazards during fire-fighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid contact with skin and eyes.
Environmental precautions	:	Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

Additional advice	:	For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Precautions for safe handling	:	Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Avoidance of contact	:	Strong oxidising agents.
Product Transfer	:	This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data	:	Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature.
Packaging material	:	Suitable material: For containers or container linings, use mild steel or high density polyethylene. Unsuitable material: PVC.
Container Advice	:	Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m3	US. ACGIH Threshold Limit Values

		(Mist)	5 mg/m3	OSHA_TRANS

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal

conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material.
Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before

discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid at room temperature.
Colour	:	amber
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
pour point	:	-45 °C / -49 °FMethod: ISO 3016
Initial boiling point and boiling range	:	> 280 °C / 536 °Festimated value(s)
Flash point	:	205 °C / 401 °F Method: ISO 2592
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper explosion limit	:	Typical 10 %(V)
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	:	> 1estimated value(s)
Relative density	:	0.879 (15 °C / 59 °F)
Density	:	879 kg/m3 (15.0 °C / 59.0 °F) Method: ISO 12185
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	Pow: > 6(based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F

Viscosity

Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	81 mm2/s (40.0 °C / 104.0 °F) Method: ISO 3104 14.9 mm2/s (100 °C / 212 °F) Method: ISO 3104
Explosive properties	:	Not classified
Oxidizing properties	:	Data not available
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure
Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Components:

Amine phosphate:
Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Components:

Dialkylpolysulphide:
Remarks: Experimental data has shown that the concentration of potentially sensitising components present in this product does not induce skin sensitisation. May cause an allergic skin reaction in sensitive individuals.

Amine phosphate:
Remarks: Experimental data has shown that the concentration of potentially sensitising components present in this product does not induce skin sensitisation. May cause an allergic skin reaction in sensitive individuals.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

: Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representa-

tive of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to daphnia and other aquatic invertebrates (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to algae (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: Data not available
Toxicity to bacteria (Acute toxicity)	:	Remarks: Data not available

Persistence and degradability

Product:

Biodegradability	:	Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility	:	Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.
Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage,

for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = Occupational Exposure - High Production Volume

PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Revision Date : 12/31/2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

1. Product and company identification

Product name	SikaForce®-7010 (US) Part B
Supplier	Sika Corporation 201 Polito Avenue Lyndhurst, NJ 07071
Telephone	(201) 933-8800
Telefax	(201) 804-1076
Emergency telephone	CHEMTREC: 800-424-9300
e-mail address of person responsible for this SDS	INTERNATIONAL: 703-527-3887 ehs@sika-corp.com
Manufacturer	Sika Corporation, Operations 201 Polito Avenue Lyndhurst, NJ 07071 www.sikausa.com
Telephone	(201) 933 - 8800
Chemical family	Isocyanates

2. Hazards identification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Potential Health Effects

Inhalation	Causes respiratory tract irritation. Harmful if inhaled. May cause allergic respiratory reaction.
Skin	May cause allergic skin reaction. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Component	CAS Number
Diphenylmethanediisocyanate, isomeres and homologues	9016-87-9
4,4'-methylenediphenyl diisocyanate	101-68-8
methylenediphenyl diisocyanate	26447-40-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

First aid procedures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin contact	In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately if irritation develops and persists.
Eye contact	If easy to do, remove contact lens, if worn. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion	If swallowed, contact a poison control center or physician immediately. Do NOT induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person. Get medical attention immediately.

Notes to physician

Treatment	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Fire fighting

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	none
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training.

Protective equipment and precautions for firefighters

Special protective equipment for firefighters	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. No action shall be taken involving any personal risk without suitable training. Keep people away from and upwind of spill/leak. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Material can create slippery conditions.
Environmental precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for containment and cleaning up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal.

7. Handling and storage

Handling	For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Store in accordance with local regulations.
Other information	Storage temperature: 64 °F - 86 °F (18 °C - 30 °C)

8. Exposure controls/personal protection

Exposure limit(s)

Component	CAS Number	Content %	Basis *	Value	Exposure limit(s) / Form of exposure
4,4'-methylenediphenyl diisocyanate	101-68-8	30 - 50	ACGIH	TWA	0.005 ppm
		30 - 50	OSHA P1	C	0.02 ppm 0.2 mg/m3
		30 - 50	OSHA P0	C	0.02 ppm 0.2 mg/m3

* **Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Eye protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hygiene measures	Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance

Physical state	liquid
Color	brown
Odor	musty

Safety data

Flash point	390.00 °F (198.89 °C)
pH	Note: not applicable

Boiling point	406 °F (208 °C)
Density	1.24 g/cm3 at 77 °F (25 °C)
Water solubility	Note: insoluble
Volatile organic compounds (VOC) content	0 g/l

10. Stability and reactivity

Stability	Stable under normal conditions.
Conditions to avoid	not applicable
Materials to avoid	not applicable
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Acute inhalation toxicity	Component: 4,4'-methylenediphenyl diisocyanate (MDI) Acute toxicity estimate Dose: 1.5 mg/l Remarks: see user defined free text
Chronic Exposure	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity

not applicable

IARC	not applicable
OSHA	not applicable
NTP	not applicable
ACGIH	not applicable

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Waste disposal methods	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

Other information	DOT Regulated Components: 4,4-Diphenylmethane Diisocyanate (MDI) Reportable Quantity: 11,111 pounds. When an individual containers of less than the product RQ, this material ships as Not Regulated.

15. Regulatory information

Federal Regulations

TSCA Status	On TSCA Inventory
SARA 311/312 Hazards	Acute Health Hazard

EPCRA - Emergency Planning Community Right - To - Know

SARA 302 Ingredients	not applicable		
SARA 313 Ingredients	Diphenylmethanediisocyanate, isomeres and homologues	9016-87-9	50 %

Clean Air Act

Ozone-Depletion Potential	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

4,4'-methylenediphenyl diisocyanate	101-68-8	45 %

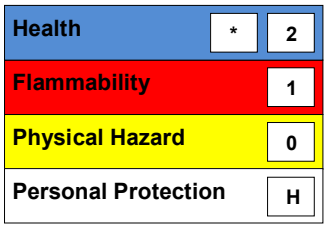
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

State Regulations

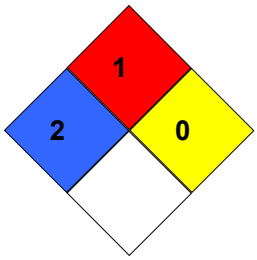
California Prop. 65 Ingredients	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.
Other information	US EPA CERCLA Hazardous Substances (40 CFR 302) 4,4-Diphenylmethane Diisocyanate (MDI) Reportable Quantity: 5,000 pounds.

16. Other information

HMIS Classification



NFPA Classification



Caution: HMIS® ratings and NFPA ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® and NFPA ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® and NFPA ratings are to be used with a fully implemented HMIS® and NFPA program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). NFPA or the National Fire Protection Association is a private non-profit organization and an authoritative source of technical background, data, and consumer advice on fire protection, problems and prevention. Please note HMIS® attempts to convey full health warning information to all employees while NFPA is meant primarily for fire fighters and other emergency responders.

Notes to Reader

The information contained in this Material Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Technical Data Sheet, product label and Material Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this MSDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Material Safety Data Sheet

SikaForce®-7020 Part B

1 . Product and company identification

Product name : SikaForce®-7020 Part B

Supplier : Sika Corporation, Industry
30800 Stephenson Highway
Madison Heights, MI 48071
www.sikaindustry.com

Telephone no. : (888) 832 - 7452

Fax no. : (248) 577 - 0810

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Deutschland GmbH
Kornwestheimer Str. 107
D-70439 Stuttgart
Deutschland

Telephone no. : 0711-8009-0

Validation date : **11. February 2011.**

Print date : 11. February 2011.

Product type : Liquid.

2 . Composition/information on ingredients

Name	CAS number	%
Polymeric MDI	9016-87-9	60 - 100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : Irritating to respiratory system. May cause sensitization by inhalation.

Ingestion : Harmful if swallowed.

Skin : Irritating to skin. May cause sensitization by skin contact.

Eyes : Irritating to eyes.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

Inhalation : Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. Maintain an open airway. In the event of any complaints or symptoms, avoid further exposure.

4 . First aid measures

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention. Never give anything by mouth to an unconscious person.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : No specific data.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: >200°C (>392°F)

Color : Brown.

Odor : Characteristic.

Density : ~1.23 g/cm^3 [20°C (68°F)]

Viscosity : Dynamic: 90 mPa·s (90 cP)

Dispersibility properties : Not dispersible in the following materials: cold water.

Solubility : Insoluble in the following materials: cold water.

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Potential chronic health effects

Chronic effects : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Acute toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Isocyanic acid, polymethylenepolyphenylene ester	-	3	-	-	-	-

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
TSCA 8(d) H and S data reporting: Isocyanic acid, polymethylenepolyphenylene ester: 1990

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

SARA 313

Form R - Reporting requirements :

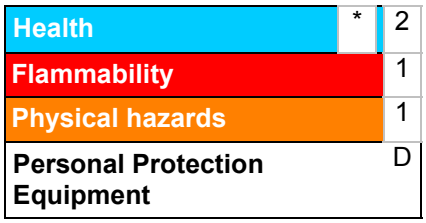
Product name	CAS number	Concentration
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	60 - 100

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

United States inventory (TSCA 8b) : All components are listed or exempted.

16 . Other information

Hazardous Material Information System (U.S.A.) :



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **11.02.2011.**

Date of issue : **11.02.2011.**

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Version : **1.04**

Indicates information that has changed from previously issued version.

Notice to reader

The information contained in this Material Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Technical Data Sheet, product label and Material Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this MSDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY

16 . Other information

OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : SikaForce®-7311 L45 GR Part A

1.2 Relevant identified uses of the substance or mixture and uses advised against

At present there is no complete information available on identified uses. When the data becomes available, it will be integrated into the safety data sheet.

Product use : Sealant/adhesive.

1.3 Details of the supplier of the safety data sheet

Company : Sika Deutschland GmbH
Kornwestheimer Str. 103-107
70439 Stuttgart
Telephone : +4971180090
E-mail address : EHS@de.sika.com

1.4 Emergency telephone number

Emergency telephone number : 0173-6774799 Out of office hours only
EHS@de.sika.com

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Type of product : Mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

Classification (67/548/EEC, 1999/45/EC)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Remarks : No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : No hazards which require special first aid measures.

If inhaled : Move to fresh air.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Keep eye wide open while rinsing.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : See Section 11 for more detailed information on health effects and symptoms.

Risks : No known significant effects or hazards.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products : No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.2 Environmental precautions

Environmental precautions : No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8. No special handling advice required. Follow standard hygiene measures when handling chemical products

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Store in accordance with local regulations.

Advice on common storage : No special restrictions on storage with other products.

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Eye protection	:	Safety glasses
Hand protection	:	Chemical-resistant, impervious gloves complying with an approved standard must be worn at all times when handling chemical products. Reference number EN 374. Follow manufacturer specifications. Butyl rubber/nitrile rubber gloves (0,4 mm), Recommended: Butyl rubber/nitrile rubber gloves.
Skin and body protection	:	Protective clothing (e.g. Safety shoes acc. to EN ISO 20345, long-sleeved working clothing, long trousers). Rubber aprons and protective boots are additionaly recommended for mixing and stirring work.
Respiratory protection	:	No special measures required.

Environmental exposure controls

General advice	:	No special environmental precautions required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	viscous liquid
Colour	:	various
Odour	:	characteristic
Odour Threshold	:	No data available
Flash point	:	> 101 °C
Ignition temperature	:	not applicable
Lower explosion limit (Vol%)	:	No data available
Upper explosion limit (Vol%)	:	No data available
Flammability (solid, gas)	:	No data available

Oxidizing properties	:	No data available
Auto-ignition temperature	:	No data available
pH	:	No data available
Melting point/range / Freezing point	:	No data available
Boiling point/boiling range	:	No data available
Vapour pressure	:	No data available
Density	:	ca.1,26 g/cm3 at 20 °C
Water solubility	:	Note: insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	> 20,5 mm2/s at 40 °C
Relative vapour density	:	No data available
Evaporation rate	:	No data available

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid	:	No data available

10.5 Incompatible materials

Materials to avoid	:	No data available

10.6 Hazardous decomposition products

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

Product

No data available

Serious eye damage/eye irritation

Product

No data available

Respiratory or skin sensitisation

Product

No data available

Germ cell mutagenicity

Product

Mutagenicity : No data available

Carcinogenicity

Product

Carcinogenicity : No data available

Reproductive Toxicity/Fertility

Reproductive toxicity : No data available

No data available

Reproductive Toxicity/Development/Teratogenicity

Teratogenicity : No data available

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	In accordance with the EWC Waste Regulation the classification of waste is to be assigned to the jurisdiction of the origin of waste. Therefore, it is not possible to assign a particular waste identification number. Completely emptied packagings may be given for recycling. Empty packaging may still contain hazardous residues. Empty packaging should be removed by a licensed waste contractor. Sika has agreed disposal contracts for all packaging which is brought into circulation in Germany. For further details see www.sika.de

SECTION 14: Transport information

ADR

Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

14.6 Special precautions for user
No data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Labelling according to EC Directives (1999/45/EC)

Further information	:	The product does not need to be labelled in accordance with EC directives or respective national laws.

Prohibition/Restriction

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	None of the components are listed (=> 0.1 %).
REACH - List of substances subject to authorisation (Annex XIV)	:	not applicable
REACH Information:		All substances contained in our Products are - preregistered or registered by our upstream suppliers, and/or - preregistered or registered by us, and/or - excluded from the regulation, and/or - exempted from the registration.
Water contaminating class (Germany)	:	WGK 1 slightly water endangering Gemäß VwVws vom 30.Juli 2005
VOC-CH (VOCV)	:	0,18 % no VOC duties
VOC-EU (solvent)	:	0,18 %

15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any any use and processing.

Changes as compared to previous version !

Material Safety Data Sheet

SikaForce®-7321 L30 Part A

1 . Product and company identification

Product name : SikaForce®-7321 L30 Part A

Supplier : Sika Corporation, Industry
30800 Stephenson Highway
Madison Heights, MI 48071
www.sikaindustry.com

Telephone no. : (888) 832 - 7452

Fax no. : (248) 577 - 0810

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Deutschland GmbH
Kornwestheimer Str. 107
D-70439 Stuttgart
Deutschland

Telephone no. : 0711-8009-0

Validation date : **23. March 2011.**

Print date : 23. March 2011.

Product type : Liquid.

2 . Composition/information on ingredients

Name	CAS number	%
aluminium hydroxide	21645-51-2	40 - 70
Castor oil	8001-79-4	10 - 30
1,1',1",1'"-ethylenedinitrilotetrapropan-2-ol	102-60-3	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.Irritating to respiratory system.

Ingestion : May be harmful if swallowed.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse.

4 . First aid measures

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9 . Physical and chemical properties

Flash point : Closed cup: >200°C (>392°F)

Color : Various

Odor : Characteristic.

Density : ~1.63 g/cm^3 [20°C (68°F)]

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **TSCA 4(a) final test rules**: 4-methylpentan-2-one
TSCA 8(a) IUR: Castor oil; Glycols, polypropylene, 1,2,3-propanetriyl ether
United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Castor oil; aluminium hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Castor oil: Immediate (acute) health hazard; aluminium hydroxide: Immediate (acute) health hazard

SARA 313

Form R - Reporting requirements :

Product name	CAS number	Concentration
4-methylpentan-2-one	108-10-1	<1

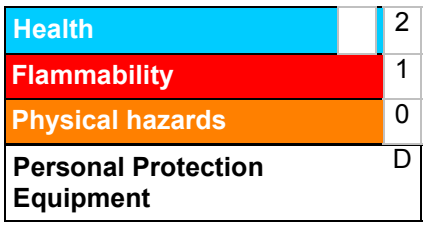
SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : **Pennsylvania RTK Hazardous Substances:** The following components are listed: ALUMINUM SOLUBLE SALTS

United States inventory (TSCA 8b) : All components are listed or exempted.

16 . Other information

Hazardous Material Information System (U.S.A.) :



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **23.03.2011.**

Date of issue : **23.03.2011.**

Date of previous issue : **No previous validation.**

Version : **1**

Indicates information that has changed from previously issued version.

Notice to reader

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SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS

16 . Other information

INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance/preparation

Product name or Trade name :

SikaForce® -7720 L105 (formerly 1897)

Use of the substance/preparation : Chemical product for construction and industry

Company/undertaking identification

Manufacturer/Distributor	:	Sika Limited Watchmead Welwyn Garden City Hertfordshire. AL7 1BQ United Kingdom
Telephone no.	:	01707 394444
Fax no.	:	01707 329129
e-mail address of person responsible for this SDS	:	EHS@uk.sika.com
Emergency telephone number	:	+44 (0)1707 363899 (available during office hours).

2. HAZARDS IDENTIFICATION

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

See section 11 for more detailed information on health effects and symptoms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical family/ Characteristics : Modified polyol

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. FIRST AID MEASURES

First-aid measures

Inhalation	:	Get medical attention if symptoms occur.
Ingestion	:	Do not induce vomiting unless directed to do so by medical personnel. Maintain an open airway. Seek immediate medical attention.
Skin contact	:	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Eye contact	:	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Notes to physician	:	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See section 11 for more detailed information on health effects and symptoms.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : In a fire or if heated, a pressure increase will occur and the container may burst.
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13).

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container.

7. HANDLING AND STORAGE

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Packaging materials

Recommended : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient name	Occupational exposure limits
No exposure limit value known.	

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Exposure controls

Occupational exposure controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Respiratory protection : No special measures required.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Butyl rubber/nitrile rubber gloves.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Use barrier skin cream.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance

Form : Liquid.

Colour : White.

Odour : Sweetish.

Important health, safety and environmental information

Flash point : Closed cup: >101°C (>213.8°F)

Density : ~1.6 g/cm^3 [23°C (73.4°F)]

Solubility : Insoluble in the following materials: water

10. STABILITY AND REACTIVITY

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Potential acute health effects

Inhalation : May cause irritation.

Ingestion : Can cause gastrointestinal disturbances.

Skin contact : May cause skin irritation.

Eye contact : May cause eye irritation.

No known significant effects or critical hazards.

Chronic effects : No known significant effects or critical hazards.

12. ECOLOGICAL INFORMATION

Environmental effects : Avoid contact of spilt material and runoff with soil and surface waterways. Do not empty into drains; dispose of this material and its container in a safe way.

13. DISPOSAL CONSIDERATIONS

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

European waste catalogue (EWC) : 08 04 10 waste adhesives and sealants other than those mentioned in 08 04 09

Packaging : Completely emptied packaging or practically empty packaging containing dried/cured residues, once relieved of all pressure can be disposed of as non-hazardous waste.

Packaging may still contain hazardous residues and disposal should undertaken by a licensed waste contractor.

Any disposal practice must be in compliance with local and national laws and regulations.

14. TRANSPORT INFORMATION

International transport regulations

ADR

Not regulated.

IMDG

Not regulated.

Marine pollutant : No

IATA

Not regulated.

15. REGULATORY INFORMATION

EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Classification : This product is not classified according to EU legislation.

VOC content (EU) : VOC (w/w): 0.22%

National regulations

15. REGULATORY INFORMATION

Regulatory information : Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP 3)
Control of Substances Hazardous to Health Regulations 2002 (COSHH) (as amended)
Health & Safety at Work Act 1974
The Environmental Protection (Duty of Care) Regulations 1991
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007

Guidance Publications : Approved Code of Practice - Management of Health and Safety at Work, HSE
General Approved Code of Practice to COSHH Regulations, HSE.

16. OTHER INFORMATION

History

Date of printing : **12.04.2010.**

Date of issue : **12.04.2010.**

Date of previous issue : **No previous validation.**

Indicates information that has changed from previously issued version.

Notice to reader

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.

Material Safety Data Sheet

SikaForce-7812 L7 MR

1 . Product and company identification

Product name : SikaForce-7812 L7 MR

Supplier : Sika Corporation, Industry
30800 Stephenson Highway
Madison Heights, MI 48071
www.sikaindustry.com

Telephone no. : (888) 832 - 7452

Fax no. : (248) 577 - 0810

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Deutschland GmbH
Kornwestheimer Str. 107
D-70439 Stuttgart
Deutschland

Telephone no. : 0711-8009-0

Validation date : **11. February 2011.**

Print date : 11. February 2011.

Product type : Liquid.

2 . Composition/information on ingredients

Name	CAS number	%
Castor oil	8001-79-4	10 - 30
Zeolites	1318-02-1	10 - 30
Quadrol	102-60-3	1 - 5
M-DEA	13680-35-8	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : May cause irritation.

Ingestion : May be harmful if swallowed.

Skin : May cause skin irritation.

Eyes : Irritating to eyes.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

4 . First aid measures

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9 . Physical and chemical properties

Flash point : Closed cup: >101°C (>213.8°F)

Color : Beige.

Odor : Sweetish.

Density : ~1.3 g/cm^3 [20°C (68°F)]

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Acute toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Zeolites	-	3	-	-	-	-

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-

14 . Transport information

IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: Siloxanes and Silicones, di-Me, reaction products with silica
United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Castor oil; Limestone
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Castor oil: Immediate (acute) health hazard; Limestone: Immediate (acute) health hazard

State regulations :

Massachusetts Substances:	The following components are listed: CALCIUM CARBONATE
New Jersey Hazardous Substances:	The following components are listed: ZEOLITE
Pennsylvania RTK Hazardous Substances:	The following components are listed: LIMESTONE

United States inventory (TSCA 8b) : All components are listed or exempted.

16 . Other information

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		1
Physical hazards		0
Personal Protection Equipment		D

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **11.02.2011.**

Date of issue : **11.02.2011.**

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Version : **1.03**

Indicates information that has changed from previously issued version.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

Material Safety Data Sheet

Sikaforce-7815

1 . Product and company identification

Product name : Sikaforce-7815

Supplier : Sika Corporation, Industry
30800 Stephenson Highway
Madison Heights, MI 48071
www.sikaindustry.com

Telephone no. : (888) 832 - 7452

Fax no. : (248) 577 - 0810

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Danmark A/S
Præstemosevej 2-4
DK-3480 Fredensborg
Danmark

Telephone no. : (0045) 48 18 85 85

Validation date : **7. May 2010.**

Print date : 7. May 2010.

Product type : Liquid.

2 . Composition/information on ingredients

Name	CAS number	%
Castor oil	8001-79-4	10 - 30
4,4'-methylenebis[2,6-diethylaniline]	13680-35-8	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : May be harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : May be harmful if swallowed

Skin : Moderately irritating to the skin. May cause sensitization by skin contact.

Eyes : Irritating to eyes.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

4 . First aid measures

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: >101°C (>213.8°F)

Color : Beige.

Odor : Sweetish.

Density : ~1.2 g/cm^3 [23°C (73.4°F)]

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Castor oil; Limestone
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Castor oil: Immediate (acute) health hazard; Limestone: Immediate (acute) health hazard

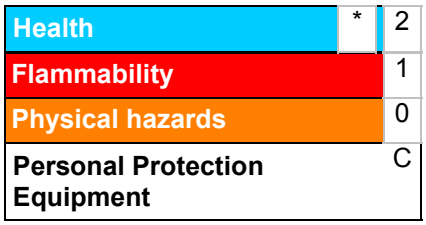
State regulations :

Massachusetts Substances:	The following components are listed: CALCIUM CARBONATE
New Jersey Hazardous Substances:	The following components are listed: ZEOLITE
Pennsylvania RTK Hazardous Substances:	The following components are listed: LIMESTONE

United States inventory (TSCA 8b) : All components are listed or exempted.

16 . Other information

Hazardous Material Information System (U.S.A.) :



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **07.05.2010.**

Date of issue : **07.05.2010.**

Date of previous issue : **No previous validation.**

Version : **1.01**

Indicates information that has changed from previously issued version.

Notice to reader

The information contained in this Material Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Technical Data Sheet, product label and Material Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this MSDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

16 . Other information

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - Germany

Sikasil-Gasket

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : Sikasil-Gasket

1.2 Relevant identified uses of the substance or mixture and uses advised against

At present there is no complete information available on identified uses. When the data becomes available, it will be integrated into the safety data sheet.

Product use : Sealant/adhesive.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Distributor	:	Sika Deutschland GmbH Kornwestheimer Str. 107 D-70439 Stuttgart Deutschland
Telephone no.:	:	0711-8009-0
Fax no.	:	0711-8009-321
e-mail address of person responsible for this SDS	:	EHS@de.sika.com
Emergency telephone number	:	+49-(0)173-6774799 (Only out of office hour)

1.4 Emergency telephone number

Supplier

Telephone number : +49-(0)173-6774799 (Only out of office hour)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Directive 1999/45/EC [DPD]

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Not classified.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard symbol or symbols	:	
Indication of danger	:	
Risk phrases	:	This product is not classified according to EU legislation.
Safety phrases	:	Not applicable.
Hazardous ingredients	:	
Supplemental label elements	:	Safety data sheet available for professional user on request.

SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : Not available.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Chemical family/ Characteristics : Silicon polymer

Product/ingredient name Identifiers	%	Classification 67/548/EEC	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
triacetoxyethylsilane EC: 241-677-4 CAS: 17689-77-9	>= 1 - < 3	R14 Xn; R22 C; R34	Acute Tox. 4, H302 Skin Corr. 1B, H314	[1]
methylsilanetriyl-triacetate EC: 224-221-9 CAS: 4253-34-3	>= 1 - < 3	R14 Xn; R22 C; R34	Skin Corr. 1B, H314	[1]
		See Section 16 for the full text of the R-phrases declared above.	**See Section 16 for the full text of the H statements declared above.**	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Do not induce vomiting unless directed to do so by medical personnel. Maintain an open airway. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

SECTION 4: First aid measures

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also Section 8 for additional information on hygiene measures.

SECTION 6: Accidental release measures

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13).

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs

No DELs available.

PNECs

No PECs available.

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Reference number EN 374. Recommended: Butyl rubber/nitrile rubber gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Use barrier skin cream.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : No special measures required.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Paste.

Colour : Red.

Odour : Acetic acid.

Odour threshold : Not available.

pH :

Melting point/freezing point : Not available.

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	:	Not available.
Flash point	:	Closed cup: >101°C
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Not available.
Burning time	:	Not applicable.
Burning rate	:	Not applicable.
Upper/lower flammability or explosive limits	:	Not applicable.
Vapour pressure	:	Not applicable.
Vapour density	:	Not available.
Density	:	~1.04 g/cm³ [20°C (68°F)]
Relative density	:	Not available.
Solubility(ies)	:	Insoluble in the following materials: water
Partition coefficient: n-octanol/ water	:	Not available.
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	Not available.
Viscosity	:	Not available.
Explosive properties	:	Not available.
Oxidising properties	:	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : No specific data.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methylsilanetriyl-triacetate	LD50 Oral	Rat	2060 mg/kg	-

Conclusion/Summary : Not available.

SECTION 11: Toxicological information

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitisation

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : May cause eye irritation.

Inhalation : May cause irritation.

Skin contact : May cause skin irritation.

Ingestion : Can cause gastrointestinal disturbances.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Methods of disposal : In accordance with the EWC Waste Regulation the classification of waste is to be assigned to the jurisdiction of the origin of waste. Therefor it is not possible to assign a particular waste identification number.

Completely emptied packagings may be given for recycling. Empty packaging may still contain hazardous residues. Empty packaging should be removed by a licensed waste contractor.

Sika has agreed disposal contracts for all packaging which is brought into circulation in Germany.

For further details see www.sika.de

SECTION 14: Transport information

	ADR/RID - ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name			
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

SECTION 14: Transport information

Additional information	-	-	-

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

VOC content (EU) : VOC (w/w): 0%

Other EU regulations

REACH Information: : All substances contained in our Products are
- preregistered or registered by our upstream suppliers, and/or
- preregistered or registered by us, and/or
- excluded from the regulation, and/or
- exempted from the registration.

Europe inventory : Not available.

National regulations

National regulations

National regulations

Hazard class for water : 1 according Appendix No. 4 (Gemäß VwVws vom 17. Mai 1999)

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Full text of abbreviated H statements

SECTION 16: Other information

: H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Full text of classifications [CLP/GHS] : Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Skin Corr. 1B, H314 SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2

Full text of abbreviated R phrases : R14- Reacts violently with water.
R22- Harmful if swallowed.
R34- Causes burns.

Full text of classifications [DSD/DPD] : C - Corrosive
Xn - Harmful

History

Date of printing : **20.08.2014.**

Date of issue : ***.**

Date of previous issue : **No previous validation.**

Notice to reader

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.

SP 4910 Resin RAL7035

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue:21/05/2015 Revision date:01/10/2015 Supersedes:21/05/2015 Version: 1.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Name : SP 4910 Resin RAL7035

Product group : Resin

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Industrial

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Gurit (UK) Ltd
St Cross Business Park
PO30 5WU Isle of Wight - United Kingdom
T +44 (0) 1983 828 000
contact@gurit.com - www.gurit.com

1.4. Emergency telephone number

Emergency number : +44 (0) 2392 242148

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Sensitisation — Skin, category 1	H317
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412

Full text of H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07

Signal word (CLP) : Warning

Hazardous ingredients : 1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with (chloromethyl)oxirane

Hazard statements (CLP) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (CLP) : P261 - Avoid breathing vapours
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection
P302+P352 - IF ON SKIN: Wash with plenty of water

Child-resistant fastening : No

Tactile warning : No

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with (chloromethyl)oxirane	(CAS No) 30499-70-8 (EC no) 608-489-8	>= 50	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Titanium dioxide substance with national workplace exposure limit(s) (GB)	(CAS No) 13463-67-7 (EC no) 236-675-5 (REACH-no) 01-2119489379-17	10 - 25	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : None under normal use.

Symptoms/injuries after skin contact : May cause an allergic skin reaction. May cause moderate irritation.

Symptoms/injuries after eye contact : May cause slight irritation.

Symptoms/injuries after ingestion : None under normal use.

Symptoms/injuries upon intravenous administration : None under normal use.

Chronic symptoms : Skin irritation, dermatitis and sensitisation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None under normal use.

Explosion hazard : None under normal use.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Evacuate area.

Firefighting instructions : Exercise caution when fighting any chemical fire.

Protection during firefighting : Self-contained breathing apparatus.

Other information : Collect contaminated fire fighting water seperately. It must not enter drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Protective clothing.

6.1.2. For emergency responders

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Recover mechanically the product. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station.

Hygiene measures : Do not eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep cool. Protect from sunlight.

Maximum storage period : 2 year

Storage temperature : ≤ 30 °C

Storage area : Store away from heat. Store in a well-ventilated place.

Special rules on packaging : Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Titanium dioxide (13463-67-7)		
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ (total inhalable) 4 mg/m³ (respirable)
United Kingdom	WEL STEL (mg/m³)	30 mg/m³ (calculated-total inhalable) 12 mg/m³ (calculated-respirable)

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Gloves. Protective clothing. Safety glasses.

Hand protection : Protective gloves

Eye protection : Safety glasses

Respiratory protection : In case of inadequate ventilation wear respiratory protection

Environmental exposure controls : Avoid release to the environment.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour	:	Grey.
Odour	:	characteristic.
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Product is not explosive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with (chloromethyl)oxirane (30499-70-8)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Titanium dioxide (13463-67-7)	
LD50 oral rat	> 10000 mg/kg

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitisation	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified

Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	:	Disposal must be done according to official regulations.
Waste treatment methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations	:	Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	:	Avoid release to the environment.
European List of Waste (LoW) code	:	08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	:	Not applicable

IMDG

Transport hazard class(es) (IMDG)	:	Not applicable

IATA

Transport hazard class(es) (IATA)	:	Not applicable

14.4. Packing group

Packing group (ADR)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Packing group (IATA)	:	Not applicable

14.5. Environmental hazards

Dangerous for the environment	:	No
Marine pollutant	:	No
Other information	:	No supplementary information available

14.6. Special precautions for user

- Overland transport

No data available

- Transport by sea

No data available

- Air transport

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SP 8565 Hardener

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue:27/05/2015 Revision date:02/10/2015 Supersedes:27/05/2015 Version: 1.3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Name : SP 8565 Hardener

Product group : Hardener

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Industrial

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Gurit (UK) Ltd
St Cross Business Park
PO30 5WU Isle of Wight - United Kingdom
T +44 (0) 1983 828 000
contact@gurit.com - www.gurit.com

1.4. Emergency telephone number

Emergency number : +44 (0) 2392 242148

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4	H302
Acute toxicity (dermal), Category 4	H312
Skin corrosion/irritation, Category 1B	H314
Sensitisation — Skin, category 1	H317
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412

Full text of H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05 GHS07

Signal word (CLP) : Danger

Hazardous ingredients : 3-aminomethyl-3,5,5-trimethylcyclohexylamine, Calcium nitrate

Hazard statements (CLP) : H302+H312 - Harmful if swallowed or in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (CLP) : P260 - Do not breathe vapours
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection

Child-resistant fastening : No

Tactile warning : No

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
3-aminomethyl-3,5,5-trimethylcyclohexylamine	(CAS No) 2855-13-2 (EC no) 220-666-8 (EC index no) 612-067-00-9 (REACH-no) 01-2119514687-32	>= 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Calcium nitrate	(CAS No) 10124-37-5 (EC no) 233-332-1	3 - 5	Acute Tox. 4 (Oral), H302
ethanol, ethyl alcohol substance with national workplace exposure limit(s) (GB)	(CAS No) 64-17-5 (EC no) 200-578-6 (EC index no) 603-002-00-5 (REACH-no) 01-2119457610-43	3 - 5	Flam. Liq. 2, H225

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : None under normal use.

Symptoms/injuries after skin contact : May cause an allergic skin reaction. May cause moderate irritation.

Symptoms/injuries after eye contact : May cause slight irritation.

Symptoms/injuries after ingestion : None under normal use.

Symptoms/injuries upon intravenous administration : None under normal use.

Chronic symptoms : Skin irritation, dermatitis and sensitisation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None under normal use.

Explosion hazard : None under normal use.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Evacuate area.

Firefighting instructions : Exercise caution when fighting any chemical fire.

Protection during firefighting : Self-contained breathing apparatus.

Other information : Collect contaminated fire fighting water seperately. It must not enter drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Protective clothing.

6.1.2. For emergency responders

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Recover mechanically the product. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station.

Hygiene measures : Do not eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep cool. Protect from sunlight.

Storage temperature : ≤ 30 °C

Storage area : Store away from heat. Store in a well-ventilated place.

Special rules on packaging : Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol, ethyl alcohol (64-17-5)		
United Kingdom	Local name	Ethanol
United Kingdom	WEL TWA (mg/m³)	1920 mg/m³
United Kingdom	WEL TWA (ppm)	1000 ppm
United Kingdom	WEL STEL (mg/m³)	5760 mg/m³ (calculated)
United Kingdom	WEL STEL (ppm)	3000 ppm (calculated)

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Gloves. Protective clothing. Safety glasses.

Hand protection : Protective gloves

Eye protection : Safety glasses

Environmental exposure controls : Avoid release to the environment.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Yellow.

Odour	:	Amine-like.
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Product is not explosive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin.

ATE CLP (oral)	1258.506 mg/kg bodyweight
ATE CLP (dermal)	1649.175 mg/kg bodyweight

3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)	
LD50 oral rat	1030 mg/kg

Calcium nitrate (10124-37-5)	
LD50 oral rat	302 mg/kg

ethanol, ethyl alcohol (64-17-5)	
LD50 oral rat	7060 mg/kg
LC50 inhalation rat (mg/l)	124.7 mg/l/4h

Skin corrosion/irritation	:	Causes severe skin burns and eye damage.
Serious eye damage/irritation	:	Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified

Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1. Toxicity

3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)	
EC50 Daphnia 1	14.6 - 21.5 mg/l (Exposure time: 48 h - Species: Daphnia magna [semi-static])

Calcium nitrate (10124-37-5)	
LC50 fish 1	10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

ethanol, ethyl alcohol (64-17-5)	
LC50 fish 1	12.0 - 16.0 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	9268 - 14221 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	2 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)	
Log Pow	0.79 (at 23 °C)

ethanol, ethyl alcohol (64-17-5)	
Log Pow	-0.32

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	:	Disposal must be done according to official regulations.
Waste treatment methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations	:	Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	:	Avoid release to the environment.
European List of Waste (LoW) code	:	08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	:	2735
UN-No. (IMDG)	:	2735
UN-No. (IATA)	:	2735

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Proper Shipping Name (IMDG)	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Proper Shipping Name (IATA)	:	Polyamines, liquid, corrosive, n.o.s.
Transport document description (ADR)	:	UN 2735 POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II, (E)
Transport document description (IMDG)	:	UN 2735 POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8

Danger labels (ADR) : 8

:

IMDG

Transport hazard class(es) (IMDG) : 8

Danger labels (IMDG) : 8

:

IATA

Transport hazard class(es) (IATA) : 8

Hazard labels (IATA) : 8

:

14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : C7

Special provisions (ADR) : 274

Limited quantities (ADR) : 1l

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02

Mixed packing provisions (ADR) : MP15

Portable tank and bulk container instructions (ADR) : T11

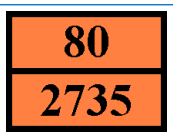
Portable tank and bulk container special provisions (ADR) : TP1, TP27

Tank code (ADR) : L4BN

Vehicle for tank carriage : AT

Transport category (ADR) : 2

Hazard identification number (Kemler No.) : 80

Orange plates	:	
Tunnel restriction code (ADR)	:	E
EAC code	:	2X
APP code	:	B

- Transport by sea

Special provisions (IMDG)	:	274
Limited quantities (IMDG)	:	1 L
Excepted quantities (IMDG)	:	E2
Packing instructions (IMDG)	:	P001
IBC packing instructions (IMDG)	:	IBC02
Tank instructions (IMDG)	:	T11
Tank special provisions (IMDG)	:	TP1, TP27
EmS-No. (Fire)	:	F-A
EmS-No. (Spillage)	:	S-B
Stowage category (IMDG)	:	A
Stowage and segregation (IMDG)	:	'Separated from' acids.
Properties and observations (IMDG)	:	Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Reacts violently with acids. Cause burns to skin, eyes and mucous membranes.

- Air transport

PCA Excepted quantities (IATA)	:	E2
PCA Limited quantities (IATA)	:	Y840
PCA limited quantity max net quantity (IATA)	:	0.5L
PCA packing instructions (IATA)	:	851
PCA max net quantity (IATA)	:	1L
CAO packing instructions (IATA)	:	855
CAO max net quantity (IATA)	:	30L
Special provisions (IATA)	:	A3
ERG code (IATA)	:	8L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Flam. Liq. 2	Flammable liquids, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Sens. 1	Sensitisation — Skin, category 1

H225	Highly flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H412	Harmful to aquatic life with long lasting effects

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 10/17/2012 Reviewed on 10/17/2012

*
1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: SP 9435**
· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the preparation** Epoxy sealing

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

GURIT (UK) Ltd
St. CROSS BUSINESS PARK
NEWPORT I.O.W.
PO30 5WU
UNITED KINGDOM
TEL:+44(0)1983 828000
FAX:+44(0)1983 828100

GURIT (Canada) Inc.
175, rue Péladeau
Magog (Québec)
J1X 5G9
Canada
T: +1 819 847 2182
F: +1 819 847 2572

· **Information department:** Product safety department.
· **Emergency telephone number:** Contact as above

*
2 Hazards identification

· **Classification of the substance or mixture**

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


Irritant
Irritating to eyes and skin. May cause sensitization by skin contact.


Dangerous for the environment
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**
Xi Irritant
N Dangerous for the environment

· **Hazard-determining components of labelling:**
bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)
Diglycidylether of Bisphenol F

· **Risk phrases:**
Irritating to eyes and skin.
May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Safety phrases:**
Avoid contact with skin.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
After contact with skin, wash immediately with plenty of soap and water
Wear suitable gloves and eye/face protection.
Use appropriate container to avoid environmental contamination.
This material and its container must be disposed of as hazardous waste.

(Contd. on page 2)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 10/17/2012 Reviewed on 10/17/2012

Trade name: SP 9435

(Contd. of page 1)

· **Special labelling of certain preparations:**
Contains epoxy constituents. See information supplied by the manufacturer.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *1
Fire = 1
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
25068-38-6	bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	25-50%
9003-36-5	Diglycidylether of Bisphenol F	25-50%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **Description of first aid measures**
· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Water haze
Foam
Fire-extinguishing powder
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 3)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 10/17/2012 Reviewed on 10/17/2012

Trade name: SP 9435

(Contd. of page 2)

· **Advice for firefighters**
· **Protective equipment:** No special measures required.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Keep away from heat and direct sunlight.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
14807-96-6 Talc (Mg3H2(SiO3)4) (10-25%)	
PEL	20 mppcf ppm (containing <1% Quartz)
REL	2* mg/m³ *respirable dust
TLV	2 R mg/m³ E
13463-67-7 titanium dioxide (2.5-10%)	
PEL	15* mg/m³ *total dust
REL	LFC (LOQ 0.2 mg/m3)
TLV	10 mg/m³

· **Additional information:** The lists that were valid during the creation were used as basis.

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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 10/17/2012 Reviewed on 10/17/2012

Trade name: SP 9435

(Contd. of page 3)

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Use suitable respiratory protective device in case of insufficient ventilation.
Filter P2
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
· **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Pasty
Color:	According to product specification
· **Odor:**	Weak, characteristic
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	> 200℃ (> 392 ℉)
· **Flash point:**	251℃ (484 ℉)
· **Ignition temperature:**	460.0℃ (860 ℉)
· **Auto igniting:**	Product is not selfigniting.

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Trade name: SP 9435

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· **Danger of explosion:**	Product does not present an explosion hazard.
· **Vapor pressure at 20℃ (68 ℉):**	0.1 hPa
· **Density:**	Not determined.
· **Solubility in / Miscibility with Water:**	Not miscible or difficult to mix.
· **Viscosity: Dynamic at 20℃ (68 ℉):**	128000 mPas
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	0.0 %
Solids content:	70 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** Danger of toxic pyrolysis products.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

25068-38-6 bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤700)

Oral	LD50	10000 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

14807-96-6	Talc (Mg3H2(SiO3)4)	3
13463-67-7	titanium dioxide	3
7631-86-9	silicon dioxide, chemically prepared	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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Trade name: SP 9435

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12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 1 (Self-assessment): slightly hazardous for water
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**
· **Recommendation:**
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

*
14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN3077
· **UN proper shipping name**	
· **DOT, IMDG, IATA**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), Diglycidylether of Bisphenol F)
· **ADR**	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), Diglycidylether of Bisphenol F)
· **Transport hazard class(es)**	
· **DOT, IMDG**	
· **Class**	9 Miscellaneous dangerous substances and articles.
· **Label**	9

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Trade name: SP 9435

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· **ADR, IATA**

· **Class**	9 Miscellaneous dangerous substances and articles
· **Label**	9
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special marking (ADR):**	Symbol (fish and tree)
· **Special marking (IATA):**	Symbol (fish and tree)
· **Special precautions for user**	Warning: Miscellaneous dangerous substances and articles
· **Danger code (Kemler):**	90
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

*
15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

25068-38-6	bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
28064-14-4	Diglycidylether of Bisphenol F
14807-96-6	Talc (Mg3H2(SiO3)4)
25852-37-3	polymer of polymethylmethacrylate and butyl acrylate
13463-67-7	titanium dioxide
7631-86-9	silicon dioxide, chemically prepared
471-34-1	calcium carbonate

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

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· **TLV (Threshold Limit Value established by ACGIH)**

14807-96-6	Talc (Mg3H2(SiO3)4)	A4
13463-67-7	titanium dioxide	A4

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

13463-67-7	titanium dioxide

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **National regulations:**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

· **Department issuing MSDS:** Health, Safety & Environmental department.
· **Contact:** SIMON RHODES
· *** Data compared to the previous version altered.**

Spabond 730 Hardener

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue:29/05/2015 Revision date: : Version: 2.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Name : Spabond 730 Hardener

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Industrial

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Gurit (UK) Ltd
St Cross Business Park
PO30 5WU Isle of Wight - United Kingdom
T +44 (0) 1983 828 000
contact@gurit.com - www.gurit.com

1.4. Emergency telephone number

Emergency number : +44 (0) 2392 242148

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Sensitisation — Skin, category 1	H317
Reproductive toxicity, Category 1B	H360
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412

Full text of H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05 GHS07 GHS08

Signal word (CLP) : Danger

Hazardous ingredients : N,N-dimethylformamide, dimethyl formamide, Bis[(dimethylamino)methyl]phenol

Hazard statements (CLP) : Restricted to professional users
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H360 - May damage the unborn child
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (CLP) : P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing vapours
P264 - Wash hands, forearms and face thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection

Child-resistant fastening : No

Tactile warning : No

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,4,6-tris(dimethylaminomethyl)phenol	(CAS No) 90-72-2 (EC no) 202-013-9 (EC index no) 603-069-00-0 (REACH-no) 01-2119560597-27	< 10	Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Diethylene glycol bis(3-aminopropyl) ether	(CAS No) 4246-51-9 (EC no) 224-207-2 (REACH-no) 05-2115221331-67	< 5	Skin Corr. 1B, H314 Skin Sens. 1, H317
Bis[(dimethylamino)methyl]phenol	(CAS No) 71074-89-0 (EC no) 275-162-0 (REACH-no) 01-2119560597-27	< 3	Skin Corr. 1B, H314
N,N-dimethylformamide, dimethyl formamide substance listed as REACH Candidate (N,N-dimethylformamide)	(CAS No) 68-12-2 (EC no) 200-679-5 (EC index no) 616-001-00-X	< 1	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319 Repr. 1B, H360D

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : None under normal use.

Symptoms/injuries after skin contact : May cause an allergic skin reaction. May cause moderate irritation.

Symptoms/injuries after eye contact : May cause slight irritation.

Symptoms/injuries after ingestion : None under normal use.

Symptoms/injuries upon intravenous administration : None under normal use.

Chronic symptoms : Skin irritation, dermatitis and sensitisation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None under normal use.

Explosion hazard : None under normal use.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Evacuate area.

Firefighting instructions	:	Exercise caution when fighting any chemical fire.
Protection during firefighting	:	Self-contained breathing apparatus.
Other information	:	Collect contaminated fire fighting water seperately. It must not enter drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear protective clothing.

6.1.2. For emergency responders

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Collect spillage.
Methods for cleaning up	:	On land, sweep or shovel into suitable containers. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Ensure good ventilation of the work station.
Hygiene measures	:	Do not eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep container closed when not in use. Keep cool. Protect from sunlight.
Storage temperature	:	≤ 30 °C
Storage area	:	Store away from heat. Store in a well-ventilated place.
Special rules on packaging	:	Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

N,N-dimethylformamide, dimethyl formamide (68-12-2)		
EU	Local name	N,N Dimethylformamide
EU	IOELV TWA (mg/m³)	15 mg/m³
EU	IOELV TWA (ppm)	5 ppm
EU	IOELV STEL (mg/m³)	30 mg/m³
EU	IOELV STEL (ppm)	10 ppm
EU	Notes	skin
United Kingdom	Local name	N,N-Dimethylformamide
United Kingdom	WEL TWA (mg/m³)	15 mg/m³
United Kingdom	WEL TWA (ppm)	5 ppm
United Kingdom	WEL STEL (mg/m³)	30 mg/m³
United Kingdom	WEL STEL (ppm)	10 ppm
United Kingdom	Remark (WEL)	Sk

8.2. Exposure controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Personal protective equipment	:	Gloves. Protective clothing. Safety glasses.

Hand protection : protective gloves

Eye protection : Safety glasses

Environmental exposure controls : Avoid release to the environment.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Yellow.
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Product is not explosive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

N,N-dimethylformamide, dimethyl formamide (68-12-2)	
LD50 oral rat	2800 mg/kg
LD50 dermal rat	1100 mg/kg

Diethylene glycol bis(3-aminopropyl) ether (4246-51-9)	
LD50 oral rat	4290 mg/kg

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LD50 oral rat	1200 mg/kg
LD50 dermal rat	1280 mg/kg

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : May damage the unborn child.
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

N,N-dimethylformamide, dimethyl formamide (68-12-2)	
LC50 fish 1	6300 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
EC50 Daphnia 1	7500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	9800 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	8485 mg/l (Exposure time: 48 h - Species: Daphnia magna [semi-static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

N,N-dimethylformamide, dimethyl formamide (68-12-2)	
BCF fish 1	0.3 - 1.2
Log Pow	-1.028

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
N,N-dimethylformamide, dimethyl formamide (68-12-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable

Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

No data available

- Transport by sea

No data available

- Air transport

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: N,N-dimethylformamide (EC 200-679-5, CAS 68-12-2)

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Sens. 1	Sensitisation — Skin, category 1

H226	Flammable liquid and vapour
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H360	May damage fertility or the unborn child
H360D	May damage the unborn child
H412	Harmful to aquatic life with long lasting effects

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Spabond 730 Resin

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue:29/05/2015 Revision date:22/09/2015 Supersedes:29/05/2015 Version: 1.3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Name : Spabond 730 Resin

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Industrial

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Gurit (UK) Ltd
St Cross Business Park
PO30 5WU Isle of Wight - United Kingdom
T +44 (0) 1983 828 000
contact@gurit.com - www.gurit.com

1.4. Emergency telephone number

Emergency number : +44 (0) 2392 242148

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Sensitisation — Skin, category 1	H317
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411

Full text of H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07 GHS09

Signal word (CLP) : Warning

Hazardous ingredients : reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700), Formaldehyde, polymer with (chloromethyl)oxirane and phenol

Hazard statements (CLP) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP) : P261 - Avoid breathing vapours
P264 - Wash hands, forearms and face thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection
P302+P352 - IF ON SKIN: Wash with plenty of water

Child-resistant fastening : No

Tactile warning : No

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700)	(CAS No) 25068-38-6 (EC no) 500-033-5 (EC index no) 603-074-00-8 (REACH-no) 01-2119456619-26	>= 50	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Formaldehyde, polymer with (chloromethyl)oxirane and phenol	(CAS No) 9003-36-5 (EC no) 500-006-8 (REACH-no) 01-2119454393-40	10 - 25	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411

Specific concentration limits:

Name	Product identifier	Specific concentration limits
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700)	(CAS No) 25068-38-6 (EC no) 500-033-5 (EC index no) 603-074-00-8 (REACH-no) 01-2119456619-26	(C >= 5) Eye Irrit. 2, H319 (C >= 5) Skin Irrit. 2, H315

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : None under normal use.

Symptoms/injuries after skin contact : May cause an allergic skin reaction. May cause moderate irritation.

Symptoms/injuries after eye contact : May cause slight irritation.

Symptoms/injuries after ingestion : None under normal use.

Symptoms/injuries upon intravenous administration : None under normal use.

Chronic symptoms : Skin irritation, dermatitis and sensitisation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None under normal use.

Explosion hazard : None under normal use.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Evacuate area.

Firefighting instructions : Exercise caution when fighting any chemical fire.

Protection during firefighting	:	Self-contained breathing apparatus.
Other information	:	Collect contaminated fire fighting water seperately. It must not enter drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	:	Wear protective clothing.

6.1.2. For emergency responders

Emergency procedures	:	Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Collect spillage.
Methods for cleaning up	:	On land, sweep or shovel into suitable containers. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Ensure good ventilation of the work station.
Hygiene measures	:	Do not eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep container closed when not in use. Keep cool. Protect from sunlight.
Storage area	:	Store away from heat. Store in a well-ventilated place.
Special rules on packaging	:	Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Personal protective equipment	:	Gloves. Protective clothing. Safety glasses.
Hand protection	:	protective gloves
Eye protection	:	Safety glasses

Environmental exposure controls	:	Avoid release to the environment.
Other information	:	Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	Yellow.
Odour	:	No data available
Odour threshold	:	No data available
pH	:	No data available

Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available.
Oxidising properties	:	No data available.
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Product is not explosive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Formaldehyde, polymer with (chloromethyl)oxirane and phenol (9003-36-5)	
LD50 oral rat	> 2 g/kg

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) (25068-38-6)	
LD50 oral rat	11400 mg/kg

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitisation	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) (25068-38-6)	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) (25068-38-6)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Waste disposal recommendations : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 3077

UN-No. (IMDG) : 3077

UN-No. (IATA) : 3077

14.2. UN proper shipping name

Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.

Transport document description (ADR) : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) ; Formaldehyde, polymer with (chloromethyl)oxirane and phenol), 9, III, (E)

Transport document description (IMDG) : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) ; Formaldehyde, polymer with (chloromethyl)oxirane and phenol), 9, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 9

Danger labels (ADR) : 9

:

IMDG

Transport hazard class(es) (IMDG) : 9

Danger labels (IMDG) : 9

:

IATA

Transport hazard class(es) (IATA) : 9

Hazard labels (IATA) : 9

:

14.4. Packing group

Packing group (ADR) : III

Packing group (IMDG) : III

Packing group (IATA) : III

14.5. Environmental hazards

Dangerous for the environment : Yes

Marine pollutant : Yes

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : M7

Special provisions (ADR) : 274, 335, 601

Limited quantities (ADR) : 5kg

Excepted quantities (ADR) : E1

Packing instructions (ADR) : P002, IBC08, LP02, R001

Special packing provisions (ADR) : PP12, B3

Mixed packing provisions (ADR) : MP10

Portable tank and bulk container instructions (ADR) : T1, BK1, BK2

Portable tank and bulk container special provisions (ADR) : TP33

Tank code (ADR) : SGAV, LGBV

Vehicle for tank carriage : AT

Transport category (ADR) : 3

Special provisions for carriage - Packages (ADR) : V13

Special provisions for carriage - Bulk (ADR) : VV1

Special provisions for carriage - Loading, unloading and handling (ADR) : CV13

Hazard identification number (Kemler No.) : 90

Orange plates :

Tunnel restriction code (ADR) : E

EAC code : 2Z

- Transport by sea

Special provisions (IMDG) : 274, 335, 966, 967

Limited quantities (IMDG) : 5 kg

Excepted quantities (IMDG) : E1

Packing instructions (IMDG) : P002, LP02

Special packing provisions (IMDG)	:	PP12
IBC packing instructions (IMDG)	:	IBC08
IBC special provisions (IMDG)	:	B3
Tank instructions (IMDG)	:	T1, BK1, BK2, BK3
Tank special provisions (IMDG)	:	TP33
EmS-No. (Fire)	:	F-A
EmS-No. (Spillage)	:	S-F
Stowage category (IMDG)	:	A
Stowage and segregation (IMDG)	:	When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

- Air transport

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y956
PCA limited quantity max net quantity (IATA)	:	30kgG
PCA packing instructions (IATA)	:	956
PCA max net quantity (IATA)	:	400kg
CAO packing instructions (IATA)	:	956
CAO max net quantity (IATA)	:	400kg
Special provisions (IATA)	:	A97, A158, A179, A197
ERG code (IATA)	:	9L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Spabond 730 Hardener

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue:29/05/2015 Revision date:30/10/2015 Supersedes:29/05/2015 Version: 2.4

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Name : Spabond 730 Hardener

Product group : Hardener

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Industrial

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Gurit (UK) Ltd
St Cross Business Park
PO30 5WU Isle of Wight - United Kingdom
T +44 (0) 1983 828 000
contact@gurit.com - www.gurit.com

1.4. Emergency telephone number

Emergency number : +44 (0) 2392 242148

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1C	H314
Sensitisation — Skin, category 1	H317
Reproductive toxicity, Category 1B	H360

Full text of H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05 GHS07 GHS08

Signal word (CLP) : Danger

Hazardous ingredients : N,N-dimethylformamide, dimethyl formamide, Diethylene glycol bis(3-aminopropyl) ether, 2,4,6-tris(dimethylaminomethyl)phenol, Bis[(dimethylamino)methyl]phenol

Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H360 - May damage the unborn child

Precautionary statements (CLP) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe vapours
P264 - Wash hands, forearms and face thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves, protective clothing, eye protection

Child-resistant fastening : No

Tactile warning : No

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,4,6-tris(dimethylaminomethyl)phenol	(CAS No) 90-72-2 (EC no) 202-013-9 (EC index no) 603-069-00-0 (REACH-no) 01-2119560597-27	< 10	Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Diethylene glycol bis(3-aminopropyl) ether	(CAS No) 4246-51-9 (EC no) 224-207-2 (REACH-no) 05-2115221331-67	< 5	Skin Corr. 1B, H314 Skin Sens. 1, H317
Bis[(dimethylamino)methyl]phenol	(CAS No) 71074-89-0 (EC no) 275-162-0 (REACH-no) 01-2119560597-27	< 3	Skin Corr. 1B, H314
N,N-dimethylformamide, dimethyl formamide substance listed as REACH Candidate (N,N-dimethylformamide)	(CAS No) 68-12-2 (EC no) 200-679-5 (EC index no) 616-001-00-X	< 1	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Eye Irrit. 2, H319 Repr. 1B, H360D

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : None under normal use.

Symptoms/injuries after skin contact : May cause an allergic skin reaction. May cause moderate irritation.

Symptoms/injuries after eye contact : May cause slight irritation.

Symptoms/injuries after ingestion : None under normal use.

Symptoms/injuries upon intravenous administration : None under normal use.

Chronic symptoms : Skin irritation, dermatitis and sensitisation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None under normal use.

Explosion hazard : None under normal use.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Evacuate area.

Firefighting instructions : Exercise caution when fighting any chemical fire.

Protection during firefighting : Self-contained breathing apparatus.

Other information : Collect contaminated fire fighting water seperately. It must not enter drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear protective clothing. Protective clothing.

6.1.2. For emergency responders

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : On land, sweep or shovel into suitable containers. This material and its container must be disposed of in a safe way, and as per local legislation. Recover mechanically the product.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station.

Hygiene measures : Do not eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep cool. Protect from sunlight.

Storage temperature : ≤ 30 °C

Storage area : Store away from heat. Store in a well-ventilated place.

Special rules on packaging : Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

N,N-dimethylformamide, dimethyl formamide (68-12-2)		
EU	Local name	N,N Dimethylformamide
EU	IOELV TWA (mg/m³)	15 mg/m³
EU	IOELV TWA (ppm)	5 ppm
EU	IOELV STEL (mg/m³)	30 mg/m³
EU	IOELV STEL (ppm)	10 ppm
EU	Notes	skin
United Kingdom	Local name	N,N-Dimethylformamide
United Kingdom	WEL TWA (mg/m³)	15 mg/m³
United Kingdom	WEL TWA (ppm)	5 ppm
United Kingdom	WEL STEL (mg/m³)	30 mg/m³
United Kingdom	WEL STEL (ppm)	10 ppm
United Kingdom	Remark (WEL)	Sk

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Gloves. Protective clothing. Safety glasses.

Hand protection : protective gloves. Protective gloves

Eye protection : Safety glasses

Environmental exposure controls : Avoid release to the environment.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Yellow.
Odour	: Amine-like.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Product is not explosive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

N,N-dimethylformamide, dimethyl formamide (68-12-2)	
LD50 oral rat	2800 mg/kg
LD50 dermal rat	1100 mg/kg

Diethylene glycol bis(3-aminopropyl) ether (4246-51-9)	
LD50 oral rat	4290 mg/kg

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LD50 oral rat	1200 mg/kg
LD50 dermal rat	1280 mg/kg

Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Serious eye damage, category 1, implicit
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : May damage the unborn child.
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

N,N-dimethylformamide, dimethyl formamide (68-12-2)	
LC50 fish 1	6300 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
EC50 Daphnia 1	7500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	9800 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	8485 mg/l (Exposure time: 48 h - Species: Daphnia magna [semi-static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

N,N-dimethylformamide, dimethyl formamide (68-12-2)	
BCF fish 1	0.3 - 1.2
Log Pow	-1.028

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
N,N-dimethylformamide, dimethyl formamide (68-12-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.
European List of Waste (LoW) code : 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

No data available

- Transport by sea

No data available

- Air transport

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: N,N-dimethylformamide (EC 200-679-5, CAS 68-12-2)

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

A chemical safety assessment has been carried out
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3

Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Sens. 1	Sensitisation — Skin, category 1
H226	Flammable liquid and vapour
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H360	May damage fertility or the unborn child
H360D	May damage the unborn child
H412	Harmful to aquatic life with long lasting effects

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

SYNLUBE CLP 320

Product Use: Industrial Oil
Product Number(s): 032726

Company Identification
YX Energi A/S
Buddingevej 195
DK-2860 Søborg

Denmark

Transportation Emergency Response
Europe: 0044/(0)18 65 407333
Health Emergency
Europe: 0044/(0)18 65 407333
Product Information
Technical Information: 0045/39 47 8100
FAX number: 0045/39 47 8110

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	EC NUMBER	SYMBOL / RISK PHRASES	AMOUNT
Alkylated diphenylamine	Proprietary	Xi/R36, N/R51/53	< 2 %weight

The full text of all R-phrases is shown in Section 16.

SECTION 3 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as dangerous according to EU regulatory guidelines.
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to be harmful.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a synthetic hydrocarbon oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified.

ENVIRONMENTAL EFFECTS: Not classified.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 260 °C (500 °F) (Min)
Autoignition: No Data Available
Flammability (Explosive) Limits (% by volume in air): Lower: No data available Upper: No data available

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Specific Use: Industrial Oil

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by

themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Polyvinyl Chloride (PVC or Vinyl).
Respiratory Protection: No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

No applicable occupational exposure limits exist for this material or its components. Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Yellow
Physical State: Liquid
Odor: Characteristic
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Boiling Point: No Data Available
Solubility: Insoluble in water.
Freezing Point: No Data Available
Density: 1.01 kg/l @ 20°C (68°F) (Typical)
Viscosity: 320 mm2/s @ 40°C (104°F) (Typical)
Viscosity: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: Aldehydes (Elevated temperatures)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components. No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No Data Available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

In accordance with European Waste Catalogue (E.W.C.) the codification is the following: 13 02 06

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
ADR/RID Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

SECTION 15 REGULATORY INFORMATION

REGULATORY LISTS SEARCHED:
01=EU. Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.
02=EU Directive 90/394/EEC: Carcinogens at work.
03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.
04=EU Directive 96/82/EC (Seveso II): Article 9.
05=EU Directive 96/82/EC (Seveso II): Articles 6 and 7.
06=EU Directive 98/24/EC: Chemical agents at work.

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).
CLASSIFICATION - LABELING:
Under the criteria of the directive EEC/67/548 (dangerous substances) and EEC/1999/45 (dangerous preparations): Not classified

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: Changed from own formulation to purchased product.
Revision Date: DECEMBER 12, 2006

Full text of R-phrases:
R36; Irritating to eyes.
R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value		TWA - Time Weighted Average	
STEL - Short-term Exposure Limit		PEL - Permissible Exposure Limit	
CVX - Chevron		CAS - Chemical Abstract Service Number	

Prepared according to the criteria of the directive 2001/58/EC by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Meropa Synthetic WM 320

Product Use: Industrial Gear Lubricant
Product Number(s): 278012
Synonyms: Pinnacle WM 320
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	0.1 - 1.5 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying

non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: Keep out of the reach of children.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: 315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Density: 0.9 kg/l @ 15°C (59°F) (Typical)
Viscosity: 320 mm2/s @ 40°C (104°F) Minimum
Coefficient of Therm. Expansion / °F: No data available
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 232 °C (450 °F) (Typical)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.
The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM OIL, N.E.C.; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
Additional Information: NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	NO
2.	Delayed (Chronic) Health Effects:	NO
3.	Fire Hazard:	NO
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:
01-1=IARC Group 1 03=EPCRA 313

01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Gear oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1-16
Revision Date: APRIL 30, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001

Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet

1. Chemical product and company identification

Product name CASTROL TRIBOL 1510/680

MSDS# 72330-AG

Code 72330-AG

Product use Gear oils.

Manufacturer CASTROL INDUSTRIAL NORTH AMERICA INC.
1001 WEST 31ST STREET
DOWNERS GROVE, IL 60515-1280
TEL.: 1 - 630-241-4000 (USA)

Supplier CASTROL INDUSTRIAL NORTH AMERICA INC.
1001 West 31St Street
Downers Grove, IL 60515-1280
U.S.A.
1 (630) 241-4000 (USA)

EMERGENCY SPILL INFORMATION: 1 (800) 424-9300 CHEMTREC (USA)

2. Composition/information on ingredients

Ingredient name	CAS #	% by weight	Exposure limits
molybdenum, bis[O,O-bis(2-ethyl-hexyl)phosphorodithioatc	72030-25-2	1 - 5	**ACGIH TLV (United States, 2002).** TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble **OSHA PEL (United States, 1993).** TWA: 5 mg/m^3 8 hour(s). **OSHA PEL 1989 (United States, 1989).** TWA: 5 mg/m^3 8 hour(s). Form: Soluble
Distillates (petroleum), hydrotreated, heavy paraffinic, or Distillates (petroleum), solvent-dewaxed heavy paraffinic, or Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4 &/or 64742-54-7 &/or 64742-65-0	1 - 5	**ACGIH (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist STEL: 10 mg/m^3 15 minute(s). Form: Mist **OSHA (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist

3. Hazards identification

Physical state Liquid.

Color Yellow.

Emergency overview WARNING

CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Avoid prolonged or repeated contact with skin. Keep container closed. Wash thoroughly after handling. Use with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Routes of entry Skin Contact. Eye contact. Inhalation. Ingestion.

Potential Health Effects

Eyes Causes eye irritation.

Skin May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Inhalation May cause respiratory tract irritation.

Ingestion Swallowing may have the following effects: discomfort (gastrointestinal) and diarrhea

Medical conditions aggravated by overexposure: None identified.

See toxicological Information (section 11)

4. First aid measures

Eye Contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Skin Contact Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

5. Fire-fighting measures

Flammability of the product May be combustible at high temperature.

Flash point 265 °C (Closed cup) Pensky-Martens.

Products of combustion These products are carbon oxides (CO, CO_2), sulfur oxides (SO_2, SO_3...), phosphates. Some metallic oxides.

Unusual fire/explosion hazards This material is not explosive as defined by established regulatory criteria.

This material is not explosive as defined by established regulatory criteria.

Fire fighting media and instructions In case of fire, use water fog, foam, dry chemicals, or CO2.

Protective clothing (fire) Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Special remarks on fire hazards None identified.

Special remarks on explosion hazards None identified.

6. Accidental release measures

Personal Precautions

Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).

Environmental precautions and clean-up methods

If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information.

Personal protection in case of a large spill

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

7. Handling and storage

Handling

Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Wash thoroughly after handling. Use only with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.

Storage

Keep container tightly closed. Keep container in a cool, well-ventilated area. Empty containers may contain harmful, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
molybdenum, bis[O,O-bis(2-ethyl-hexyl)phosphorodithioatc	**ACGIH TLV (United States, 2002).** TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble **OSHA PEL (United States, 1993).** TWA: 5 mg/m^3 8 hour(s). **OSHA PEL 1989 (United States, 1989).** TWA: 5 mg/m^3 8 hour(s). Form: Soluble
Distillates (petroleum), hydrotreated, heavy paraffinic, or Distillates (petroleum), solvent-dewaxed heavy paraffinic, or Distillates (petroleum), solvent-refined heavy paraffinic	**ACGIH (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist STEL: 10 mg/m^3 15 minute(s). Form: Mist **OSHA (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist

Control Measures

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Hygiene measures

Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Personal protection

Eyes

Avoid contact with eyes. Safety glasses with side shield or chemical goggles.

Skin and Body

Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin.

Respiratory

Use only with adequate ventilation.

Hands

Wear suitable gloves.

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Physical state	Liquid.
Odor	Characteristic.
Color	Yellow.
Solubility	Insoluble in cold water, hot water.
Viscosity	Kinematic: 680 mm^2/s (680 cSt) at 40°C

10. Stability and reactivity

Stability and Reactivity	The product is stable.
Conditions to avoid	None known.
Incompatibility with various substances	Strong oxidizing materials
Hazardous Decomposition Products	nitrogen oxides (NO, NO_2...) Carbon Dioxide (CO_2).
Hazardous polymerization	Will not occur.

11. Toxicological information

Ingredient name	Test	Result	Route	Species
Phenol, Nonyl-, Phosphite (3:1)	LD50	>2000 mg/kg	Oral	Rat

Chronic toxicity

Carcinogenic effects

No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).

Mutagenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

Reproductive effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.

Teratogenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

12. Ecological information

Ecotoxicity No testing has been performed by the manufacturer.

Persistence/degradability

Not determined.

13. Disposal considerations

Waste information Waste must be disposed of in accordance with federal, state and local environmental control regulations. Keep out of waterways. Disposal of this material to the land may be banned by federal law (40 CFR 268).

RCRA Waste Code(s) USED OIL

Consult your local or regional authorities.

14. Transport information

International transport regulations

Regulatory Information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-----	-----	Not available.		Not available.
TDG Classification	Not regulated.	-----	-----	Not available.		Not available.
IMDG Classification	Not available.	Not available.	Not available.	Not available.		Not available.
IATA Classification	Not available.	Not available.	Not available.	Not available.		Not available.

15. Regulatory information

U.S. Federal regulations US INVENTORY (TSCA): In compliance.

This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	2-ethylhexyl zinc dithiophosphate	4259-15-8	2.3
Supplier notification	2-ethylhexyl zinc dithiophosphate	4259-15-8	2.3

State regulations New Jersey:2-ethylhexyl zinc dithiophosphate
Pennsylvania RTK:2-ethylhexyl zinc dithiophosphate (environmental hazard, generic environmental hazard)

California prop. 65: No products were found.

Inventories

AUSTRALIAN INVENTORY (AICS): Not determined.

CANADA INVENTORY (DSL): Not listed.

CHINA INVENTORY (IECS): Not determined.

EC INVENTORY (EINECS/ELINCS): In compliance.

JAPAN INVENTORY (ENCS): In compliance.

KOREA INVENTORY (ECL): In compliance.

PHILIPPINE INVENTORY (PICCS): In compliance.

16. Other information

Label Requirements

WARNING

CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

HMIS® Rating :

Health	**1**
Flammability	**1**
Physical Hazard	**0**
Personal protection	**b**

National Fire Protection Association (U.S.A.)

Other special considerations

PETROLEUM OIL: STEL = 10 mg/M3. Using terminology of the International Agency for Research on Cancer (IARC), the petroleum distillates listed in Section II are classified by the supplier as severely processed. Not all those listed in Section II may be present. The supplier has stated that these distillates do not require a carcinogen label as defined by OSHA 29 CFR 1910.1200.

History

Date of issue 01/29/2004.

Date of previous issue 01/27/2004.

Prepared by Product Stewardship

Notice to reader

NOTICE : This Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product.

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.

Material Safety Data Sheet

1. Chemical product and company identification

Product name CASTROL TRIBOL 1510/680

MSDS# 72330-AG

Code 72330-AG

Product use Gear oils.

Manufacturer CASTROL INDUSTRIAL NORTH AMERICA INC.
1001 WEST 31ST STREET
DOWNERS GROVE, IL 60515-1280
TEL.: 1 - 630-241-4000 (USA)

Supplier CASTROL INDUSTRIAL NORTH AMERICA INC.
1001 West 31St Street
Downers Grove, IL 60515-1280
U.S.A.
1 (630) 241-4000 (USA)

EMERGENCY SPILL INFORMATION: 1 (800) 424-9300 CHEMTREC (USA)

2. Composition/information on ingredients

Ingredient name	CAS #	% by weight	Exposure limits
molybdenum, bis[O,O-bis(2-ethyl-hexyl)phosphorodithioatc	72030-25-2	1 - 5	**ACGIH TLV (United States, 2002).** TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble **OSHA PEL (United States, 1993).** TWA: 5 mg/m^3 8 hour(s). **OSHA PEL 1989 (United States, 1989).** TWA: 5 mg/m^3 8 hour(s). Form: Soluble
Distillates (petroleum), hydrotreated, heavy paraffinic, or Distillates (petroleum), solvent-dewaxed heavy paraffinic, or Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4 &/or 64742-54-7 &/or 64742-65-0	1 - 5	**ACGIH (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist STEL: 10 mg/m^3 15 minute(s). Form: Mist **OSHA (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist

3. Hazards identification

Physical state Liquid.

Color Yellow.

Emergency overview WARNING

CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Avoid prolonged or repeated contact with skin. Keep container closed. Wash thoroughly after handling. Use with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Routes of entry Skin Contact. Eye contact. Inhalation. Ingestion.

Potential Health Effects

Eyes Causes eye irritation.

Skin May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Inhalation May cause respiratory tract irritation.

Ingestion Swallowing may have the following effects: discomfort (gastrointestinal) and diarrhea

Medical conditions aggravated by overexposure: None identified.

See toxicological Information (section 11)

4. First aid measures

Eye Contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Skin Contact Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

5. Fire-fighting measures

Flammability of the product May be combustible at high temperature.

Flash point 265 °C (Closed cup) Pensky-Martens.

Products of combustion These products are carbon oxides (CO, CO_2), sulfur oxides (SO_2, SO_3...), phosphates. Some metallic oxides.

Unusual fire/explosion hazards This material is not explosive as defined by established regulatory criteria.

This material is not explosive as defined by established regulatory criteria.

Fire fighting media and instructions In case of fire, use water fog, foam, dry chemicals, or CO2.

Protective clothing (fire) Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Special remarks on fire hazards None identified.

Special remarks on explosion hazards None identified.

6. Accidental release measures

Personal Precautions

Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).

Environmental precautions and clean-up methods

If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information.

Personal protection in case of a large spill

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

7. Handling and storage

Handling

Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Wash thoroughly after handling. Use only with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.

Storage

Keep container tightly closed. Keep container in a cool, well-ventilated area. Empty containers may contain harmful, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
molybdenum, bis[O,O-bis(2-ethyl-hexyl)phosphorodithioatc	**ACGIH TLV (United States, 2002).** TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble TWA: 0.5 mg/m^3 8 hour(s). Form: Soluble **OSHA PEL (United States, 1993).** TWA: 5 mg/m^3 8 hour(s). **OSHA PEL 1989 (United States, 1989).** TWA: 5 mg/m^3 8 hour(s). Form: Soluble
Distillates (petroleum), hydrotreated, heavy paraffinic, or Distillates (petroleum), solvent-dewaxed heavy paraffinic, or Distillates (petroleum), solvent-refined heavy paraffinic	**ACGIH (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist STEL: 10 mg/m^3 15 minute(s). Form: Mist **OSHA (United States).** TWA: 5 mg/m^3 8 hour(s). Form: Mist

Control Measures

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Hygiene measures

Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Personal protection

Eyes

Avoid contact with eyes. Safety glasses with side shield or chemical goggles.

Skin and Body

Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin.

Respiratory

Use only with adequate ventilation.

Hands

Wear suitable gloves.

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Physical state	Liquid.
Odor	Characteristic.
Color	Yellow.
Solubility	Insoluble in cold water, hot water.
Viscosity	Kinematic: 680 mm^2/s (680 cSt) at 40°C

10. Stability and reactivity

Stability and Reactivity	The product is stable.
Conditions to avoid	None known.
Incompatibility with various substances	Strong oxidizing materials
Hazardous Decomposition Products	nitrogen oxides (NO, NO_2...) Carbon Dioxide (CO_2).
Hazardous polymerization	Will not occur.

11. Toxicological information

Ingredient name	Test	Result	Route	Species
Phenol, Nonyl-, Phosphite (3:1)	LD50	>2000 mg/kg	Oral	Rat

Chronic toxicity

Carcinogenic effects

No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).

Mutagenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

Reproductive effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.

Teratogenic effects

No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

12. Ecological information

Ecotoxicity No testing has been performed by the manufacturer.

Persistence/degradability

Not determined.

13. Disposal considerations

Waste information Waste must be disposed of in accordance with federal, state and local environmental control regulations. Keep out of waterways. Disposal of this material to the land may be banned by federal law (40 CFR 268).

RCRA Waste Code(s) USED OIL

Consult your local or regional authorities.

14. Transport information

International transport regulations

Regulatory Information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-----	-----	Not available.		Not available.
TDG Classification	Not regulated.	-----	-----	Not available.		Not available.
IMDG Classification	Not available.	Not available.	Not available.	Not available.		Not available.
IATA Classification	Not available.	Not available.	Not available.	Not available.		Not available.

15. Regulatory information

U.S. Federal regulations US INVENTORY (TSCA): In compliance.

This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	2-ethylhexyl zinc dithiophosphate	4259-15-8	2.3
Supplier notification	2-ethylhexyl zinc dithiophosphate	4259-15-8	2.3

State regulations New Jersey:2-ethylhexyl zinc dithiophosphate
Pennsylvania RTK:2-ethylhexyl zinc dithiophosphate (environmental hazard, generic environmental hazard)

California prop. 65: No products were found.

Inventories

AUSTRALIAN INVENTORY (AICS): Not determined.

CANADA INVENTORY (DSL): Not listed.

CHINA INVENTORY (IECS): Not determined.

EC INVENTORY (EINECS/ELINCS): In compliance.

JAPAN INVENTORY (ENCS): In compliance.

KOREA INVENTORY (ECL): In compliance.

PHILIPPINE INVENTORY (PICCS): In compliance.

16. Other information

Label Requirements

WARNING

CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

HMIS® Rating :

Health	**1**
Flammability	**1**
Physical Hazard	**0**
Personal protection	**b**

National Fire Protection Association (U.S.A.)

Other special considerations

PETROLEUM OIL: STEL = 10 mg/M3. Using terminology of the International Agency for Research on Cancer (IARC), the petroleum distillates listed in Section II are classified by the supplier as severely processed. Not all those listed in Section II may be present. The supplier has stated that these distillates do not require a carcinogen label as defined by OSHA 29 CFR 1910.1200.

History

Date of issue 01/29/2004.

Date of previous issue 01/27/2004.

Prepared by Product Stewardship

Notice to reader

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This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.

SAFETY DATA SHEET

Section 1. Identification

Product name Tribol 1710/320

SDS # 454400

Historic SDS #: 75861

Code 454400-US03

Relevant identified uses of the substance or mixture and uses advised against

Product use Gear lubricant .
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Manufacturer Castrol Industrial North America, Inc.
150 W. Warrenville Road
Naperville, IL 60563

Supplier Castrol Industrial North America, Inc.
150 W. Warrenville Road
Naperville, IL 60563
Product Information: +1-877-641-1600

EMERGENCY SPILL INFORMATION: 1 (800) 424-9300 CHEMTREC (USA)

Section 2. Hazards identification

OSHA/HCS status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms

Signal word Warning

Hazard statements May cause an allergic skin reaction.

Precautionary statements

Prevention Wear protective gloves. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.

Response IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage Not applicable.

Disposal Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified Defatting to the skin.

Section 3. Composition/information on ingredients

Poly-alpha-olefin. Highly refined mineral oil and additives.

Substance/mixture Mixture

Ingredient name	CAS number	%
Base oil - highly refined	Varies - See Key to abbreviations	≥10 - <25
Distillates (petroleum), hydrotreated, heavy paraffinic	64742-54-7	≥10 - <25
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	4259-15-8	≥1 - <3
tris(nonylphenyl) phosphite	26523-78-4	≥0.3 - <1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Inhalation If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention if adverse health effects persist or are severe.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treatment should in general be symptomatic and directed to relieving any effects.

Specific treatments No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media Do not use water jet.

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products Combustion products may include the following:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides

Section 5. Fire-fighting measures

Special protective actions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters
Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Special remarks on explosion hazards
None identified.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Contact emergency personnel.

For emergency responders
Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill
Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill
Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilled product. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures
Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Do not ingest. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used.

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Base oil - highly refined	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction **OSHA PEL (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 6/1993
Distillates (petroleum), hydrotreated, heavy paraffinic	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction **OSHA PEL (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 6/1993
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	None.
tris(nonylphenyl) phosphite	None.

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

Wear suitable gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Section 8. Exposure controls/personal protection

Body protection

Use of protective clothing is good industrial practice.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance

Physical state Liquid.

Color Clear Dark Amber.

Odor Mild.

Odor threshold Not available.

pH Not available.

Melting point Not available.

Boiling point Not available.

Flash point Open cup: 266°C (510.8°F) [Cleveland.]

Evaporation rate Not available.

Flammability (solid, gas) Not applicable. Based on - Physical state

Lower and upper explosive (flammable) limits Not available.

Vapor pressure Not available.

Vapor density Not available.

Density <1000 kg/m³ (<1 g/cm³) at 15.6°C

Solubility insoluble in water.

Partition coefficient: n-octanol/water Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Kinematic: 320 mm^2/s (320 cSt) at 40°C

Section 10. Stability and reactivity

Reactivity

No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability

The product is stable.

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid

Avoid all possible sources of ignition (spark or flame).

Section 10. Stability and reactivity

Incompatible materials Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated, heavy paraffinic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Skin contact May cause an allergic skin reaction.

Inhalation Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.

Ingestion No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact No specific data.

Skin contact Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Inhalation No specific data.

Ingestion No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 11. Toxicological information

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	**Special provisions** NOT REGULATED	-	-	-

Special precautions for user Not available.

Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification Immediate (acute) health hazard

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Zinc bis[O,O-bis(2-ethylhexyl)] bis (dithiophosphate)	4259-15-8	1.6 - 2
Supplier notification	Zinc bis[O,O-bis(2-ethylhexyl)] bis (dithiophosphate)	4259-15-8	1.6 - 2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts None of the components are listed.

New Jersey The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED); ZINC compounds

Pennsylvania The following components are listed: ZINC COMPOUNDS

California Prop. 65 **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
Toluene

Other regulations

Australia inventory (AICS) All components are listed or exempted.

Canada inventory All components are listed or exempted.

China inventory (IECSC) All components are listed or exempted.

Japan inventory (ENCS) All components are listed or exempted.

Korea inventory (KECI) All components are listed or exempted.

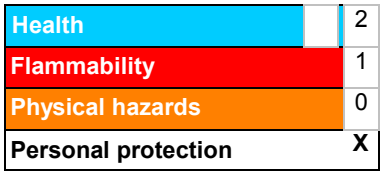
Philippines inventory (PICCS) At least one component is not listed.

Taiwan inventory (CSNN) All components are listed or exempted.

REACH Status For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

History

Date of issue/Date of revision 09/11/2015.

Date of previous issue 03/17/2015.

Key to abbreviations

ACGIH = American Conference of Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS Number = Chemical Abstracts Service Registry Number
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OEL = Occupational Exposure Limit
SDS = Safety Data Sheet
STEL = Short term exposure limit
TWA = Time weighted average
UN = United Nations
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.
Varies = may contain one or more of the following 101316-69-2, 101316-70-5, 101316-71-6, 101316-72-7, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-64-9, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1, 74869-22-0, 90669-74-2

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

AIRTECH
ADVANCED MATERIALS GROUP

MATERIAL SAFETY DATA SHEET

Wrightlon 3900 – Issue Date: August 1, 2013

SECTION I - PRODUCT IDENTIFICATION

Trade Name: **Wrightlon® 3900**
Product Class: Film manufactured from polyolefins
Supplier: **Airtech International, Inc.**
5700 Skylab Road
Huntington Beach, CA 92647
Telephone: 714-899-8100
Fax: 714-899-8179

Emergency Telephone: **800-424-9300**

Hazardous Ingredients: None

SECTION II – HAZARDS IDENTIFICATION

Emergency Overview:
This product is a plastic film. It is not considered hazardous under normal usage. It can release irritating and/or toxic vapors from overheating or if involved in a fire.

SECTION III – FIRST AID MEASURES

Skin:
If molten polymer contacts skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical attention for thermal burn.
Eyes:
None needed under normal usage. If material comes in contact with eye, flush eyes with water while holding eyelids apart.
Inhalation:
None needed under normal usage. Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician after significant exposure.

SECTION IV – FIRE FIGHTING MEASURES

Suitable extinguishing media:
Water, carbon dioxide, foam, dry chemical.
Special protective equipment:
In the event of fire, wear an approved positive pressure self-contained breathing apparatus and full protective clothing.

SECTION V – MEASURES TO BE TAKEN IN THE EVENT OF ACCIDENTAL SPILLAGE

Cleaning methods:
Collect and store into containers for disposal.

SECTION VI – HANDLING AND STORAGE

Handling:
Good industrial practice in housekeeping should be followed.
Storage:
Store in a cool, dry area, away from direct sunlight, at 20-25°C and 50-55% relative humidity. Keep original packaging tightly closed until use to prevent contamination.

SECTION VII – EXPOSURE CONTROLS / PERSONAL PROTECTION

Technical measures:
Overall room ventilation and/or local exhaust at points of fume generation.
Respiratory protection:
None under normal usage if proper ventilation.
Skin protection:
Protective gloves are required when handling hot material.
Eye and face protection:
Use safety glasses as a good general safety practice.
Hygiene measures:
Wash hands before handling food.
Control parameters:
None known.

SECTION VIII – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Thin pink film or sheet
Odor:	Plastic odor
pH:	Not applicable
Solubility in water:	Insoluble
Melting point:	155-165°C
Flash point (estimated):	> 343°C
Auto-ignition temperature (estimated):	> 500°C
Specific gravity:	0.90-0.905

SECTION IX – STABILITY AND REACTIVITY

Stability:
The preparation is stable at the storage conditions recommend per § 7 of the safety data sheet and under normal use conditions.
Conditions to avoid:
Heating above 220°C
Materials to avoid: None known.
Hazardous decomposition products:
Combustions may produce carbon monoxide, carbon dioxide, acids, ketones, aldehydes and other organic oxidation products.

SECTION X – TOXICOLOGICAL INFORMATION

No toxicological data on the product itself is available.

SECTION XI – ECOLOGICAL INFORMATION

No ecological data on the product itself is available. Aquatic toxicity is expected to be low based on insolubility in water.

SECTION XII – DISPOSAL CONSIDERATIONS

Like most thermoplastics, the product can be recycled. Where possible recycling is preferred to landfill or incineration. Disposal must be done in compliance with local regulations.

European waste code (CED): 070213

SECTION XIII – TRANSPORT INFORMATION

Not classified as hazardous under transport regulations (ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport).

SECTION XIV – REGULATORY INFORMATION

This product was classified in compliance with the directives 88/379/EC and their adaptations. Not subject to labeling according to EC directives.

USER'S RESPONSIBILITY

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, express or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the se thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.

CORPORATE HEADQUARTERS
5700 Skylab Road
Huntington Beach, CA 92647

PHONE: (714) 899-8100
FA : (714) 899-8179
Internet: http://www.airtechintl.com
e-mail: airtech airtechintl.com

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Ranbar Electrical Materials, Inc.
408 Manor-Harrison City Rd.
Harrison City, PA 15636

Vendor

Emergency:	Chemtrec 1-800-424-9300 CC 18429
Phone:	724-864-8200
Fax:	724-864-8232
Web:	www.ranbar.com

Product Name:	U2020 Ultimeg 2020 Base
Revision Date:	5/26/15
Version:	1
SDS Number:	U2020
Common Name:	Electrical Varnish
Product Code:	U2020
Product Use:	Electrical Coatings

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Skin corrosion/irritation, 2
Health, Serious Eye Damage/Eye Irritation, 2 A
Health, Respiratory or skin sensitization, 1 Skin
Environmental, Hazards to the aquatic environment - Chronic, 2

GHS Label elements, including precautionary statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

GHS Hazard Statements:

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H317 - May cause an allergic skin reaction
H411 - Toxic to aquatic life with long lasting effects

GHS Precautionary Statements:

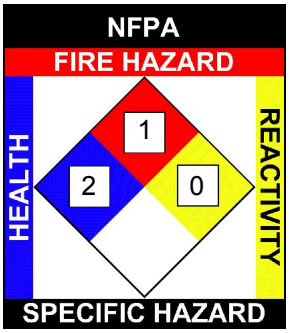
P261 - Avoid breathing mist/spray.
P273 - Avoid release to the environment.
P302+352 - IF ON SKIN: Wash with soap and water.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P264 - Wash skin thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P321 - Specific treatment (see information on this label).
P333+313 - If skin irritation or a rash occurs: Get medical advice/attention.
P337 - If eye irritation persists: Get medical advice/attention.

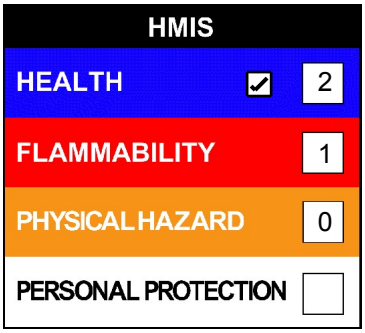
P362 - Take off contaminated clothing and wash before reuse.
P501 - Dispose of contents/container to approved disposal facility.

Hazards not otherwise classified (HNOC) or not covered by GHS

Route of Entry:	Eyes; Ingestion; Inhalation; Skin;
Target Organs:	Eyes; Skin; Respiratory system; Cental nervous system; Kidneys.
Inhalation:	Slightly irritating to the respiratory system.
Skin Contact:	If contact with heated liquid (140 F) treat for thermal burns. At room temperature, contact may cause mild skin irritation including redness, burning, and drying and cracking of skin.
Eye Contact:	Irritating to eyes. Heated material can cause thermal burns.
Ingestion:	Not expected to be harmful under normal conditions of use.

NFPA: Health = 2, Fire = 1, Reactivity = 0, Specific Hazard = n/a
HMIS III: Health = 2(Chronic), Fire = 1, Physical Hazard = 0
HMIS PPE: - Consult your supervisor for special instructions





3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas	%	Chemical Name
0	90-95%	Epoxy Resin Proprietary
68609-97-2	5-10%	Alkyl Glycidyl Ether

4 FIRST AID MEASURES

Inhalation:	If inhaled, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin Contact:	Wash with soap and water. Consult a physician if irritation continues.
Eye Contact:	Immediately flush with clear water for 15 minutes, including under eyelids. Consult a doctor.
Ingestion:	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 FIRE FIGHTING MEASURES

Flammability:	Not Flammable, however product will support combustion.
Flash Point:	>300 F (148 C)
Flash Point Method:	Closed Cup (Seta)
Autoignition Temp:	Not available.
LEL:	N/A
UEL:	N/A

Conditions to avoid: Heat, sparks, flame, red hot metal. Extinguishing Media: CO2, dry chemical, or universal aqueous film forming foam. Hazardous Combustion Products: Oxides of Carbon (CO, CO2), smoke and vapors. Unsuitable Extinguishing Media: Water Jet or water based fire extinguishers. Use water spray to cool fire exposed containers as contents can rupture violently from heat developed pressure.

Fireman should wear self contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Use personal protection recommended for this material.
Isolate hazard area and deny entry to unnecessary and unprotected personnel.
Keep out of drains, sewers, ditches, and waterways. Avoid use of water.
Released content may be contained with oil/solvent absorbant pads, booms, and or absorbants.
Avoid breathing vapors and ventilate area well.
Remove sources of ignition and use non-sparking equipment.
Soak up material with inert absorbant and place in safety containers for proper disposal.
Prohibited Cleanup Materials: Combustible absorbent materials such as sawdust, and use of equipment that may cause sparking.
Report releases that reach surface water or groundwater in any amount.
Spills, leaks and overfills from underground regulated storage tanks should also be reported.
Reportable quantities for spills onto the ground depend on site conditions such as type of soil and material spilled.
Consult your local regulatory agency if unsure of reporting requirements.

7 HANDLING AND STORAGE

Handling Precautions:	Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Consider normal working hygiene. Do not expose containers to open flame, excessive heat, or direct sunlight. Do not puncture or drop containers. Handle with care and avoid spillage on the floor (slippage). Keep away from sources of ignition. Keep material out of reach of children. Launder contaminated clothing. Use approved containers only.
Storage Requirements:	Keep containers tightly closed and stored in a well ventilated area.

8 E POSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	Use with adequate ventilation. General ventilation (typically 10 air changes per hour) should be used. Rates should be matched to conditions. Local exhaust ventilation or an enclosed handling system may be necessary to control air contamination below that of the lowest OEL.
Personal Protective Equipment:	HMIS PP, Consult your supervisor for special instructions Chemical resistant gloves; Chemical safety glasses; NIOSH approved respirator; Organic vapor respirator with dust, mist, and fume filters;

Alkyl Glycidyl Ether (68609-97-2) [5-10%] : no data available

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear liquid.		
Physical State:	Liquid	Odor:	Epoxide type.
Spec Grav./Density:	Specific Gravity: 1.14 g/ml	Solubility:	Slightly soluble in water.
Viscosity:	Mobile liquid.	Percent Volatile:	0 %
Boiling Point:	>390 F (199 C)	Freezing/Melting Pt.:	Not available.
Flammability:	Not Flammable.	Flash Point:	>300 F (148 C)
Partition Coefficient:	Not available.	Vapor Density:	N/A
Vapor Pressure:	N/A	VOC:	0 %
pH:	Not available.	Auto-Ignition Temp:	Not available
Evap. Rate:	N/A		
Decomp Temp:	Not available.		

Weight per Gallon: 9.51 lbs/gal

10 STABILITY AND REACTIVITY

Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Sources of ignition. Heat, sparks, flame, red hot metal.
Materials to Avoid:	Strong Oxidizing Agents, acids, amines, bases.
Hazardous Decomposition:	Oxides of carbon (C0, CO2).
Hazardous Polymerization:	Will not occur.

11 TO ICOLOGICAL INFORMATION

Alkyl Glycidyl Ether (68609-97-2) [5-10%]

Information on toxicological effects

Acute toxicity:
Oral LD50 no data available
Inhalation LC50
Dermal LD50
Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: May cause sensitization by skin contact.

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Dermatitis

Synergistic effects: no data available

Additional Information:

RTECS: RR0562500

12 ECOLOGICAL INFORMATION

Alkyl Glycidyl Ether (68609-97-2) [5-10%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

13 DISPOSAL CONSIDERATIONS

Hazard characteristics and waste stream classification can change with product use and location. It is the resposibility of the user to determine the proper storage, transportation, treatment, and/or disposal methodologies for spent materials and residues at the time of disposition. All waste material must be disposed of in compliance with respective national, federal, state, and local regulations. Consult with your local landfill to determine if empty small containers can be disposed of in regular trash pickup. Containers holding flammable or combustible liquid residues and vapors may be considered dangerous. Do not pressurize, weld, braze, cut, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity or other sources of ignition. Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner. For disposal of large containers (10 gal or larger), or for containers not suitable for landfill, consult a local drum reconditioner. All other containers should be disposed of in accordance with governmental regulations.

14 TRANSPORT INFORMATION

DOT Shipping Information:

United States (Domestic):

Bulk Quantities (119 gallons (450 liters)or greater):
Non-Regulated Liquid

Drum Size Quantities (less that 119 gallons (450 liters)):
Non-Regulated Liquid

International and IATA Shipments:

Bulk:
UN3082, Environmentally Hazardous Substance Liquid, NOS, 9, PGIII (Bisphenol A and Epoxy Resin)

Drums:
UN3082, Environmentally Hazardous Substance Liquid, NOS, 9, PGIII (Bisphenol A and Epoxy Resin)

Not a Marine Pollutant

15 REGULATORY INFORMATION

Component (CAS) [%] - CODES

Epoxy Resin Proprietary (0) 90-95%] TSCA, DSL

Alkyl Glycidyl Ether (68609-97-2) [5-10%] TSCA, DSL

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Regulatory CODE Descriptions
-----------------------------------------------------------------
TSCA = Toxic Substances Control Act
DSL = Canadian Domestic Substances List
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16 OTHER INFORMATION

Disclaimer:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user s intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Ranbar Electrical Materials, Inc.
408 Manor-Harrison City Rd.
Harrison City, PA 15636

Vendor

Emergency:	Chemtrec 1-800-424-9300 CC 18429
Phone:	724-864-8200
Fax:	724-864-8232
Web:	www.ranbar.com

Product Name:	U2020 Ultimeg U2020 Hardener
Revision Date:	5/26/15
Version:	1
SDS Number:	U2020 Hardener
Common Name:	Epoxy Hardener
Product Code:	U2020 Hardener
Product Use:	Paints and Varnishes

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

- Health, Serious Eye Damage/Eye Irritation, 1
- Health, Skin corrosion/irritation, 1 B
- Health, Acute toxicity, 1 Inhalation
- Environmental, Hazards to the aquatic environment - Chronic, 1
- Health, Respiratory or skin sensitization, 1 Skin
- Health, Reproductive toxicity, 2
- Health, Specific target organ toxicity - Single exposure, 3
- Health, Acute toxicity, 4 Dermal
- Health, Acute toxicity, 4 Oral

GHS Label elements, including precautionary statements

GHS Signal Word: DANGER

GHS Hazard Pictograms:

GHS Hazard Statements:

- H318 - Causes serious eye damage
- H314 - Causes severe skin burns and eye damage
- H330 - Fatal if inhaled
- H410 - Very toxic to aquatic life with long lasting effects
- H317 - May cause an allergic skin reaction
- H361 - Suspected of damaging fertility or the unborn child
- H336 - May cause drowsiness or dizziness
- H312 - Harmful in contact with skin
- H302 - Harmful if swallowed

GHS Precautionary Statements:

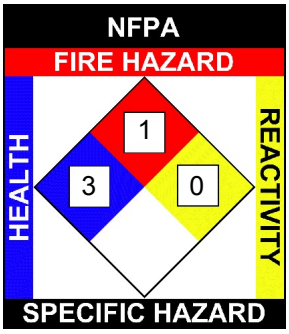
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

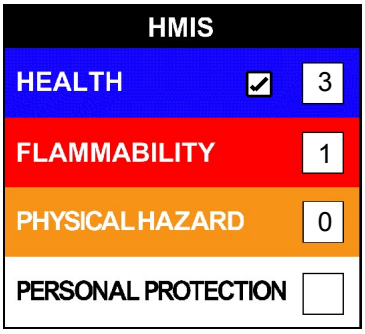
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - Wear respiratory protection.
P301+312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P333+313 - If skin irritation or a rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.
P501 - Dispose of contents/container to approved disposal facility.

Hazards not otherwise classified (HNOC) or not covered by GHS

Route of Entry:	Eyes; Ingestion; Inhalation; Skin;
Target Organs:	Eyes; Skin; Respiratory system; Cental nervous system; Kidneys.
Inhalation:	May cause severe irritation to respiratory tract, with coughing, nausea and sore throat. Chemicals of this type may cause sensitization upon prolonged or repeated exposure.
Skin Contact:	Corrosive. Chemicals of this type may cause sensitization upon prolonged or repeated exposure. Material may be absorbed through the skin.
Eye Contact:	Corrosive to eyes. May cause permanent damage and blindness. Vapors can cause a non-permanent vision problem of seeing "halos" or a "blue haze."
Ingestion:	Corrosive to gastrointestinal tract.

NFPA: Health = 3, Fire = 1, Reactivity = 0, Specific Hazard = n/a
HMIS III: Health = 3(Chronic), Fire = 1, Physical Hazard = 0
HMIS PPE: - Consult your supervisor for special instructions





3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas	%	Chemical Name
4067-16-7	36-50%	3,6,9,12-Tetraazatetradecane-1,14-diamine
80-05-7	1-5%	4,4 -Isopropylidenediphenol
111-40-0	10-30%	Diethylene triamine
25154-52-3	1-5%	Nonylphenol
2855-13-2	36-50%	Isophoronediamine

4 FIRST AID MEASURES

Inhalation: If inhaled, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin Contact: Take off contimated clothing and shoes immediately. Wash with soap and water. Consult a physician.

Eye Contact:	Immediately flush with clear water for 15 minutes, including under eyelids. Continue rinsing eyes during transport to hospital. Consult a doctor.
Ingestion:	Do not induce vomiting. Never give anything by mouth to an unconsious person. Rinse mouth with water. Consult a physician.

5 FIRE FIGHTING MEASURES

Flammability:	Not Flammable.
Flash Point:	>200 F (93 C)
Flash Point Method:	Closed Cup (Seta)
Autoignition Temp:	Not available.
LEL:	N/A
UEL:	N/A

Conditions to avoid: Heat, sparks, flame, red hot metal. Extinguishing Media: CO2, dry chemical, or universal aqueous film forming foam. Hazardous Combustion Products: Oxides of Carbon (CO, CO2), smoke and vapors. Unsuitable Extinguishing Media: Water Jet or water based fire extinguishers. Use water spray to cool fire exposed containers as contents can rupture violently from heat developed pressure. Fireman should wear self contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Use personal protection recommended for this material.
Isolate hazard area and deny entry to unnecessary and unprotected personnel.
Keep out of drains, sewers, ditches, and waterways. Avoid use of water.
Released content may be contained with oil/solvent absorbant pads, booms, and or absorbants.
Avoid breathing vapors and ventilate area well.
Soak up material with inert absorbant and place in safety containers for proper disposal.
Report releases that reach surface water or groundwater in any amount.
Spills, leaks and overfills from underground regulated storage tanks should also be reported.
Reportable quantities for spills onto the ground depend on site conditions such as type of soil and material spilled.
Consult your local regulatory agency if unsure of reporting requirements.

7 HANDLING AND STORAGE

Handling Precautions:	Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Consider normal working hygiene. Do not expose containers to open flame, excessive heat, or direct sunlight. Do not puncture or drop containers. Handle with care and avoid spillage on the floor (slippage). Keep away from sources of ignition. Keep material out of reach of children. Launder contaminated clothing. Use approved containers only.
Storage Requirements:	Use appropriate grounding when filling and transfering containers. Keep containers tightly closed and stored in a well ventilated area.

8 E POSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	Use with adequate ventilation. General ventilation (typically 10 air changes per hour) should be used. Rates should be matched to conditions. Local exhaust ventilation or an enclosed handling system may be necessary to control air contamination below that of the lowest OEL.
Personal Protective Equipment:	HMIS PP, Consult your supervisor for special instructions Chemical resistant gloves; Chemical safety glasses; NIOSH approved respirator; Organic vapor respirator with dust, mist, and fume filters;

3,6,9,12-Tetraazatetradecane-1,14-diamine (4067-16-7) [36-50%] : no data available

4,4 -Isopropylidenediphenol (80-05-7) [1-5%] : no data available

Diethylene triamine (111-40-0) [10-30%]

Components with workplace control parameters

TWA 1 ppm USA. ACGIH Threshold Limit Values (TLV)
Eye & Upper Respiratory Tract irritation Danger of cutaneous absorption

TWA 1 ppm USA. NIOSH Recommended Exposure Limits
4 mg/m3
Potential for dermal absorption

TWA 1 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants -
4 mg/m3 1910.1000

Isophoronediamine (2855-13-2) [36-50%] : no data available

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colorless liquid.		
Physical State:	Liquid	Odor:	Ammoniacal
Spec Grav./Density:	Specific Gravity: 0.98 g/ml	Solubility:	Miscible
Viscosity:	Comparable to water.	Percent Volatile:	0%
Boiling Point:	>392 F (200 C)	Freezing/Melting Pt.:	Not available.
Flammability:	Not Flammable.	Flash Point:	> 200 F (93 C)
Partition Coefficient:	Not available.	Vapor Density:	13.3 mPa
Vapor Pressure:	0.02 mbar at 20C	VOC:	0%
pH:	11.5-12	Auto-Ignition Temp:	Not available
Evap. Rate:	N/A		
Decomp Temp:	Not available.		

Weight per Gallon: 8.17 lbs/gal

10 STABILITY AND REACTIVITY

Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Sources of ignition. Heat, sparks, flame, red hot metal.
Materials to Avoid:	Strong Oxidizing Agents, acids
Hazardous Decomposition:	Oxides of carbon (C0, CO2).
Hazardous Polymerization:	Will not occur.

11 TO ICOLOGICAL INFORMATION

3,6,9,12-Tetraazatetradecane-1,14-diamine (4067-16-7) [36-50%]

Information on toxicological effects

Acute toxicity:

LD50 Oral - rat - 1,600 mg/kg
Inhalation: no data available

LD50 Dermal - rabbit - 1,465.4 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation: Skin - rabbit Result: Causes burns.

(OECD Test Guideline 404)

Serious eye damage/eye irritation: Eyes - rabbit Result: Corrosive to eyes

Respiratory or skin sensitisation: Buehler Test - guinea pig May cause sensitisation by skin contact. (OECD Test Guideline 406)

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information:

RTECS: RZ2680000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4,4 -Isopropylidenediphenol (80-05-7) [1-5%]

Information on toxicological effects

Acute toxicity:
Oral LD50 LD50 Oral - rat - 5,000 mg/kg
LD50 Oral - rat - male and female - > 2,000 - 5,000 mg/kg
Inhalation LC50 Dermal LD50
LD50 Dermal - rabbit - 3,000 mg/kg
Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation: Eyes - rabbit - Severe eye irritation - 24 h

Respiratory or skin sensitisation: May cause allergic skin reaction.

Germ cell mutagenicity: no data available

Carcinogenicity:
This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Teratogenicity: Suspected human reproductive toxicant

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional Information:

RTECS: SL6300000

Diethylene triamine (111-40-0) [10-30%]

Information on toxicological effects

Acute toxicity:
Oral LD50 LD50 Oral - rat - 1,080 mg/kg Remarks: Behavioral:Convulsions or effect on seizure threshold.
Inhalation LC50 LC50 Inhalation - rat - 4 h - 0.3 mg/l Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema.
Dermal LD50 LD50 Dermal - rabbit - 1,090 mg/kg
Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - Open irritation test

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

May cause allergic skin reaction.

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by

OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion Harmful if swallowed. Skin Harmful if absorbed through skin. Causes skin burns. Eyes Causes eye burns.

Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects: no data available

Additional Information:

RTECS: IE1225000

Isophoronediamine (2855-13-2) [36-50%]

Information on toxicological effects

Acute toxicity:
Oral LD50 LD50 Oral - rat - 1,030 mg/kg
Inhalation LC50 no data available
Dermal LD50 Other information on acute toxicity

Skin corrosion/irritation: Skin - rabbit - Skin irritation

Serious eye damage/eye irritation: Eyes - rabbit - Corrosive to eyes

Respiratory or skin sensitisation: May cause allergic skin reaction.

Causes sensitisation.

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicit

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available
Aspiration hazar

Potential health effects: Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion Harmful if swallowed. Skin Harmful if absorbed through skin. Causes skin burns. Eyes Causes eye burns.

Synergistic effects: no data available

Additional Informatio RTECS: GV5020833

12 ECOLOGICAL INFORMATION

3,6,9,12-Tetraazatetradecane-1,14-diamine (4067-16-7) [36-50%]

Information on ecological effects

Toxicity:
Toxicity to fish LC50 - Poecilia reticulata (guppy) - 0.18 mg/l - 96.0 h.
NOEC - Poecilia reticulata (guppy) - 0.32 mg/l - 96 h

Persistence and degradability: Biodegradability Result: - rapidly biodegradable

Bioaccumulative potential: no data available

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

4,4 -Isopropylidenediphenol (80-05-7) [1-5%]

Information on ecological effects

Toxicity:
Toxicity to fish flow-through test LC50 - Cyprinodon variegatus (sheepshead minnow) - 11 mg/l - 96 h.
Method: OECD Test Guideline 203
Toxicity to daphnia static test EC50 - Daphnia magna (Water flea) - 10.2 mg/l - 48 h.
and other aquatic invertebrates
Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata (green algae) - 2.73 - 3.1 mg/l - 96 h.

Persistence and degradability: Biodegradability aerobic Result: 89 % - Readily biodegradable.

Bioaccumulative potential: Bioaccumulation Cyprinus carpio (Carp) - 42 d Bioconcentration factor (BCF): 20 - 67

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unp rofessional handling or disposal.

Toxic to aquatic life.
no data available

Diethylene triamine (111-40-0) [10-30%]

Information on ecological effects

Toxicity:
Toxicity to fish LC50 - Poecilia reticulata (guppy) - 1,014 mg/l - 96 h.

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Isophoronediamine (2855-13-2) [36-50%]

Information on ecological effects

Toxicity:
Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - 110 mg/l - 96.0 h.
Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 17.4 mg/l - 48 h.
and other aquatic invertebrates
Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 37 mg/l - 72 h.

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

13 DISPOSAL CONSIDERATIONS

Hazard characteristics and waste stream classification can change with product use and location. It is the resposibility of the user to determine the proper storage, transportation, treatment, and/or disposal methodologies for spent materials and residues at the time of disposition. All waste material must be disposed of in compliance with respective national, federal, state, and local regulations. Consult with your local landfill to determine if empty small containers can be disposed of in regular trash pickup. Containers holding flammable or combustible liquid residues and vapors may be considered dangerous. Do not pressurize, weld, braze, cut, solder, drill, grind or expose

such containers to heat, flame, sparks, static electricity or other sources of ignition. Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner. For disposal of large containers (10 gal or larger), or for containers not suitable for landfill, consult a local drum reconditioner. All other containers should be disposed of in accordance with governmental regulations.

14 TRANSPORT INFORMATION

UN2735, Amines, liquid, corrosive, n.o.s, or Polyamines, liquid, corrosive, n.o.s., 8, PGIII, (Isophoronediamine, 3,6,9,12-Tetraazatetradecane-1,14-diamine)

DOT Shipping Information:

United States (Domestic)and International:

Bulk Quantities (119 gallons (450 liters)or greater):
UN2735, Amines, liquid, corrosive, NOS, (Isophoronediamine, 3,6,9,12-Tetraazatetradecane-1,14-diamine), 8, PGIII (Marine Pollutant)

Drum Size Quantities (less that 119 gallons (450 liters)):
UN2735, Amines, liquid, corrosive, NOS, (Isophoronediamine, 3,6,9,12-Tetraazatetradecane-1,14-diamine), 8, PGIII (Marine Pollutant)

15 REGULATORY INFORMATION

Component (CAS) [%] - CODES

3,6,9,12-Tetraazatetradecane-1,14-diamine (4067-16-7) [36-50%] TSCA, DSL

4,4 -Isopropylidenediphenol (80-05-7) [1-5%] HAP, MASS, NJHS, PA, SARA313, TSCA, T AIR, DSL

Diethylene triamine (111-40-0) [10-30%] MASS, OSHAWAC, PA, TSCA, T AIR, DSL

Nonylphenol (25154-52-3) [1-5%] HAP, MASS, PA, TSCA, DSL

Isophoronediamine (2855-13-2) [36-50%] TSCA, DSL

Regulatory CODE Descriptions

TSCA = Toxic Substances Control Act
HAP = Hazardous Air Pollutants
MASS = MA Massachusetts Hazardous Substances List
NJHS = NJ Right-to-Know Hazardous Substances
PA = PA Right-To-Know List of Hazardous Substances
SARA313 = SARA 313 Title III Toxic Chemicals
TXAIR = TX Air Contaminants with Health Effects Screening Level
OSHAWAC = OSHA Workplace Air Contaminants
DSL = Canadian Domestic Substances List

16 OTHER INFORMATION

Disclaimer:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user s intended purposes or for the consequences of its use. Each individual

should make a determination as to the suitability of the information for their particular purpose(s).

MATERIAL SAFETY DATA SHEET

VIP PS TAPE

1. PRODUCT AND COMPANY NAME

PRODUCT NAME: VIP PS TAPE

DESCRIPTION: Pressure Sensitive Tape

MANUFACTURER: Richmond Aircraft Products
12801 Ann Street
Santa Fe Springs, CA 90670

FOR MORE INFORMATION CALL: 562-906-3300
IN CASE OF EMERGENCY CALL: 562-906-3300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS #	% of Ingredient
Polyethlene terphalate	N/A	60%
Colorants	N/A	40%

3. HAZARD IDENTIFICATION

Tape products are exempted as articles from the notification requirements of the OSHA Hazard Communication standard under 29 CRF 1910.1200(b) (6) (iv). This Material Safety Data Sheet and the component information are made available as a service to our customers. None of the components are known to be hazardous.

POTENTIAL HEALTH HAZARDS

Route of Entry: N/A
Target Organs: N/A
Inhalation: None expected. However, if the tape is to be slit, it seems reasonable to treat the slitter dust as a nuisance particulate.
Skin Contact: Molten material will produce thermal burns.
Eye Contact: None expected
Ingestion: None expected

4. FIRST AID MEASURES

Inhalation: Not an expected route of entry.

Skin Contact: If burned by molten material, cool as quickly as possible with cold water and see a physician for treatment of the burn. Note to Physicians: burns should be treated as thermal burns. The product is a combination of polymers of low toxicity, therefore, there is no urgent need to remove them from the skin because of concern about toxicity.

Eye Contact: Not an expected route of entry.

Ingestion: Not an expected route of entry.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point (Method Used): 274C (525F)

LEL: N/A

UEL: N/A

Extinguishing Method: Water spray, dry chemicals, CO2

Special Fire Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Refer to NFPA Pamphlet No. 654 “Prevention of Fire and Dust Explosion in the Chemical, Dye, Pharmaceutical, and Plastics Industries”, if this material is to be reduced or collected as a powder. Incomplete burning can produce carbon monoxide and/or carbon dioxide and other harmful products.

6. ACCIDENTAL RELEASE MEASURES

Always wear recommended personal protective equipment. Collect and place in a solid waste container.

MATERIAL SAFETY DATA SHEET

7. HANDLING AND STORAGE

Handling Precautions: Use normal personal hygiene and good housekeeping

Storage Requirements: Store in a cool, dry area, away from direct heat or sunlight

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: General ventilation is good industrial practice.
Protective Equipment: If the tape is to be slit, protection against nuisance dusts is recommended.
Exposure Guideline/Other: None

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Transparent blue coating on clear film
Physical Status:	Solid
Odor:	No odor
pH:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A
Boiling Point:	N/A
Softening Point:	400F (205C)
Solubility:	Negligible, <0.1%
Spec. Grav./Density:	1.32

10. STABILITY AND REACTIVITY

Stability:	Normally Stable
Conditions to avoid:	None identified
Materials to avoid (Incompatibility):	None identified
Hazardous Decomposition Products:	None identified. Incomplete burning can produce carbon monoxide and/or carbon dioxide and other harmful products.
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Immediate (Acute) Effects:	Not determined
Delayed (Sub-chronic and chronic) Effects:	None known
Other Data:	No component of this product at levels greater than 0.1% is identified as a carcinogen by the ACGIH, IARC, NTP, or OSHA

12. ECOLOGICAL INFORMATION

These products have not been tested for environmental effects. However, because of their very low solubility, the following statements regarding the expected environmental impact are believed to be valid:

These products are expected to cause little oxygen depletion in aquatic systems. They are expected to have a low potential to affect aquatic organisms, secondary waste treatment micro-organisms, and the germination and growth of plants. They are expected to be resistant to biodegradation but are unlikely to bioconcentrate. Although in a spill situation these products may be esthetically unpleasant, they are not expected to have any adverse environmental impact.

13. DISPOSAL CONSIDERATIONS

Dispose of in compliance with Federal, state and local government regulations. Usually is considered an inert packaging material that can be recycled or landfilled.

14. TRANSPORT INFORMATION

US DOT Hazard Class: Not regulated
US DOT ID Number: Not applicable

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

This product is not regulated as a hazardous substance

16. OTHER INFORMATION

Current Issue Date: 10/05/2010
Previous Issue Date: 04/25/2008

Safety Data Sheet

1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol ***NOT FOR SALE IN CALIFORNIA*** **Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion** **Restrictions on Use: None identified** **SDS Date Of Preparation: 09/01/2014**	**Manufacturer: WD-40 Company** **Address: 1061 Cudahy Place (92110)** **P.O. Box 80607** **San Diego, California, USA** **92138 –0607** **Telephone:** **Emergency only: 1-888-324-7596 (PROSAR)** **Information: 1-888-324-7596** **Chemical Spills: 1-800-424-9300 (Chemtrec)** **1-703-527-3887 (International Calls)**

2 – Hazards Identification

Hazcom 2012/GHS Classification:
Flammable Aerosol Category 1
Gas Under Pressure: Compressed Gas
Aspiration Toxicity Category 1

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:

DANGER
Extremely Flammable Aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.
Prevention
Keep away from heat, sparks, open flames, hot surfaces – No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
Storage
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.
Disposal
Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3

			Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	35	Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1
Carbon Dioxide	124-38-9	2-3	Simple Asphyxiant Gas Under Pressure, Compressed Gas

Note: The exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Signs and Symptoms of Exposure: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.
Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Specific Hazards Arising from the Chemical: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)

The Following Controls are Recommended for Normal Consumer Use of this Product
Appropriate Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray away from your face.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Closed Cup (concentrate)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	2.79-2.96 cSt 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions
Chemical Stability: Stable
Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:
The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms
Persistence and Degradability: Component are readily biodegradable.
Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.
Mobility in Soil: No data available
Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information_

DOT Surface Shipping Description:
UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)
IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY
ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:
CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
SARA TITLE III:
Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III
Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.
VOC Regulations: This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.
Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
Canadian WHMIS Classification: Class A (Compressed gas), Class B-5 (Flammable Aerosol)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

Revision Date: September 1, 2015 Supersedes: July 20, 2014

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED By: I. Kowalski Regulatory Affairs Dept.

5049000/No.0015206

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No 453/2010

1. Identification of the substance/ preparation and of the company/ undertaking

1.1. **Product identifiers:**

Article no. (manufacturer / supplier): 405-V
Identification of the substance or preparation: Wemaplast 405-V
verschiedene RAL-Töne

1.2. **Relevant identified uses of the substance or mixture and uses advised against**

1.3. **Details of the supplier of the safety data sheet**

Supplier (manufacturer/importer/downstream user/distributor):
WEMA Coating Systems GmbH
Gwinnerstraße 46 Telephone: +49(0)69/4089869-0
D-60388 Frankfurt (Main) Telefax: +49(0)69/4089869-9

Dept. responsible for information:
E-mail (competent person):
info@wema-coating-systems.de

1.4. **Emergency telephone number**
Emergency telephone: +49(0)69/4089869-0
Only available during office hours.

2. Hazards identification

2.1. **Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC

The preparation is dangerous in the sense of Directive 1999/45/EC.

R10 Flammable.
R67 Vapours may cause drowsiness and dizziness.

2.2. **Label elements**

Labelling (67/548/EEC or 1999/45/EC)

Hazard Statements:

10 Flammable.
67 Vapours may cause drowsiness and dizziness.

Safety precautions:

38 In case of insufficient ventilation, wear suitable respiratory equipment.
51 Use only in well-ventilated areas.
23 Do not breathe vapour.

contains:

n.a.

Special provisions concerning the labelling of certain mixtures

99 Contains Fettsäuren, C18-unges., Dimere, Reaktionsprodukte mit N, N_Dimethyl-1,3- propamediamin und 1,3- Propanediamin. May produce an allergic reaction.

2.3. **Other hazards**

3. Composition/ Information on ingredients

3.2. **Mixtures**

chemical characterization (preparation)

Description:

Hazardous ingredients:

Classification according to Directive 67/548/EEC or 1999/45/EC

EC No: CAS No.: INDEX no.:	REACH No: Identification of the hazard: classification:	% by weight Remark:
204-658-1 123-86-4 607-025-00-1	 n-butyl acetate R10 / R66 / R67	12,5 - 20
215-535-7 1330-20-7	 xylene, mixture of isomers	5 - 10

601-022-00-9	R10 / Xn; R20/21 / Xi; R38	
202-849-4 100-41-4 601-023-00-4	ethylbenzene F; R11 / Xn; R20	2,5 - 5
265-199-0 64742-95-6 649-356-00-4	Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified Xn; R65	2,5 - 5
605-296-0 162627-17-0	Fettsäuren, C18-unges., Dimere, Reaktionsprodukte mit N, N_Dimethyl-1,3-propamediamin und 1,3- Propanediamin R43	< 0,5
265-199-0 64742-95-6 649-356-00-4	Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified R10 / Xi; R37 / N; R51-53 / Xn; R65	< 0,5

Additional information
Full text of R-phrases: see section 16.

4. First-aid measures

4.1. **Description of first aid measures:**

General information:

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in unconscious position and seek medical advice.

After inhalation
Move victim to fresh air. Put victim at rest and keep warm. In case of irregular breathing or respiratory arrest provide artificial respiration.

In case of skin contact:
Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

In case of eye contact:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice.

After ingestion:
If swallowed, rinse mouth with water (only if the person is conscious). Consult physician immediately. Keep victim calm. Do not induce vomiting.

4.2. **Most important symptoms and effects, both acute and delayed:**

4.3. **Indication of any immediate medical attention and special treatment needed**

5. Firefighting measures

5.1. **Extinguishing media**

Suitable extinguishing media:
alcohol resistant foam, Carbon dioxide, Powder, spray mist, (water)

Extinguishing media which must not be used for safety reasons:
Strong water jet

5.2. **Special hazards arising from the substance or mixture**
Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

5.3. **Advice for firefighters**
Provide a conveniently located respiratory protective device. Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous. Cool closed containers that are near the source of the fire.

6. Accidental release measures

6.1. **Personal precautions, protective equipment and emergency procedures**
Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

6.2. **Environmental measures**

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. **Methods and material for containment and cleaning up**

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see chapter 13). Clean using cleansing agents. Do not use solvents.

6.4. **Reference to other sections**

Observe protective provisions (see chapter 7 and 8).

7. Handling and storage

7.1. **Precautions for safe handling**

Advices on safe handling

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values. Only use the material in places where open light, fire and other flammable sources can be kept away. Electrical equipment must be protected meeting the accepted standard. Product may become electrostatically charged. Provide earthing of containers, equipment, pumps and ventilation facilities. Anti-static clothing including shoes are recommended. Floors must be electrically conductive. Keep away from heat sources, sparks and open flames. Use only spark proof tools. Avoid contact with skin, eyes and clothes. Do not inhale dusts, particulates and spray mist when using this preparation. Avoid respiration of swarf. When using do not eat, drink or smoke. Personal protective equipment: refer to chapter 8. Do not empty containers with pressure - no pressure vessel! Always keep in containers that correspond to the material of the original container. Follow the legal protection and safety regulations.

Precautions against fire and explosion:

Vapours are heavier than air and will spread at floor level. Vapours form explosive mixtures with air.

7.2. **Conditions for safe storage, including any incompatibilities**

Requirements for storerooms and containers:

Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

Hints on joint storage

Keep away from strongly acidic and alkaline materials as well as oxidizers.

Further information on storage conditions

Take care of instructions on label. Store in a well-ventilated and dry room at temperatures between 15 °C and 30 °C. Protect from heat and direct sunlight. Keep container tightly closed. Remove all sources of ignition. Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

7.3. **Specific end use(s)**

Observe technical data sheet. Observe instructions for use.

8. Exposure controls / Personal protection

8.1. **Control parameters**

EC No: / CAS No.:	Description:	type:	Limit value STEL (EC)	Limit value TWA (EC)	unit
xylene, mixture of isomers	215-535-7		441	220	mg/m3
	1330-20-7	EN	100	50	ppm
ethylbenzene	202-849-4		552	441	mg/m3
	100-41-4	EN	125	100	ppm
n-butyl acetate	204-658-1		966	724	mg/m3
	123-86-4	EN	200	150	ppm

Additional information

TWA (EC): Occupational exposure limit value
STEL (EC): Short term occupational exposure limit value

8.2. **Exposure controls**

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

Occupational exposure controls:

Respiratory protection:

If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must

be used. Use only respiratory protection equipment with CE-symbol including four digit test number.

Hand protection:
For prolonged or repeated handling the following glove material must be used:
Thickness of the glove material: > 0,4 mm ; penetration time (maximum wearing period): > 480 min.
Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles: DIN EN 374
Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye protection:
Wear closely fitting protective glasses in case of splashes.

Body protection:
Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

Protective measures:
After contact clean skin thoroughly with water and soap oder use appropriate cleanser.

Environmental exposure controls
Do not allow to enter into surface water or drains. refer to chapter 7. No further action is necessary.

9. Physical and chemical properties

9.1. **information on basic physical and chemical properties**

Appearance:	
Physical state:	liquid
Colour	refer to label
Odour:	characteristic

Safety relevant basis data		unit	Method	Remark:
Flash point:	28	°C	DIN 53213	
Ignition temperature (AIT):	370	°C		
lower explosion limit:	1,1	Vol-%		
Upper explosion limit:	7,5	Vol-%		
Vapour pressure at 20 °C:	5,05	mbar		
density at 20 °C:	1,37	g/cm³		
Water solubility (g/l):	insoluble			
pH at 20 °C:	-			
Viscosity at 20 °C	80 s 4 mm		DIN 53211	
Solvent separation test (%):	< 3	%		
Solid content (%):	72	% by weight		
solvent content:				
Organic solvents:	28	% by weight		
Water:	0	% by weight		

9.2. **Other information:**

10. Stability and reactivity

10.1. **Reactivity**

10.2. **Chemical stability**
Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to chapter 7.

10.3. **Possibility of hazardous reactions**
Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**
Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. **Incompatible materials**

10.6. **Hazardous decomposition products**
Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

11. Toxicological information

No data on preparation itself available.

11.1. **Information on toxicological effects**

Acute toxicity

Toxicological data are not available.

Irritant and corrosive effects

Toxicological data are not available.

Sensitisation

Toxicological data are not available.

Specific target organ toxicity

Toxicological data are not available.

Aspiration hazard:

Toxicological data are not available.

Practical experience

Other observations:
Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: headache, dizziness, fatigue, amyosthenia, dizziness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

Overall Assessment on CMR properties:

The components in this formulation do not meet the criteria for classification as CMR category 1 or 2.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified according to the toxicological dangers.See chapters 2 and 15 for details.

12. Ecological information

Overall evaluation:
There is no information available on the preparation itself .
Do not allow to enter into surface water or drains.

12.1. **Toxicity**
Toxicological data are not available.

12.2. **Persistence and degradability**
Toxicological data are not available.

12.3. **Bioaccumulative potential**
Toxicological data are not available.

12.4. **Mobility in soil**
Toxicological data are not available.

12.5. **Results of PBT and vPvB assessment**

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. **Other adverse effects**

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment.

13. Disposal considerations

13.1. **Waste treatment methods**

Appropriate disposal / Product
Recommendation:
Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

Control report for waste code/ waste marking according to EAKV:

080111	waste paint and varnish containing organic solvents or other dangerous substances

Contaminated packaging:
Recommendation:
Cleaned containers may be recycled. Vessels not properly emptied are special waste.

14. Transport information

14.1. **UN-No.:**

Land transport (ADR/RID):	1263
Sea transport (IMDG):	n.a.

14.2. **UN proper shipping name**

Land transport (ADR/RID):	Paint
Sea transport (IMDG):	Transport in accordance with the provisions of paragraph 2.3.2.5 of the IMDG Code.
Air transport (ICAO-TI / IATA-DGR):	Paint

14.3. **Transport hazard class(es)**

Land transport (ADR/RID):	KEINE GÜTER DER KLASSE 3 bei Gebinden > 450 l Klasse 3
Sea transport (IMDG)	n.a.
Air transport (ICAO-TI / IATA-DGR)	3

14.4. **Packing Group:**

Land transport (ADR/RID):	III
Sea transport (IMDG):	n.a.
for packages > 30 litres:	III
Air transport (ICAO-TI / IATA-DGR):	III

14.5. **Environmental hazards:**

Land transport (ADR/RID)	n.a.
Marine pollutant:	n.a.

14.6. **Special precautions for user**

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.
Advices on safe handling: see parts 6 - 8

Further remarks:

Land transport (ADR/RID)

Tunnel restriction code: D/E

Sea transport (IMDG)

EmS-No.: n.a.

14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

15. Regulatory information

15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU legislation

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline).

VOC-value (in g/l) ISO 11890-2:	648
VOC-value (in g/l) ASTM D 2369:	648

National regulations

Informations on working limitations:
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

15.2. **Chemical Safety Assessment**
Chemical safety assessments for substances in this preparation were not carried out.

16. Other information

Wording of the r-phrases under paragraph 3:

R10		Flammable.
Xn; R20/21	Harmful	Harmful by inhalation and in contact with skin.
Xi; R38	Irritant	Irritating to skin.
F; R11	Highly flammable	Highly flammable
Xn; R20	Harmful	Harmful by inhalation.
R66		Repeated exposure may cause skin dryness or cracking.
R67		Vapours may cause drowsiness and dizziness.
Xn; R65	Harmful	Harmful: may cause lung damage if swallowed.
Xi; R37	Irritant	Irritating to respiratory system.
N; R51-53	Dangerous for the environment	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
R43		May cause sensitization by skin contact.

Further remarks:

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in chapter 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No 453/2010

1. Identification of the substance/ preparation and of the company/ undertaking

1.1. **Product identifiers:**

Article no. (manufacturer / supplier): 800472298
Identification of the substance or preparation: Wemaplast Härter 405-VS

1.2. **Relevant identified uses of the substance or mixture and uses advised against**

1.3. **Details of the supplier of the safety data sheet**

Supplier (manufacturer/importer/downstream user/distributor):

WEMA Coating Systems GmbH
Gwinnerstraße 46 Telephone: +49(0)69/4089869-0
D-60388 Frankfurt (Main) Telefax: +49(0)69/4089869-9

Dept. responsible for information:
E-mail (competent person):
info@wema-coating-systems.de

1.4. **Emergency telephone number**

Emergency telephone: +49(0)69/4089869-0
Only available during office hours.

2. Hazards identification

2.1. **Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC

The preparation is dangerous in the sense of Directive 1999/45/EC.

R10		Flammable.
Xn; R20	Harmful	Harmful by inhalation.
R52-53		Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

2.2. **Label elements**

Labelling (67/548/EEC or 1999/45/EC)

Xn Harmful

Hazard Statements:

10	Flammable.
20	Harmful by inhalation.
52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety precautions:

38	In case of insufficient ventilation, wear suitable respiratory equipment.
51	Use only in well-ventilated areas.
61	Avoid release to the environment. Refer to special instructions / safety data sheet.
23	Do not breathe vapour.

contains:

n.a.

Special provisions concerning the labelling of certain mixtures

91	Contains isocyanates. May produce an allergic reaction.
99	Contains 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate. May produce an allergic reaction.

2.3. **Other hazards**

3. Composition/ Information on ingredients

3.2. **Mixtures**

chemical characterization (preparation)

Description: aliphatisches Polyisocyanat

Hazardous ingredients:

Classification according to Directive 67/548/EEC or 1999/45/EC

EC No:	REACH No:	

CAS No.: INDEX no.:	Identification of the hazard: classification:	% by weight Remark:
265-199-0 64742-95-6 649-356-00-4	Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified Xn; R65	5 - 10
204-658-1 123-86-4 607-025-00-1	n-butyl acetate R10 / R66 / R67	5 - 10
202-436-9 95-63-6 601-043-00-3	1,2,4-trimethylbenzene R10 / Xn; R20 / Xi; R36/37/38 / N; R51-53	5 - 10
923-037-2	01-2119471991-29 Kohlenwasserstoffe C10-C12, Isoalkane, < 2% Aromaten R10 / R53 / Xn; R65 / R66	2,5 - 5
203-604-4 108-67-8 601-025-00-5	mesitylene R10 / Xi; R37 / N; R51-53	1 - 2,5
203-132-9 103-65-1 601-024-00-X	propylbenzene R10 / Xn; R65 / Xi; R37 / N; R51-53	0,5 - 1
202-704-5 98-82-8 601-024-00-X	cumene R10 / Xn; R65 / Xi; R37 / N; R51-53	0,5 - 1
223-861-6 4098-71-9 615-008-00-5	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate T; R23 / Xi; R36/37/38 / R42/43 / N; R51-53	< 0,5
201-039-8 77-58-7	Dibutyl-Zinn-dilaurat C; R34 / Xi; R41 / R43 / T; R48/25 / N; R50-53 / Repr.Cat.2; R60-61 / Muta.Cat.3; R68	< 0,5

Additional information
Full text of R-phrases: see section 16.

4. First-aid measures

4.1. **Description of first aid measures:**

General information:

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in unconscious position and seek medical advice.

After inhalation
Move victim to fresh air. Put victim at rest and keep warm. In case of irregular breathing or respiratory arrest provide artificial respiration.

In case of skin contact:
Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

In case of eye contact:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice.

After ingestion:
If swallowed, rinse mouth with water (only if the person is conscious). Consult physician immediately. Keep victim calm. Do not induce vomiting.

4.2. **Most important symptoms and effects, both acute and delayed:**

4.3. **Indication of any immediate medical attention and special treatment needed**

5. Firefighting measures

5.1. **Extinguishing media**

Suitable extinguishing media:

alcohol resistant foam, Carbon dioxide, Powder, spray mist, (water)

Extinguishing media which must not be used for safety reasons:
Strong water jet

5.2. **Special hazards arising from the substance or mixture**
Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

5.3. **Advice for firefighters**
Provide a conveniently located respiratory protective device. Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous. Cool closed containers that are near the source of the fire.

6. Accidental release measures

6.1. **Personal precautions, protective equipment and emergency procedures**
Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

6.2. **Environmental measures**
Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. **Methods and material for containment and cleaning up**
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see chapter 13). Clean using cleansing agents. Do not use solvents.

6.4. **Reference to other sections**
Observe protective provisions (see chapter 7 and 8).

7. Handling and storage

7.1. **Precautions for safe handling**

Advices on safe handling

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values. Only use the material in places where open light, fire and other flammable sources can be kept away. Electrical equipment must be protected meeting the accepted standard. Product may become electrostatically charged. Provide earthing of containers, equipment, pumps and ventilation facilities. Anti-static clothing including shoes are recommended. Floors must be electrically conductive. Keep away from heat sources, sparks and open flames. Use only spark proof tools. Avoid contact with skin, eyes and clothes. Do not inhale dusts, particulates and spray mist when using this preparation. Avoid respiration of swarf. When using do not eat, drink or smoke. Personal protective equipment: refer to chapter 8. Do not empty containers with pressure - no pressure vessel! Always keep in containers that correspond to the material of the original container. Follow the legal protection and safety regulations.

Precautions against fire and explosion:
Vapours are heavier than air and will spread at floor level. Vapours form explosive mixtures with air.

7.2. **Conditions for safe storage, including any incompatibilities**

Requirements for storerooms and containers:
Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

Hints on joint storage
Keep away from strongly acidic and alkaline materials as well as oxidizers.

Further information on storage conditions
Take care of instructions on label. Store in a well-ventilated and dry room at temperatures between 15 °C and 30 °C. Protect from heat and direct sunlight. Keep container tightly closed. Remove all sources of ignition. Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

7.3. **Specific end use(s)**
Observe technical data sheet. Observe instructions for use.

8. Exposure controls / Personal protection

8.1. **Control parameters**

EC No: / CAS No.:	Description:	type:	Limit value STEL (EC) TWA (EC)	unit
mesitylene	203-604-4		100	mg/m3

	108-67-8	EG		20	ppm
cumene	202-704-5		375	125	mg/m3
	98-82-8	EN	50	25	ppm
n-butyl acetate	204-658-1		966	724	mg/m3
	123-86-4	EN	200	150	ppm
1,2,4-trimethylbenzene	202-436-9			100	mg/m3
	95-63-6	EG		20	ppm

Additional information
TWA (EC): Occupational exposure limit value
STEL (EC): Short term occupational exposure limit value

8.2. **Exposure controls**

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

Occupational exposure controls:

Respiratory protection:
If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Use only respiratory protection equipment with CE-symbol including four digit test number.

Hand protection:
For prolonged or repeated handling the following glove material must be used:
Thickness of the glove material: > 0,4 mm ; penetration time (maximum wearing period): > 480 min.
Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles: DIN EN 374
Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye protection:
Wear closely fitting protective glasses in case of splashes.

Body protection:
Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

Protective measures:
After contact clean skin thoroughly with water and soap oder use appropriate cleanser.

Environmental exposure controls
Do not allow to enter into surface water or drains. refer to chapter 7. No further action is necessary.

9. Physical and chemical properties

9.1. **information on basic physical and chemical properties**

Appearance:
Physical state: liquid
Colour refer to label
Odour: characteristic

Safety relevant basis data		unit	Method	Remark:
Flash point:	42	°C	DIN 53213	
Ignition temperature (AIT):				
lower explosion limit:	0,8	Vol-%		
Upper explosion limit:	7,0	Vol-%		
Vapour pressure at 20 °C:		mbar		
density at 20 °C:	1,04	g/cm³		
Water solubility (g/l):	insoluble			
pH at 20 °C:	-			
Viscosity at 20 °C	40 s 4 mm		DIN 53211	
Solvent separation test (%):	< 3	%		
Solid content (%):	95	% by weight		
solvent content:				
Organic solvents:	5	% by weight		
Water:	0	% by weight		

9.2. **Other information:**

10. Stability and reactivity

10.1. **Reactivity**

10.2. **Chemical stability**
Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to chapter 7.

10.3. **Possibility of hazardous reactions**
Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**
Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. **Incompatible materials**

10.6. **Hazardous decomposition products**
Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

11. Toxicological information

No data on preparation itself available.

11.1. **Information on toxicological effects**

Acute toxicity

Toxicological data are not available.

Irritant and corrosive effects

Toxicological data are not available.

Sensitisation

Toxicological data are not available.

Specific target organ toxicity

Toxicological data are not available.

Aspiration hazard:

Toxicological data are not available.

Practical experience

Other observations:
Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: headache, dizziness, fatigue, amyosthenia, dizziness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

Overall Assessment on CMR properties:

EC No: CAS No.:	Identification of the hazard:	Classification according to Directive 67/548/EEC or 1999/45/EC
201-039-8 77-58-7	Dibutyl-Zinn-dilaurat	Repr. Cat. 2

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified according to the toxicological dangers.See chapters 2 and 15 for details.

12. Ecological information

Overall evaluation:
There is no information available on the preparation itself .
Do not allow to enter into surface water or drains.

12.1. **Toxicity**
Toxicological data are not available.

12.2. **Persistence and degradability**
Toxicological data are not available.

12.3. **Bioaccumulative potential**
Toxicological data are not available.

12.4. **Mobility in soil**
Toxicological data are not available.

12.5. **Results of PBT and vPvB assessment**

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. **Other adverse effects**

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is classified for eco-toxicological properties accordingly. See Sections 2 and 15 for details.

13. Disposal considerations

13.1. **Waste treatment methods**

Appropriate disposal / Product
Recommendation:
Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

Control report for waste code/ waste marking according to EAKV:
080111 waste paint and varnish containing organic solvents or other dangerous substances

Contaminated packaging:
Recommendation:
Cleaned containers may be recycled. Vessels not properly emptied are special waste.

14. Transport information

14.1. **UN-No.:**

1263

14.2. **UN proper shipping name**

Land transport (ADR/RID):	Paint related material
Sea transport (IMDG):	PAINT RELATED MATERIAL
Air transport (ICAO-TI / IATA-DGR):	Paint related material

14.3. **Transport hazard class(es)**

3

14.4. **Packing Group:**

III

14.5. **Environmental hazards:**

Land transport (ADR/RID)	n.a.
Marine pollutant:	n.a.

14.6. **Special precautions for user**

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.
Advices on safe handling: see parts 6 - 8

Further remarks:

Land transport (ADR/RID)

Tunnel restriction code: D/E

Sea transport (IMDG)

EmS-No.: F-E, S-E

14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

15. Regulatory information

15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU legislation

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline).

VOC-value (in g/l) ISO 11890-2:	52
VOC-value (in g/l) ASTM D 2369:	52

National regulations

Informations on working limitations:
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

15.2. **Chemical Safety Assessment**
A chemical safety assessment has been carried out on following substance:

EC No: CAS No.:	chemical name:	REACH No:
923-037-2	Kohlenwasserstoffe C10-C12, Isoalkane, < 2% Aromaten	01-2119471991-29

16. Other information

Wording of the r-phrases under paragraph 3:

R10		Flammable.
Xn; R65	Harmful	Harmful: may cause lung damage if swallowed.
Xi; R37	Irritant	Irritating to respiratory system.
N; R51-53	Dangerous for the environment	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
T; R23	Toxic	Toxic by inhalation.
Xi; R36/37/38	Irritant	Irritating to eyes, respiratory system and skin.
R42/43		May cause sensitization by inhalation and skin contact.
R66		Repeated exposure may cause skin dryness or cracking.
R67		Vapours may cause drowsiness and dizziness.
Xn; R20	Harmful	Harmful by inhalation.
C; R34	Corrosive	Causes burns.
Xi; R41	Irritant	Risk of serious damage to eyes.
R43		May cause sensitization by skin contact.
T; R48/25	Toxic	Toxic: danger of serious damage to health by prolonged exposure if swallowed.
N; R50-53	Dangerous for the environment	Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Repr.Cat.2; R60-61	Reproductive toxic Cat.2 (Repr. Cat. 2)	May impair fertility. May damage the unborn child.
Muta.Cat.3; R68	Mutagenic Cat. 3 (Mut. Cat. 3)	Possible risk of irreversible effects.
R53		May cause long-term adverse effects in the aquatic environment.

Further remarks:
The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in chapter 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Superla White Oil 21, 35

Product Use: White oil
Product Number(s): 231004, 231006
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
White mineral oil	8042-47-5	100 %weight

This material complies with Food And Drug Administration Regulation 178.3570 code of Federal Regulations, Title 21.

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed
IMMEDIATE SYMPTOMS AND HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

Indication of any immediate medical attention and special treatment needed
Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
White mineral oil	ACGIH	5 mg/m3	10 mg/m3	--	--
White mineral oil	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: 315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.85 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) Minimum
Viscosity: 39.3 mm2/s @ 40°C (104°F) Minimum
Decomposition temperature: No Data Available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available
Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) (Typical)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: This material is not expected to react.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.
Carcinogenicity: The hazard evaluation is based on data for components or a similar material.
Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is considered inherently biodegradable. This material is not expected to present any environmental problems other than those associated with oil spills. See Section 6 for Accidental Release Measures.The product has not been tested. The statement has been derived from products of a similar structure and composition.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

White mineral oil 01-1, 02, 05, 06, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : BASE OIL 1 - BAS1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1-16
Revision Date: MAY 01, 2014

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)

DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

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