

# Appendix 2 - Safety Data Sheets

Flushing, Cleaning, Gauging, Testing,  
Dewatering

**Section: 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : HSUR43670A  
 Other means of identification : Not applicable.  
 Recommended use : OXYGEN SCAVENGER, CORROSION INHIBITOR, HYDROTEST CHEMICAL  
 Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.  
 Company : ChampionX Australia Pty Ltd  
 Suite 1/5 Brodie-Hall Drive, Technology Park  
 Bentley WA 6102  
 Australia  
 TEL: +61 8 9473 9000

Emergency telephone number : CHEMCALL 1800 127 406, International: +64 4 917 8888


Issuing date : 02.09.2021

**Section: 2. HAZARDS IDENTIFICATION**

**GHS Classification**

Acute toxicity (Oral) : Category 4  
 Skin corrosion/irritation : Category 1B  
 Serious eye damage/eye irritation : Category 1

**GHS Label element**

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Harmful if swallowed.  
 Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**  
 Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. 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. Immediately call a POISON CENTER or doctor/ physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
**Storage:**  
 Store in a well-ventilated place. Keep container tightly closed.  
**Disposal:**  
 Dispose of contents/ container to an approved waste disposal plant.

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**Other hazards** : Contact with acids liberates toxic gas.

## Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture	: Mixture		
Chemical Name		CAS-No.	Concentration: (%)
Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides		68424-85-1	10 - 30
Ammonium Bisulfite		10192-30-0	10 - 30
Ethylene Glycol		107-21-1	5 - 10
Dipropylene Glycol Monomethyl Ether		34590-94-8	5 - 10

## Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

## Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Hydrogen chloride
- Special protective equipment for firefighters : Use personal protective equipment.

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Specific extinguishing methods : 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.

Hazchem Code : 2X

## Section: 6. ACCIDENTAL RELEASE MEASURES

Initial Emergency Response Guide No : 37

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. 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). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

## Section: 7. HANDLING AND STORAGE

Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : Keep in properly labelled containers.

Unsuitable material : not determined

## Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Ethylene Glycol	107-21-1	TWA (Vapour.)	20 ppm 52 mg/m <sup>3</sup>	AU OEL
		VLE (Vapour.)	40 ppm 104 mg/m <sup>3</sup>	AU OEL
		TWA (Particulate.)	10 mg/m <sup>3</sup>	AU OEL
Ethylene Glycol	107-21-1	WES-Ceiling (Vapour and mist)	50 ppm 127 mg/m <sup>3</sup>	NZ OEL
Ethylene Glycol	107-21-1	TWA (Vapour.)	25 ppm	ACGIH
		STEL (Vapour.)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m <sup>3</sup>	ACGIH
Dipropylene Glycol Monomethyl Ether	34590-94-8	TWA	50 ppm 308 mg/m <sup>3</sup>	AU OEL

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Dipropylene Glycol Monomethyl Ether	34590-94-8	WES-STEL	150 ppm 909 mg/m <sup>3</sup>	NZ OEL
		WES-TWA	100 ppm 606 mg/m <sup>3</sup>	NZ OEL
Dipropylene Glycol Monomethyl Ether	34590-94-8	TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		STEL	150 ppm 900 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 600 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 600 mg/m <sup>3</sup>	OSHA Z1

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

## Personal protective equipment

Eye protection : Safety goggles  
Face-shield

Hand protection : Wear the following personal protective equipment:  
Nitrile  
Neoprene  
PVC  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

## Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : Pungent

Flash point : Not applicable.

pH : 4 - 6

Odour Threshold : no data available

Melting point/freezing point : no data available

Initial boiling point and boiling range : Not applicable.

Evaporation rate : no data available

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Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: not determined
Relative vapour density	: no data available
Relative density	: 1.045 - 1.075, (20 °C),
Density	: no data available
Water solubility	: completely miscible
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: < 20 mPa.s (20 °C)
Viscosity, kinematic	: 10 mm <sup>2</sup> /s (40 °C)
Molecular weight	: no data available
VOC	: no data available

### Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: Strong acids Strong bases Strong oxidizing agents
Hazardous decomposition products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Hydrogen chloride

### Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

#### Potential Health Effects

Eyes	: Causes serious eye damage.
Skin	: Causes severe skin burns.
Ingestion	: Harmful if swallowed. Causes digestive tract burns.

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Inhalation : May cause nose, throat, and lung irritation.

Chronic Exposure : Health injuries are not known or expected under normal use.

### Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Corrosion

Ingestion : Corrosion, Abdominal pain, Vomiting

Inhalation : Respiratory irritation, Cough

### Toxicity

#### Product

Acute oral toxicity : Acute toxicity estimate: 1,441 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 0.27 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : no data available

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : Result: Contains an ingredient that can cause asthmatic-like reactions in sulfite-sensitive individuals.

Carcinogenicity : 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.

Reproductive effects : No reproductive toxic effects expected.

Germ cell mutagenicity : Contains no ingredient listed as a mutagen

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity : No aspiration toxicity classification

### Components

Acute dermal toxicity : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides  
LD50 rabbit: 3,340 mg/kg

Ethylene Glycol  
LD50 rabbit: 10,600 mg/kg

Dipropylene Glycol Monomethyl Ether  
LD50 rabbit: 9,510 mg/kg

### Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: High

## Section: 12. ECOLOGICAL INFORMATION

### Toxicity



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Environmental Effects : Very toxic to aquatic life.  
Toxic to aquatic life with long lasting effects.

## Product

Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

## Components

Toxicity to fish : Ethylene Glycol  
LC50 : 72,860 mg/l  
Exposure time: 96 h

Dipropylene Glycol Monomethyl Ether  
LC50 Fish: > 1,000 mg/l  
Exposure time: 96 h

## Components

Toxicity to daphnia and other aquatic invertebrates : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides  
EC50 Daphnia magna (Water flea): 0.016 mg/l  
Exposure time: 48 h

Ammonium Bisulfite  
EC50 : 89 mg/l  
Exposure time: 48 h

Ethylene Glycol  
EC50 : > 100 mg/l  
Exposure time: 48 h

## Components

Toxicity to algae : Ethylene Glycol  
EC50 : 6,500 mg/l  
Exposure time: 96 h

## Components

Toxicity to bacteria : Ethylene Glycol  
> 1,995 mg/l

## Components

Toxicity to fish (Chronic toxicity) : Ethylene Glycol  
NOEC: 15,380 mg/l  
Exposure time: 7 d

## Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Ethylene Glycol  
NOEC: 8,590 mg/l  
Exposure time: 7 d

## Persistence and degradability

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no data available

## Mobility

no data available

## Bioaccumulative potential

no data available

## Other information

no data available

## ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: High

## Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

## Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

### Land transport

Proper shipping name : CORROSIVE LIQUID, N.O.S.  
Technical name(s): : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides  
UN/ID No. : UN 1760  
Transport hazard class(es) : 8  
Packing group : II  
IERG No : 37  
Hazchem Code : 2X

### Air transport (IATA)

UN/ID No. : UN 1760  
Proper shipping name : CORROSIVE LIQUID, N.O.S.  
Technical name(s) : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides  
Transport hazard class(es) : 8  
Packing group : II

### Sea transport (IMDG/IMO)

UN/ID No. : UN 1760  
Proper shipping name : CORROSIVE LIQUID, N.O.S.  
Technical name(s) : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides

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Transport hazard class(es) : 8  
Packing group : II  
Marine pollutant : Quaternary ammonium compound

### Section: 15. REGULATORY INFORMATION

Standard for the Uniform : Schedule 6  
Scheduling of Medicines and  
Poisons

#### INTERNATIONAL CHEMICAL CONTROL LAWS :

##### Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

##### United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory.

##### Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

##### Japan. ENCS - Existing and New Chemical Substances Inventory

On the inventory, or in compliance with the inventory.

##### New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

##### Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory.

##### Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory.

##### China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

##### Taiwan Chemical Substance Inventory

On the inventory, or in compliance with the inventory.

### Section: 16. OTHER INFORMATION

#### REFERENCES

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),  
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

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Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Revision Date : 02.09.2021  
Version Number : 1.7  
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Product name:** HYDRO 3

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

**Use of substance / mixture:** Corrosion Inhibitor/Oxygen Scavenger/Biocide PC8: Biocidal products (e.g. Disinfectants, pest control).

**1.3. Details of the supplier of the safety data sheet**

**Company name:** Roemex Limited  
Badentoy Crescent  
Badentoy Park  
Portlethen  
Aberdeen  
AB12 4YD  
United Kingdom

**Tel:** +44(0)1224 783444

**Fax:** +44(0)1224 783663

**Email:** [msds@roemex.com](mailto:msds@roemex.com)

**1.4. Emergency telephone number**

**Emergency tel:** +44(0)1224 783444

**Section 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification under CLP:** Eye Dam. 1: H318; Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 2: H411; Skin Irrit. 2: H315; STOT RE 2: H373; -: EUH031

**Most important adverse effects:** Contact with acids liberates toxic gas. Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

**2.2. Label elements**

**Label elements:**

**Hazard statements:** EUH031: Contact with acids liberates toxic gas.

H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H373: May cause damage to organs through prolonged or repeated exposure.

H400: Very toxic to aquatic life.

H411: Toxic to aquatic life with long lasting effects.

[cont...]

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**Hazard pictograms:** GHS05: Corrosion  
GHS07: Exclamation mark  
GHS08: Health hazard  
GHS09: Environmental



**Signal words:** Danger

**Precautionary statements:** P260: Do not breathe dust/fumes/gas/mist/vapours/spray.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.  
P302+P352: IF ON SKIN: Wash with plenty of water.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P362+P364: Take off contaminated clothing and wash it before reuse.

## 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:

ETHANE-1,2-DIOL - REACH registered number(s): 01-2119456816-28-0000

EINECS	CAS	PBT / WEL	CLP Classification	Percent
203-473-3	107-21-1	-	Acute Tox. 4: H302; STOT RE 2: H373	30-60%

AMMONIUM BISULPHITE - REACH registered number(s): 01-2119537321-49-0000

233-469-7	10192-30-0	-	Eye Irrit. 2: H319; -: EUH031	10-30%
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D-GLUCOPYRANOSE, OLIGOMERIC, DECYL OCTYL GLYCOSIDE - REACH registered number(s): 01-2119488530-36-0000

500-220-1	68515-73-1	-	Eye Dam. 1: H318	2.8-10%
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DIDECYLDIMETHYL AMMONIUM CHLORIDE

230-525-2	7173-51-5	-	Eye Dam. 1: H318; Aquatic Acute 1: H400; Aquatic Chronic 2: H411; Skin Corr. 1B: H314; Acute Tox. 4: H302	2.2-2.8%
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N-ALKYL(C12-16)-N,N,N-TRIMETHYLAMMONIUM CHLORIDE - REACH registered number(s): 01-2120113518-61-XXXX

691-337-8	308074-39-7	-	Skin Corr. 1B: H314; Aquatic Acute 1: H400; Eye Dam. 1: H318; Acute Tox. 3: H301; Acute Tox. 3: H311	<2.2%
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N-METHYL DIALKANOL AMINE AND OLEIC FATTY ACID DIACID COPOLYMER, METHYL QUATERNISED - REACH registered number(s): POLYMER EXEMPT

-	1421663-75-3	-	Acute Tox. 4: H302; Eye Dam. 1: H318	<2.2%
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## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

**Eye contact:** Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

**Ingestion:** Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Transfer to hospital as soon as possible.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be pain and redness. The eyes may water profusely. There may be severe pain. The vision may become blurred. May cause permanent damage.

**Ingestion:** There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Immediate / special treatment:** Eye bathing equipment should be available on the premises.

## Section 5: Fire-fighting measures

### 5.1. Extinguishing media

**Extinguishing media:** Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

### 5.2. Special hazards arising from the substance or mixture

**Exposure hazards:** In combustion emits toxic fumes.

[cont...]

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## 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:** Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid. Refer to section 8 of SDS for personal protection details.

### 6.2. Environmental precautions

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding.

### 6.3. Methods and material for containment and cleaning up

**Clean-up procedures:** Absorb into dry earth or sand. 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. Ensure there is sufficient ventilation of the area. Avoid the formation or spread of mists in the air.

### 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

**Hazardous ingredients:**

**ETHANE-1,2-DIOL**

**Workplace exposure limits:**

**Respirable dust**

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL

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UK	52 mg/m3 (vapour)	104 mg/m3 (vapour)	-	-
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## DNEL/PNEC Values

**Hazardous ingredients:**

### ETHANE-1,2-DIOL

Type	Exposure	Value	Population	Effect
DNEL	Inhalation	35mg/m3	Workers	-
DNEL	Dermal	106mg/kg/day	Workers	-
DNEL	Dermal	53mg/kg/day	Consumers	-
DNEL	Inhalation	7mg/m3	Consumers	-

## 8.2. Exposure controls

**Engineering measures:** Ensure there is sufficient ventilation of the area.

**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency.

**Hand protection:** Protective gloves.

**Eye protection:** Tightly fitting safety goggles. Ensure eye bath is to hand.

**Skin protection:** Protective clothing.

**Environmental:** An environmental assessment must be made to ensure compliance with local environmental legislation.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**State:** Liquid

**Colour:** Colourless

**Odour:** Characteristic odour

**Evaporation rate:** Slow

**Oxidising:** Non-oxidising (by EC criteria)

**Solubility in water:** Soluble

**Viscosity:** Non-viscous

**Dynamic viscosity:** < 25 cP

**Viscosity test method:** measured at 20 °C, S-18 spindle, 100 rpm

**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:** > 93

**Part.coeff. n-octanol/water:** No data available.

**Autoflammability°C:** No data available.

**Vapour pressure:** No data available.

**pH:** 5.5 - 7.5

**VOC g/l:** No data available.

### 9.2. Other information

**Other information:** No data available.

[cont...]

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## Section 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity:** Stable under recommended transport or storage conditions.

### 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:** Excessive heat for prolonged periods of time.

### 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:**

#### ETHANE-1,2-DIOL

IVN	RAT	LD50	3260	mg/kg
ORL	MUS	LD50	5500	mg/kg
ORL	RAT	LD50	4700	mg/kg

#### AMMONIUM BISULPHITE

ORAL	RAT	LD50	1540	mg/kg
------	-----	------	------	-------

**Relevant hazards for product:**

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Hazardous: calculated
Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated
STOT-repeated exposure	-	Hazardous: calculated

### Symptoms / routes of exposure

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be pain and redness. The eyes may water profusely. There may be severe pain. The vision may become blurred. May cause permanent damage.

[cont...]

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**Ingestion:** There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

## Section 12: Ecological information

### 12.1. Toxicity

**Hazardous ingredients:**

#### AMMONIUM BISULPHITE

ALGAE	96H ErC50	43.9	mg/l
Daphnia magna	96H LC50	89	mg/l
FISH	96H LC50	316	mg/l

#### DIDECYLDIMETHYL AMMONIUM CHLORIDE

ALGAE	96H ErC50	0.026	mg/l
DAPHNIA	48H EC50	0.062	mg/l
FISH	96H LC50	0.19	mg/l

### 12.2. Persistence and degradability

**Persistence and degradability:** Biodegradable.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential:** No bioaccumulation potential.

### 12.4. Mobility in soil

**Mobility:** Readily absorbed 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

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Disposal operations:** Transfer to a suitable container and arrange for collection by specialised disposal company.

**Disposal of packaging:** Arrange for collection by specialised disposal company.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport information

[cont...]

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## 14.1. UN number

UN number: UN3082

## 14.2. UN proper shipping name

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(DIDECYLDIMETHYL AMMONIUM CHLORIDE; N-ALKYL(C12-16)-N,N,N-  
TRIMETHYLAMMONIUM CHLORIDE)

## 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

Tunnel code: -

Transport category: 3

## 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: according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

\* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: EUH031: Contact with acids liberates toxic gas.

H301: Toxic if swallowed.

H302: Harmful if swallowed.

H311: Toxic in contact with skin.

H314: Causes severe skin burns and eye damage.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H373: May cause damage to organs (kidneys) through prolonged or repeated exposure

[cont...]

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(if swallowed).

H373: May cause damage to organs through prolonged or repeated exposure.

H400: Very toxic to aquatic life.

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.

## MONOETHYLENE GLYCOL (MEG)

### Section 1. Identification

<b>Product identifier</b>	: MONOETHYLENE GLYCOL (MEG)
<b>Product code</b>	: 5260DF
<b>ADG</b>	: -
<b>Product type</b>	: Liquid.
<b>Identified uses</b>	: Gas Hydrate Inhibitor / Solvent
<b>Supplier's details</b>	: Baker Hughes Level 14, 216 St Georges Terrace Perth Western Australia 6000  Tel: +618 9215 0601 Fax: +618 9215 0698
<b>Emergency telephone number</b>	: CHEMTREC Emergency Telephone Numbers (Asia Pacific Region): - Australia: (02) 9037 2994 - Brunei: +(65)-31581349 (Mandarin/English) - China: 4001-204937 (Mandarin) * - Hong Kong: 800-968-793 (Cantonese) * - Indonesia: 001-803-017-9114 (Bahasa Indonesian) * - Japan: +(81)-345209637 (Japanese) - Malaysia: 1-800-815-308 (Bahasa Malay) * - New Zealand: 9801 0034 - Philippines: 1-800-1-116-1020 (Tagalog) * - PNG: +(61) 2 9037 2994 - Singapore: 800-101-2201 (Mandarin) * - South Korea: 00-308-13-2549 (Korean) * - Taiwan: 00801-14-8954 (Mandarin) * - Thailand: 001-800-13-203-9987 (Thai) * - Vietnam: +(84)-838012436 (Vietnamese)  ----- - UK: +(44) 870-820-0418 - USA: +(1) 703-527-3887 (CHEMTREC International 24 hour) * Number can only be dialled in-country

### Section 2. Hazard(s) identification

<b>Classification of the substance or mixture</b>	: ACUTE TOXICITY (oral) - Category 4 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
<b>GHS label elements</b>	
<b>Hazard pictograms</b>	:   GHS07
<b>Signal word</b>	: WARNING
<b>Hazard statements</b>	: H302 - Harmful if swallowed. H335 - May cause respiratory irritation.
<b>Precautionary statements</b>	
<b>Prevention</b>	: Use only outdoors or in a well-ventilated area. Avoid breathing vapour. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
<b>Response</b>	: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.

## Section 2. Hazard(s) identification

- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Precautionary statements (Code)** : P271, P261, P270, P304 + P340 + P312, P405, P501
- Supplemental label elements** : Not applicable.
- Other hazards which do not result in classification** : None known.

## Section 3. Composition and ingredient information

**Substance/mixture** : Substance

Ingredient name	% (w/w)	CAS number
ethanediol	60 - 100	107-21-1

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.

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. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- 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. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. 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. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Harmful if swallowed.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : respiratory tract irritation, coughing
- 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.

## Section 4. First aid measures

- 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.

See toxicological information (Section 11)

## Section 5. Firefighting 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** : In a fire or if heated, a pressure increase will occur and the container may burst.

- 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.

- Hazardous thermal decomposition products** : carbon dioxide, carbon monoxide

- Hazchem code** : -

## 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 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".

- 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).

### Methods and material 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt 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). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour 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.

**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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Ethanediol	<b>Safe Work Australia (Australia, 4/2018). Absorbed through skin.</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Particulate STEL: 104 mg/m <sup>3</sup> 15 minutes. Form: Vapour TWA: 52 mg/m <sup>3</sup> 8 hours. Form: Vapour TWA: 20 ppm 8 hours. Form: Vapour STEL: 40 ppm 15 minutes. Form: Vapour

**Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour 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. 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: safety glasses with side-shields.

### 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. 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. Recommended: > 8 hours (breakthrough time): nitrile or neoprene

## Section 8. Exposure controls and personal protection

- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: organic vapour filter (Type A)

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Colour** : Colourless.
- Odour** : Sweetish. [Slight]
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point** : -13°C (8.6°F)
- Boiling point** : 198°C (388.4°F)
- Flash point** : Closed cup: 111°C (231.8°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 3.2%  
Upper: 15.3%
- Vapour pressure** : 0.00093 kPa (0.007 mm Hg)
- Vapour density** : 2.14 [Air = 1]
- Relative density** : 1.1
- Solubility** : Soluble in the following materials: cold water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : 398°C (748.4°F)
- Decomposition temperature** : Not available.
- Viscosity** : Not available.

## 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** : Not available.
- 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

- Conclusion/Summary** : May be harmful if ingested. Can cause target organ damage.

#### Irritation/Corrosion

- Skin** : No known significant effects or critical hazards.
- Eyes** : No known significant effects or critical hazards.
- Respiratory** : May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath.

## Section 11. Toxicological information

### Sensitisation

**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.

### Reproductive toxicity

**Conclusion/Summary** : No known significant effects or critical hazards.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
ethanediol	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Not available.			

### Aspiration hazard

Name	Result
Not available.	

**Information on likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : May cause respiratory irritation.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : Harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.

**Inhalation** : respiratory tract irritation, coughing

**Skin contact** : No specific data.

**Ingestion** : No specific data.

### Delayed and immediate effects as well as 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.

## Section 11. Toxicological information

- 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.

## Section 12. Ecological information

- Toxicity** : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
ethanediol	Acute LC50 100000 µg/l Marine water	Crustaceans - Crangon crangon - Adult	48 hours
	Acute LC50 10000000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours

### Persistence and degradability

Not available.

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
ethanediol	-1.36	-	low

## Section 13. Disposal considerations

- Disposal methods** : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

### International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
<b>ADR/RID</b>	Not regulated.	-	-	-	
<b>ADG</b>	Not regulated.	-	-	-	
<b>IMDG</b>	Not regulated.	-	-	-	
<b>IATA</b>	Not regulated.	-	-	-	

PG\* : Packing group

Regulatory information	Environmental hazards	Additional information
<b>ADR/RID Class</b>	No.	<u>Hazchem code</u> -
<b>ADG Class</b>	No.	<u>Hazchem code</u> -
<b>IMDG Class</b>	No.	-
<b>IATA Class</b>	No.	-

Additional information\*\*: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

## Section 14. Transport information

**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.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

6

### Model Work Health and Safety Regulations - Scheduled Substances

**Australia inventory (AICS)** : All components are listed or exempted.

**References** : **National Code of Practice for the Control of Workplace Hazardous Substances.**

**National Code of Practice for the Labelling of Workplace Substances.**  
**National Code of Practice for the Preparation of Material Safety Data Sheets.**  
**Approved Criteria for Classifying Hazardous Substances.**

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Any other relevant information

### History

**Date of printing** : 5 August 2020.

**Date of issue/Date of revision** : 5 August 2020

**Date of previous issue** : 15 August 2018

**Version** : 7

**Key to abbreviations** : ADG = Australian Dangerous Goods  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 NOHSC = National Occupational Health and Safety Commission  
 SUSMP = Standard Uniform Schedule of Medicine and Poisons  
 UN = United Nations

### Procedure used to derive the classification

**Section 16. Any other relevant information**

<b>Classification</b>	<b>Justification</b>
Acute Tox. 4, H302 STOT SE 3, H335	Calculation method Calculation method

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

**Disclaimer**

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

### SECTION 1: Identification : Product identifier and chemical identity

#### 1.1. Product identifier

Product form : Mixture  
Product name : RX-9022

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

Recommended use : Dye

#### 1.4. Supplier's details

##### Supplier

Chemsol Australia Pty Ltd.  
AICIS reg: NIC 1000952  
64 Cocos Drive  
6163 Bibra Lake  
T +61 943 429 42 - F +61 943 417 04  
[admin@chemsol.com.au](mailto:admin@chemsol.com.au)

##### Manufacturer

Roemex Limited  
Badentoy Crescent  
Badentoy Park  
AB12 4YD Portlethen - United Kingdom  
T +44(0)1224 783444 - F +44(0)1224 783663  
[msds@roemex.com](mailto:msds@roemex.com) - [www.roemex.com](http://www.roemex.com)

#### 1.5. Emergency phone number

Emergency number : +61 439 977 798

### SECTION 2: Hazards identification

#### 2.1. Classification of the hazardous chemical

##### Classification according to the model Work Health and Safety Regulations (WHS Regulations)

Specific target organ toxicity — Single exposure, Category 3, Respiratory H335  
tract irritation

#### 2.2. Label elements

Hazard pictograms (GHS AU) :



Exclamation  
mark

Signal word (GHS AU) :

Warning

Contains :

ethane-1,2-diol ( $\geq 10$ -  $< 25$  %); acetic acid ... % ( $\geq 1$  -  $< 10$  %)

Hazard statements (GHS AU) :

H335 - May cause respiratory irritation.

Precautionary statements (GHS AU) :

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 - Use only outdoors or in a well-ventilated area.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 - Call a POISON CENTER/doctor if you feel unwell.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

#### 2.3. Other hazards

No additional information available

# RX-9022

## Safety Data Sheet

according to the Model Work Health and Safety Regulations

### SECTION 3: Composition/information on ingredients

Name	CAS-No.	%	Classification according to the model Work Health and Safety Regulations (WHS Regulations)
ethane-1,2-diol	107-21-1	≥ 10- < 25	Acute Tox. 4 (Oral), H302 STOT SE 3, H335
acetic acid ... %	64-19-7	≥ 1 - < 10	Flam. Liq. 3, H226 Skin Corr. 1A, H314
Other substances (not contributing to the classification of this product)	-	75	-

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

#### 4.2. Symptoms caused by exposure

Symptoms/effects after inhalation : May cause respiratory irritation.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Other medical advice or treatment : Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.



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## Safety Data Sheet

according to the Model Work Health and Safety Regulations

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

## SECTION 7: Handling and storage, including how the chemical may be safely used

### 7.1. Precautions for safe handling

Precautions for safe handling : Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters - exposure standards

ethane-1,2-diol (107-21-1)	
Australia - Occupational Exposure Limits	
Local name	Ethylene glycol (Ethane-1,2-diol)
OES TWA [1]	10 mg/m <sup>3</sup> particulate 52 mg/m <sup>3</sup> vapour
OES TWA [2]	20 ppm vapour
OES STEL	104 mg/m <sup>3</sup> vapour
OES STEL [ppm]	40 ppm vapour
Remark (AU)	Sk - Absorption through the skin may be a significant source of exposure.
Regulatory reference	Workplace exposure standards for airborne contaminants (2019)
acetic acid ... % (64-19-7)	
Australia - Occupational Exposure Limits	
Local name	Acetic acid
OES TWA [1]	25 mg/m <sup>3</sup>
OES TWA [2]	10 ppm
OES STEL	37 mg/m <sup>3</sup>
OES STEL [ppm]	15 ppm
Regulatory reference	Workplace exposure standards for airborne contaminants (2019)

### 8.2. Monitoring

No additional information available

### 8.3. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

### 8.4. Personal protective equipment

Hand protection : Protective gloves

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Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR), Butyl rubber	3 (> 60 minutes)	Nitrile 0.4 mm; Butyl 0.7 mm		EN ISO 374

Eye protection : Safety glasses

Type	Field of application	Characteristics	Standard
Safety glasses		With side shields	EN 166

Skin and body protection : Wear suitable protective clothing

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment

### Personal protective equipment symbol(s)



Environmental exposure controls : Avoid release to the environment.

## SECTION 9: Physical and chemical properties

Physical state	: Liquid
Appearance	: No data available
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
pH	: 3 – 4
Relative evaporation rate (butylacetate=1)	: No data available
Melting point / Freezing point	: Melting point: -25 °C
Boiling point	: 103 °C
Flash point	: > 110 °C
Auto-ignition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Density	: Relative density: 1.02 – 1.06
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Explosive properties	: No data available
Explosive limits	: No data available
Minimum ignition energy	: No data available
Fat solubility	: No data available

## SECTION 10: Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: No additional information available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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ethane-1,2-diol (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight Animal: rat
LD50 dermal	3500 mg/kg bodyweight Animal: mouse
LC50 Inhalation - Rat	2500 mg/m <sup>3</sup>

acetic acid ... % (64-19-7)	
LD50 oral rat	3310 mg/kg bodyweight
LD50 oral	4960 mg/kg bodyweight Mouse
LD50 dermal rabbit	1060 mg/kg Source: HSDB, NITE
LC50 Inhalation - Rat	8.5 – 12.7 mg/l/4h Harmful; Adverse effect observed LC50 40 000 mg/m <sup>3</sup>
LC50 Inhalation - Rat (Vapours)	> 40 mg/l Source: ECHA Registered substances

Skin corrosion/irritation	: Not classified pH: 3 – 4
Serious eye damage/irritation	: Not classified pH: 3 – 4
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

ethane-1,2-diol (107-21-1)	
NOAEL (chronic, oral, animal/male, 2 years)	1500 mg/kg bodyweight Animal: mouse, Animal sex: male, Remarks on results: other:Effect type: carcinogenicity (migrated information)

Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.

ethane-1,2-diol (107-21-1)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure	: Not classified
------------------------	------------------

acetic acid ... % (64-19-7)	
NOAEL (oral, rat, 90 days)	290 mg/kg bodyweight Animal: rat, Animal sex: male

Aspiration hazard	: Not classified
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## SECTION 12: Ecological information

According to the National Code of Practice for the Preparation of Material Safety Data Sheets, Environmental classification information is not mandatory. Information relevant for GHS classification is available on request

### 12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

ethane-1,2-diol (107-21-1)	
LC50 - Fish [1]	72860 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	> 13900 mg/l Test organisms (species): Daphnia magna
NOEC (chronic)	≥ 1000 mg/l Test organisms (species): Americamysis bahia (previous name: Mysidopsis bahia) Duration: '23 d'
NOEC chronic fish	15380 mg/l
NOEC chronic crustacea	> 15000 ml/l

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<b>ethane-1,2-diol (107-21-1)</b>	
Partition coefficient n-octanol/water (Log Pow)	-1.36
<b>acetic acid ... % (64-19-7)</b>	
LC50 - Fish [1]	300.82 mg/l Freshwater fish
LC50 - Fish [2]	300.82 mg/l Marine water fish
EC50 - Crustacea [1]	> 1000 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	> 300.82 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	300.82 mg/l Freshwater invertebrates
Bioconcentration factor (BCF REACH)	3.16
Partition coefficient n-octanol/water (Log Pow)	-0.17

### 12.2. Persistence and degradability

<b>ethane-1,2-diol (107-21-1)</b>	
Biodegradation	100 % Readily biodegradable
<b>acetic acid ... % (64-19-7)</b>	
Biodegradation	100 % Readily biodegradable

### 12.3. Bioaccumulative potential

<b>ethane-1,2-diol (107-21-1)</b>	
Partition coefficient n-octanol/water (Log Pow)	-1.36
Bioaccumulative potential	No bioaccumulation potential.
<b>acetic acid ... % (64-19-7)</b>	
Bioconcentration factor (BCF REACH)	3.16
Partition coefficient n-octanol/water (Log Pow)	-0.17
Bioaccumulative potential	No bioaccumulation potential.

### 12.4. Mobility in soil

<b>ethane-1,2-diol (107-21-1)</b>	
Mobility in soil	0.2 Source: HSDB
Partition coefficient n-octanol/water (Log Pow)	-1.36
<b>acetic acid ... % (64-19-7)</b>	
Mobility in soil	1.153 Source: ECHA
Partition coefficient n-octanol/water (Log Pow)	-0.17

### 12.5. Other adverse effects

Ozone : Not classified  
Other adverse effects : No additional information available

<b>RX-9022</b>	
Fluorinated greenhouse gases	False
<b>ethane-1,2-diol (107-21-1)</b>	
Fluorinated greenhouse gases	False

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according to the Model Work Health and Safety Regulations

acetic acid ... % (64-19-7)	
Fluorinated greenhouse gases	False
Non-hazardous component	
Fluorinated greenhouse gases	False
water (7732-18-5)	
Fluorinated greenhouse gases	False

### SECTION 13: Disposal considerations

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

### SECTION 14: Transport information

ADG	IMDG	IATA
14.1. UN number		
Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name		
Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)		
Not regulated	Not regulated	Not regulated
14.4. Packing group		
Not regulated	Not regulated	Not regulated
14.5. Environmental hazards		
Not regulated	Not regulated	Not regulated

#### 14.6. Special precautions for user

Specific storage requirement : No data available  
Shock sensitivity : No data available

#### 14.7. Additional information

Other information : No supplementary information available

#### Transport by road and rail

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### 14.8. Hazchem or Emergency Action Code

Hazchem Code : Not applicable

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## Safety Data Sheet

according to the Model Work Health and Safety Regulations

### SECTION 15: Regulatory information

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

##### National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

Australian Inventory of Chemical Substances (AICS) status : All the chemicals contained in this product are listed on the AICS (AICS) status

#### 15.2. International agreements

No additional information available

### SECTION 16: Any other relevant information

Revision date : 01/03/2021

Classification	
STOT SE 3	H335

Full text of H-statements	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Flam. Liq. 3	Flammable liquids, Category 3
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

Safety Data Sheet (SDS), Australia

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**

**Hydrosure Dyed O-3670R**

**Section: 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Hydrosure Dyed O-3670R

Other means of identification : Not applicable.

Recommended use : HYDROTEST CHEMICAL

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : ChampionX Australia Pty Ltd  
Suite 1/5 Brodie-Hall Drive, Technology Park  
Bentley WA 6102  
Australia  
TEL: +61 8 9473 9000

Emergency telephone number : CHEMCALL 1800 127 406, International: +64 4 917 8888


Issuing date : 11.06.2020

**Section: 2. HAZARDS IDENTIFICATION**

**GHS Classification**

Skin corrosion/irritation : Category 1B  
Serious eye damage/eye irritation : Category 1

**GHS Label element**

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**  
Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
IF SWALLOWED: Rinse mouth. 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. Immediately call a POISON CENTER or doctor/ physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
**Disposal:**  
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS**

# SAFETY DATA SHEET

## Hydrosure Dyed O-3670R

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Benzyl(Coconut Oil Alkyl)Dimethylammonium Chloride	61789-71-7	10 - 30
Ethylene Glycol	107-21-1	1 - 5
Ethoxylated Mono-Tallow Alkyl-Amine	61791-26-2	1 - 5

### Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

### Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Hydrogen chloride

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazchem Code : 2X



# SAFETY DATA SHEET

## Hydrosure Dyed O-3670R

### Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. 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). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

### Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : Keep in properly labelled containers.
- Unsuitable material : not determined

### Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Ethylene Glycol	107-21-1	TWA (Vapour.)	20 ppm 52 mg/m <sup>3</sup>	AU OEL
		VLE (Vapour.)	40 ppm 104 mg/m <sup>3</sup>	AU OEL
		TWA (Particulate.)	10 mg/m <sup>3</sup>	AU OEL
Ethylene Glycol	107-21-1	WES-Ceiling (Vapour and mist)	50 ppm 127 mg/m <sup>3</sup>	NZ OEL
Ethylene Glycol	107-21-1	TWA (Vapour.)	25 ppm	ACGIH
		STEL (Vapour.)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m <sup>3</sup>	ACGIH

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

#### Personal protective equipment

- Eye protection : Safety goggles  
Face-shield
- Hand protection : Wear the following personal protective equipment:

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### Hydrosure Dyed O-3670R

Standard glove type.  
Nitrile  
Natural rubber  
butyl-rubber  
Neoprene  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- If the occupational exposure limit is likely to be exceeded, an approved respirator must be selected and used in accordance with AS/NZS 1715 and AS/NZS 1716.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

### Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Clear Yellow
- Odour : no data available
- Flash point : does not flash
- pH : 5.23 - 5.82
- Odour Threshold : no data available
- Melting point/freezing point : no data available
- Initial boiling point and boiling range : no data available
- Evaporation rate : no data available
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : no data available
- Relative vapour density : no data available
- Relative density : 1.04 - 1.09, (20 °C),
- Density : no data available
- Water solubility : no data available
- Solubility in other solvents : no data available
- Partition coefficient: n- : no data available

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### Hydrosure Dyed O-3670R

octanol/water

Auto-ignition temperature : no data available  
Thermal decomposition : no data available  
Viscosity, dynamic : no data available  
Viscosity, kinematic : no data available  
Molecular weight : no data available  
VOC : no data available

#### Section: 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.  
Conditions to avoid : None known.  
Incompatible materials : None known.  
Hazardous decomposition products : Decomposition products may include the following materials:  
Carbon oxides  
nitrogen oxides (NOx)  
Hydrogen chloride

#### Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

##### Potential Health Effects

Eyes : Causes serious eye damage.  
Skin : Causes severe skin burns.  
Ingestion : May be harmful if swallowed.  
Causes digestive tract burns.  
Inhalation : May cause nose, throat, and lung irritation.  
Chronic Exposure : Health injuries are not known or expected under normal use.

##### Experience with human exposure

Eye contact : Redness, Pain, Corrosion  
Skin contact : Redness, Pain, Corrosion  
Ingestion : Corrosion, Abdominal pain  
Inhalation : Respiratory irritation, Cough

##### Toxicity

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### Hydrosure Dyed O-3670R

#### **Product**

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg
Acute inhalation toxicity	:	no data available
Acute dermal toxicity	:	no data available
Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	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.
Reproductive effects	:	No toxicity to reproduction
Germ cell mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	No aspiration toxicity classification

#### **Components**

Acute dermal toxicity	:	Ethylene Glycol LD50 rabbit: 10,600 mg/kg  Ethoxylated Mono-Tallow Alkyl-Amine LD50 rat: > 10,000 mg/kg
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#### **Human Hazard Characterization**

Based on our hazard characterization, the potential human hazard is: High

### Section: 12. ECOLOGICAL INFORMATION

#### **Ecotoxicity**

Environmental Effects	:	Toxic to aquatic life. Harmful to aquatic life with long lasting effects.
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#### **Product**

Toxicity to fish	:	no data available
Toxicity to daphnia and other aquatic invertebrates	:	no data available
Toxicity to algae	:	no data available

#### **Components**

Toxicity to fish	:	Benzyl(Coconut Oil Alkyl)Dimethylammonium Chloride LC50 Lepomis macrochirus (Bluegill sunfish): 0.355 mg/l Exposure time: 96 h  Ethylene Glycol LC50 : 72,860 mg/l
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## Hydrosure Dyed O-3670R

Exposure time: 96 h

Ethoxylated Mono-Tallow Alkyl-Amine

LC50 Fish: 1.1 mg/l

Exposure time: 96 h

### Components

Toxicity to daphnia and other aquatic invertebrates : Ethylene Glycol  
EC50 : > 100 mg/l  
Exposure time: 48 h

Ethoxylated Mono-Tallow Alkyl-Amine

LC50 Aquatic Invertebrate: 2.6 mg/l

Exposure time: 48 h

### Components

Toxicity to algae : Ethylene Glycol  
EC50 : 6,500 mg/l  
Exposure time: 96 h

### Components

Toxicity to bacteria : Ethylene Glycol  
> 1,995 mg/l

### Components

Toxicity to fish (Chronic toxicity) : Ethylene Glycol  
NOEC: 15,380 mg/l  
Exposure time: 7 d

### Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Ethylene Glycol  
NOEC: 8,590 mg/l  
Exposure time: 7 d

### Persistence and degradability

no data available

### Mobility

no data available

### Bioaccumulative potential

no data available

### Other information

no data available

### ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

## Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in

## SAFETY DATA SHEET

### Hydrosure Dyed O-3670R

compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

#### Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

##### Land transport

Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
Technical name(s): : Benzyl(Coconut Oil Alkyl)Dimethylammonium Chloride  
UN/ID No. : UN 3265  
Transport hazard class(es) : 8  
Packing group : III  
Hazchem Code : 2X

##### Air transport (IATA)

UN/ID No. : UN 3265  
Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
Technical name(s) : Benzyl(Coconut Oil Alkyl)Dimethylammonium Chloride  
Transport hazard class(es) : 8  
Packing group : III

##### Sea transport (IMDG/IMO)

UN/ID No. : UN 3265  
Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
Technical name(s) : Benzyl(Coconut Oil Alkyl)Dimethylammonium Chloride  
Transport hazard class(es) : 8  
Packing group : III  
Marine pollutant : Benzyl(Coconut Oil Alkyl)Dimethylammonium Chloride

#### Section: 15. REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons : Schedule 6

##### INTERNATIONAL CHEMICAL CONTROL LAWS :

###### Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

###### New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

#### Section: 16. OTHER INFORMATION

##### REFERENCES

## SAFETY DATA SHEET

### Hydrosure Dyed O-3670R

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),  
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,  
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version),  
Micromedex, Inc., Englewood, CO.

Revision Date : 11.06.2020  
Date of first issue : 17.06.2016  
Version Number : 1.2  
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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.

Grouting product



Product Name: Portland Cement  
Date of Issue: 20 March 2020

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## SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### 1.1 Product identifier

Product name: Portland Cement  
Product identifier: White Portland Cement, White Portland Limestone Cement, White Blended Cement, Bricklayers<sup>®</sup> Cement

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

Application: Binder for natural and artificially processed aggregates, such as sand, gravel and pebbles, for production of mortar, plaster and concrete.

### 1.3 Details of the supplier of the safety data sheet

Supplier: AALBORG PORTLAND MALAYSIA SDN BHD  
Lot 75244, Pinji Estate, P.O.Box 428,  
30750 Ipoh, Perak, Malaysia  
Tel: 05-321 8988 Fax: 05-322 2522  
[aalborg@aalborgportland.com.my](mailto:aalborg@aalborgportland.com.my)  
[www.aalborgportland.com.my](http://www.aalborgportland.com.my)

Responsible for safety data sheet authoring: [aalborg@aalborgportland.com.my](mailto:aalborg@aalborgportland.com.my)

Australia contact details:

Company: AALBORG PORTLAND AUSTRALIA PTY LTD  
68 Gosport Street,  
Hemmant, QLD 4174, Australia

Contact No.:  
Phone: Toll Free 1800 793 689  
Fax: Toll Free 1800 643 470  
Office: +61 07 3880 4128  
Email: [Sales@aalborgportland.com.au](mailto:Sales@aalborgportland.com.au)  
Website: [www.aalborgportland.com.au](http://www.aalborgportland.com.au)  
Contact Person: Mr. Steve Reeve: Mobile (+61) 0401 642 247  
Mr Chris Mathews Mobile (+61) 0499 993 793

### 1.4 Emergency telephone number

Australia Poisons Information Centre 13 11 26  
New Zealand Poison Information Service 0800 POISON (0800 764 766)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

The product is classified:

GHS: Serious Eye Damage \ Eye Irritation - Category 1; H318  
Skin Sensitization – Category 1; H317  
Skin Irritation - Category 2; H315  
Specific Target Organ – Category 3; H335

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**Human health:** Dust may irritate throat and respiratory system and cause coughing. Frequent inhalation of dust over a long period of time increase the risk of developing lung diseases. Dust or splashes from the mixture may cause permanent eye damage.

Dust has an irritating effect on moist skin. Prolonged contact with wet cement/mixture may cause burns.

**Environment:** The product is not expected to be hazardous to the environment. In the presence of water, the product hardens to a solid mass which is not biodegradable.

## 2.2 Label elements



Signal Word

**DANGER**

Hazard Statements(s)

H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.

Precautionary Statement(s)

P261 Do not breathe dust.  
P280 Wear protective gloves, eye and face protection.  
P305/351/338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P302/P352/P333/P313 **IF ON SKIN:** Wash with plenty of soap and water. If skin irritation or rash occurs, get medical advice / attention  
P313 Get medical advice/attention.  
P501 Dispose of contents/container in accordance with local regulations  
Contains: Calcium oxide. When mixed with water it will form calcium hydroxide which has a corrosive effect on skin and eyes.

## 2.3 Other hazards

Other hazards Not relevant.

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### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.1 Mixtures

The product contains: cement

The following substances shall be indicated according to legislation:

GHS:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH</u> <u>Reg. No.:</u>	<u>Chemical</u> <u>name:</u>	<u>Hazard</u> <u>classification:</u>	<u>Notes:</u>
60-100	65997-15-1	266-043-4	-	Portland Cement	Skin Irrit. 2; H315 Eye Irrit. 2; H318 Skin Sens.1; H317 STOT RE 3; H335	

(a) Portland cement is, according to Article 2(7)(b) of the Regulation (EC) No 1907/2006 (REACH) and its amendment by Regulation (EC) No 987/2008 of 8 October 2008, exempt from the registration requirement.

### SECTION 4: FIRST AID MEASURES

#### 4.1 Description of first aid measures

Inhalation:	Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.
Skin contact:	Remove contaminated clothing immediately and wash skin with soap and water. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.
Eye contact:	Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring these instructions.
Ingestion:	Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and bring along these instructions.

#### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

#### 4.3 Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Not known.

### SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

Extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

#### 5.2 Special hazards arising from the substance or mixture

Specific hazards: Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

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### 5.3 Advice for firefighters

Protective equipment for fire fighters:

Selection of respiratory protection for fire-fighting: follow the general fire precautions indicated in the workplace.  
In case of contact with water used for fire extinguishing, use chemical resistant protective suit.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions:

Avoid inhalation of dust. Avoid contact with eyes and prolonged skin contact. Use work methods which minimize dust production.

### 6.2 Environmental precautions

Environmental precautions:

The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up:

Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Safe handling advice:

Observe good chemical hygiene practices. Avoid spreading dust. Avoid inhalation of dust. Avoid contact with eyes and prolonged skin contact.  
Change contaminated clothing.

Technical measures:

Use work methods which minimise dust production.

Technical precautions:

Mechanical ventilation may be required. Provide easy access to water supply and eye wash facilities.

### 7.2. Conditions for safe storage, including any incompatibilities.

Technical measures for safe storage:

No special precautions.

Storage conditions:

Store in closed original container in a dry place. Seal opened containers and use up as soon as possible. When stored in humid conditions, the chromate neutralisation will decrease.

### 7.3. Specific end use(s)

Specific use(s):

Not relevant.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
65997-15-1	Portland cement, respirable dust	3 mg/m <sup>3</sup>	TWA	-	USECHH 2000
65997-15-1	Portland cement, inhalable dust	10 mg/m <sup>3</sup>	TWA	-	USECHH 2000

### 8.2. Exposure controls

Engineering measures:	Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of inhalation of dust.
Personal protection:	Personal protection equipment should be chosen in discussion with the supplier of the personal protective equipment.
Respiratory equipment:	During dust-raising work: Use respiratory equipment with particle filter.
Hand protection:	Wear protective gloves. Nitrile gloves are recommended. Other types of gloves can be recommended by the glove supplier.
Eye protection:	Wear goggles/face shield.
Skin protection:	Wear special protective clothing. Hood or helmet shall be used in connection with splashing work.
Hygiene measures:	Remove contaminated clothing and wash the skin thoroughly with soap and water after work.
Environmental Exposure Controls:	Not available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties.

Appearance:	Cement White
Odour:	Odourless.
pH:	Ready-to-use mixture: approx. 13
Boiling point:	Not relevant.
Flash point:	Not relevant.
Explosion limits:	Not relevant.
Relative density:	Not available.
Solubility:	Miscible with water.

### 9.2. Other information

Other data:	Not relevant.
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## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Reactivity: None known.

### 10.2 Chemical stability

Stability: Stable under normal temperature conditions. The content of chromate reducing agent is gradually diminished.

### 10.3 Possibility of hazardous reactions

Hazardous Reactions: None known.

### 10.4 Conditions to avoid

Conditions/materials to avoid: The product will harden into a hard mass in contact with water and moisture.

### 10.5 Incompatible materials

Incompatible materials: Not known.

### 10.6 Hazardous decomposition products

Hazardous decomposition products: None in particular.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects Inhalation:

Inhalation: Dust may irritate throat and respiratory system and cause coughing.  
Skin contact: Dust has an irritating effect on moist skin. Repeated or prolonged contact with skin may cause allergic reactions in sensitive individuals.  
Eye contact: Dust or splashes from the mixture may cause permanent eye damage. Immediate first aid is necessary.  
  
Ingestion: Not likely, due to the form of the product. Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.  
Specific effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Ecotoxicity: The product is not expected to be hazardous to the environment.

### 12.2. Persistence and degradability

Degradability: The product reacts with water to form a solid insoluble reaction product which is non-degradable, according to information available.

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### 12.3. Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

### 12.4. Mobility in soil

Mobility: No data available.

### 12.5. Other adverse effects

Other adverse effects: None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements. Waste is classified as hazardous waste. Note that fully cured material is not considered as hazardous waste.

## SECTION 14: TRANSPORT INFORMATION

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### 14.1. UN number

UN-No: None Allocated.

### 14.2. UN proper shipping name

Proper Shipping Name: None Allocated.

### 14.3. Transport hazard class(es)

Class: None Allocated.

### 14.4. Packing group

PG: None Allocated.

### 14.5. Environmental hazards

Marine pollutant: None Allocated.

Environmentally Hazardous substance:

### 14.6. Special precautions for user

Special precautions: None known.

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#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: Not relevant.

### SECTION 15: REGULATORY INFORMATION

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

Special provisions: As a general rule, persons under 18 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.

#### 15.2. Chemical Safety Assessment

CSA status: Not relevant

### SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions. The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.





# SAFETY DATA SHEET

Jet A-1



## Section 1. Identification

<b>GHS product identifier</b>	Jet A-1
<b>Other means of identification</b>	Aviation Kerosine, Aviation Turbine Fuel, ATK, AVTUR, F-35, Turbine Fuel, Aviation Kerosine Type, Jet A-1
<b>Product code</b>	SAV2101
<b>SDS no.</b>	SAV2101
<b><u>Relevant identified uses of the substance or mixture and uses advised against</u></b>	
<b>Use of the substance/ mixture</b>	Jet fuel, do not use for other purposes. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
<b>Manufacturer Supplier</b>	BP Australia Pty Ltd Level 17, 717 Bourke Street Docklands, Victoria 3008 ABN 53 004 085 616 www.bp.com.au
<b>EMERGENCY TELEPHONE NUMBER</b>	Tel: +61 (03) 9268 4111 1800 638 556 (24 hour)
<b>OTHER PRODUCT INFORMATION</b>	Technical Helpline Number: 1300 139 700

## Section 2. Hazard(s) identification

<b>Classification of the substance or mixture</b>	FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
<b>GHS label elements</b>	
<b>Hazard pictograms</b>	
<b>Signal word</b>	DANGER
<b>Hazard statements</b>	H226 - Flammable liquid and vapour. H304 - May be fatal if swallowed and enters airways. H315 - Causes skin irritation. H336 - May cause drowsiness or dizziness.
<b>Precautionary statements</b>	
<b>General</b>	P102 - Keep out of reach of children. P101 - If medical advice is needed, have product container or label at hand.

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	<b>(Australia)</b>	<b>Language</b> ENGLISH
		<b>(ENGLISH)</b>

## Section 2. Hazard(s) identification

<b>Prevention</b>	<p>P280 - Wear protective gloves, protective clothing and eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating or lighting equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing vapour. P264 - Wash hands thoroughly after handling.</p>
<b>Response</b>	<p>P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. P301 + P310, P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P362 - Take off contaminated clothing and wash before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P332 + P313 - If skin irritation occurs: Get medical attention.</p>
<b>Storage</b>	<p>P405 - Store locked up. P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P403 + P235 - Keep cool.</p>
<b>Disposal</b>	<p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
<b>Supplemental label elements</b>	<p>Not applicable.</p>
<b>Other hazards which do not result in classification</b>	<p>Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapour may cause flash fire or explosion.</p>

## Section 3. Composition and ingredient information

**Substance/mixture** Mixture

A mixture of kerosine streams. May also contain small quantities of proprietary performance additives. May contain Tracer A (LDTA-A).

<b>Ingredient name</b>	<b>% (w/w)</b>	<b>CAS number</b>
☑Kerosine (petroleum), hydrodesulfurised	0 - 100	64742-81-0
Kerosine (petroleum)	0 - 100	8008-20-6

**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

<b>Eye contact</b>	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.
<b>Inhalation</b>	☑Inhaled, remove to fresh air. Get medical attention. If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

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(ENGLISH)

## Section 4. First aid measures

### Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention.

### Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

### 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. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

#### Specific treatments

No specific treatment.

#### 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.

## Section 5. Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

#### Unsuitable extinguishing media

Do not use water jet.

### Specific hazards arising from the chemical

Flammable liquid and vapour. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. 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. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly-grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Liquid will float and may reignite on surface of water.

#### Hazardous thermal decomposition products

Combustion products may include the following:  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)

### Special protective actions for fire-fighters

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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

## Section 5. Firefighting measures

<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
<b>Hazchem code</b>	3Y

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Immediately 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 spill material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

**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".

**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. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

### Methods and material for containment and cleaning up

**Small spill** Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

**Large spill** Eliminate all ignition sources. 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. Dike spill area and do not allow product to reach sewage system and surface or ground water. 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. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

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## Section 7. Handling and storage

### Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid contact with eyes, skin and clothing. Avoid breathing vapour 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. 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 only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilt material and runoff with soil and surface waterways. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

### 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 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. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. 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. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> Kerosine (petroleum), hydrodesulfurised	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 200 mg/m <sup>3</sup> , (as total hydrocarbon vapor) 8 hours. Issued/Revised: 1/2003
Kerosine (petroleum)	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 200 mg/m <sup>3</sup> , (as total hydrocarbon vapor) 8 hours. Issued/Revised: 1/2003

### 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.

Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Chemical splash goggles.

#### Skin protection

##### Hand protection

Wear chemical resistant gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

**Recommended:** Nitrile gloves.

##### Skin protection

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.

Wear suitable protective clothing.

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## Section 8. Exposure controls and personal protection

Footwear highly resistant to chemicals.

When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.

When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.

When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.

Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

### 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 with adequate ventilation.

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

**Recommended:** If ventilation is inadequate, use respirator that will protect against organic vapour and dust/mist.

### Refer to standards:

Respiratory protection:AS/NZS 1715 and AS/NZS 1716

Gloves:AS/NZS 2161.1

Eye protection:AS/NZS 1336 and AS/NZS 1337

## Section 9. Physical and chemical properties

### Appearance

**Physical state**

Liquid.

**Colour**

Colourless. / Yellow.

**Odour**

Hydrocarbon.

**Odour threshold**

Not available.

**pH**

Not applicable. Based on Solubility in Water (Very slightly soluble in water).

**Melting point**

<-47°C (<-52.6°F)

**Boiling point**

140 to 280°C (284 to 536°F)

**Flash point**

Closed cup: ≥38°C (≥100.4°F) [Pensky-Martens.]

**Evaporation rate**

Not relevant/applicable due to nature of the product. Based on: low volatility

**Flammability (solid, gas)**

Not applicable. Based on - Physical state

**Lower and upper explosive (flammable) limits**

Lower: 0.6%

Upper: 6%

**Vapour pressure**

kPa (15 mm Hg) [38°C (100.4°F)]

**Vapour density**

>1 [Air = 1]

**Relative density**

1

**Density**

775 to 840 kg/m<sup>3</sup> (0.775 to 0.84 g/cm<sup>3</sup>) at 15°C

**Solubility**

Very slightly soluble in water.

**Partition coefficient: n-octanol/water**

Not applicable. Based on: Kerosene - Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

**Auto-ignition temperature**

207 to 250°C (404.6 to 482°F)

**Decomposition temperature**

Not observed to decompose by final boiling point: >280°C (>536°F)

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## Section 9. Physical and chemical properties

### Viscosity

Kinematic: <7 mm<sup>2</sup>/s (<7 cSt) at 40°C  
Kinematic: 1 to 8 mm<sup>2</sup>/s (1 to 8 cSt) at -20°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 polymerisation will not occur.

### Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.

### Incompatible materials

Reactive or incompatible with the following materials: oxidising 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

#### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> Kerosine (petroleum), hydrodesulfurised	Category 3	-	Narcotic effects
Kerosine (petroleum)	Category 3	-	Narcotic effects

#### Aspiration hazard

Name	Result
<input checked="" type="checkbox"/> Kerosine (petroleum), hydrodesulfurised	ASPIRATION HAZARD - Category 1
Kerosine (petroleum)	ASPIRATION HAZARD - Category 1

### Information on likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

#### Eye contact

No known significant effects or critical hazards.

#### Inhalation

Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

#### Skin contact

Causes skin irritation.

#### Ingestion

Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

### Symptoms related to the physical, chemical and toxicological characteristics

#### Eye contact

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

#### Inhalation

Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

#### Skin contact

Adverse symptoms may include the following:  
irritation  
redness

## Section 11. Toxicological information

### Ingestion

Adverse symptoms may include the following:  
nausea or vomiting

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Inhalation

Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

#### Short term exposure

##### Potential immediate effects

May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

##### Potential delayed effects

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.

## Section 12. Ecological information

### Persistence and degradability

Expected to be biodegradable. Non-persistent per IMO criteria

### Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

### Mobility in soil

#### Soil/water partition coefficient ( $K_{oc}$ )

Not available.

#### Mobility

Spillages may penetrate the soil causing ground water contamination.

### Other ecological information

Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## Section 13. Disposal considerations

### Disposal methods





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. 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 13. Disposal considerations

### Special Precautions for Landfill or Incineration

No additional special precautions identified.

## Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN1863	UN1863	UN1863
UN proper shipping name	Fuel, aviation, turbine engine	FUEL, AVIATION, TURBINE ENGINE. Marine pollutant	FUEL, AVIATION, TURBINE ENGINE
Transport hazard class(es)	3 	3  	3 
Packing group	III	III	III
Environmental hazards	<input checked="" type="checkbox"/> Yes. The environmentally hazardous substance mark is not required.	Yes.	<input checked="" type="checkbox"/> Yes. The environmentally hazardous substance mark is not required.
Additional information	<input checked="" type="checkbox"/> <b>Hazchem code</b> 3Y <b>Initial emergency response guide</b> 14	<input checked="" type="checkbox"/> The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Emergency schedules</b> F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** Not available.

### Transport in bulk according to IMO instruments

### Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.  
Category: Kerosene

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines and Poisons

Not scheduled

Consumer products - This product is exempt per Appendix A of the SUSMP.

Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

### Montreal Protocol

Ingredient name	List name	Status
Not listed.		

### Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

### Rotterdam Convention on Prior Informed Consent (PIC)

Ingredient name	List name	Status
Not listed.		

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## Section 15. Regulatory information

### International lists

#### National inventory

<b>REACH Status</b>	For the REACH status of this product please consult your company contact, as identified in Section 1.
<b>Australia inventory (AICS)</b>	All components are listed or exempted.
<b>Canada inventory</b>	<input checked="" type="checkbox"/> Contact supplier for regulatory information.
<b>China inventory (IECSC)</b>	Not determined.
<b>Japan inventory (ENCS)</b>	<input checked="" type="checkbox"/> At least one component is not listed.
<b>Korea inventory (KECI)</b>	Not determined.
<b>Philippines inventory (PICCS)</b>	Not determined.
<b>Taiwan Chemical Substances Inventory (TCSI)</b>	Not determined.
<b>United States inventory (TSCA 8b)</b>	<input checked="" type="checkbox"/> All components are active or exempted.

## Section 16. Any other relevant information

### History

<b>Date of printing</b>	2/3/2021
<b>Date of issue/Date of revision</b>	2/3/2021
<b>Date of previous issue</b>	1/28/2016
<b>Version</b>	2
<b>Prepared by</b>	Product Stewardship
<b>Key to abbreviations</b>	ADG = Australian Dangerous Goods 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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006] STEL = Short term exposure limit SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations TWA = Time weighted average VOC = Volatile Organic Compound SADT = Self-Accelerating Decomposition Temperature Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 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, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

### Procedure used to derive the classification

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## Section 16. Any other relevant information

Classification	Justification
<input checked="" type="checkbox"/> FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1	On basis of test data Calculation method Calculation method Calculation method

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.

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# Fuels

# SAFETY DATA SHEET




BP DMA Marine Distillate Low Sulphur

## Section 1. Identification

<b>GHS product identifier</b>	BP DMA Marine Distillate Low Sulphur
<b>Other means of identification</b>	Marine diesel fuel Automotive Diesel Fuel G10
<b>Product code</b>	0000003682
<b>SDS no.</b>	0000003682
<b><u>Relevant identified uses of the substance or mixture and uses advised against</u></b>	
<b>Use of the substance/ mixture</b>	Fuel for compression ignition diesel engines. Fuel for marine engines. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
<b>Manufacturer</b>	
<b>Supplier</b>	BP Australia Pty Ltd Level 17, 717 Bourke Street Docklands, Victoria 3008 ABN 53 004 085 616  www.bp.com.au  Technical Helpline Number: 1300 139 700
<b>EMERGENCY TELEPHONE NUMBER</b>	1800 638 556

## Section 2. Hazard(s) identification

<b>Classification of the substance or mixture</b>	 FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 ASPIRATION HAZARD - Category 1
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### GHS label elements


#### Hazard pictograms



#### Signal word


DANGER

#### Hazard statements

 H227 - Combustible liquid.  
H304 - May be fatal if swallowed and enters airways.  
H315 - Causes skin irritation.  
H332 - Harmful if inhaled.  
H351 - Suspected of causing cancer.  
H373 - May cause damage to organs through prolonged or repeated exposure. (bone marrow, liver, thymus)

#### Precautionary statements

##### General

 P102 - Keep out of reach of children.  
P101 - If medical advice is needed, have product container or label at hand.

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## Section 2. Hazard(s) identification

<b>Prevention</b>	<p>P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P281 - Use personal protective equipment as required. P280 - Wear protective gloves, protective clothing and eye or face protection. P210 - Keep away from flames and hot surfaces. No smoking. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapour or spray. P264 - Wash hands thoroughly after handling.</p>
<b>Response</b>	<p>P308 + P313 - IF exposed or concerned: Get medical attention. P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. P301 + P310, P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P362 - Take off contaminated clothing and wash before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P332 + P313 - If skin irritation occurs: Get medical attention.</p>
<b>Storage</b>	<p>P405 - Store locked up. P403 + P235 - Store in a well-ventilated place. Keep cool.</p>
<b>Disposal</b>	<p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
<b>Supplemental label elements</b>	<p>Not applicable.</p>
<b>Other hazards which do not result in classification</b>	<p>Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapour may cause flash fire or explosion. 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.</p>

## Section 3. Composition and ingredient information

**Substance/mixture** Mixture

May contain Fatty Acid Methyl Esters (FAME) and/or Bio-based diesel (BBD). Contains small quantities of polycyclic aromatic hydrocarbons (PAHs). May also contain small quantities of proprietary performance additives.

<b>Ingredient name</b>	<b>% (w/w)</b>	<b>CAS number</b>
Fuels, diesel	≥75	68334-30-5
Alkanes, C10-20-branched and linear	≤20	928771-01-1

**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.**

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

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	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.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

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## Section 4. First aid measures

### Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention.

### Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

### 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. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

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.

#### Specific treatments

No specific treatment.

#### 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.

## Section 5. Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

#### Unsuitable extinguishing media

Do not use water jet.

### Specific hazards arising from the chemical

Combustible liquid. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. 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. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly-grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Liquid will float and may reignite on surface of water.

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## Section 5. Firefighting measures

### Hazardous thermal decomposition products

☑ Combustion products may include the following:  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)

### Special protective actions for fire-fighters

☑ 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. 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 positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Immediately 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 spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

#### 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".

#### 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. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

### Methods and material for containment and cleaning up

#### Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

#### Large spill

Eliminate all ignition sources. 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. Dike spill area and do not allow product to reach sewage system and surface or ground water. 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. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. 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). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. 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. 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 only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilt material and runoff with soil and surface waterways. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

#### 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 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. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. 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. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Fuels, diesel	<b>ACGIH TLV (United States). Absorbed through skin.</b> TWA: 100 mg/m <sup>3</sup> , (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor

#### **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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### **Eye/face protection**

Chemical splash goggles.

#### **Skin protection**

##### **Hand protection**

Wear chemical resistant gloves. Recommended: Nitrile gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

##### **Skin protection**

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.

Wear suitable protective clothing.

Footwear highly resistant to chemicals.

When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.

When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and

## Section 8. Exposure controls and personal protection

gloves should all be anti-static.

When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.

Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

### 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 with adequate ventilation.

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

**Recommended:** If ventilation is inadequate, use respirator that will protect against organic vapour and dust/mist.

### Refer to standards:

Respiratory protection:AS/NZS 1715 and AS/NZS 1716

Gloves:AS/NZS 2161.1

Eye protection:AS/NZS 1336 and AS/NZS 1337

## Section 9. Physical and chemical properties

### Appearance

#### Physical state

Liquid.

#### Colour

Clear and Bright.

Colourless to light yellow. Fluorescent (Green. / Blue. / Yellow.)

#### Odour

Mild.

#### Odour threshold

Not available.

#### pH

Not available.

#### Melting point

Not available.

#### Boiling point

180 to 400°C (356 to 752°F)

#### Flash point

Closed cup: >61.5°C (>142.7°F) [Pensky-Martens.]

#### Evaporation rate

Not available.

#### Flammability (solid, gas)

Not applicable. Based on - Physical state

#### Lower and upper explosive (flammable) limits

Lower: 0.5%

Upper: 7.5%

#### Vapour pressure

<0.1 kPa (<0.755 mm Hg)

#### Vapour density

1 [Air = 1]

#### Relative density

0.84

#### Density

810 to 850 kg/m<sup>3</sup> (0.81 to 0.85 g/cm<sup>3</sup>) at 15°C

#### Solubility

Insoluble in water.

#### Partition coefficient: n-octanol/water

Not available.

#### Auto-ignition temperature

240°C (464°F)

#### Decomposition temperature

Not available.

#### Viscosity

Kinematic: 2.1 to 5.5 mm<sup>2</sup>/s (2.1 to 5.5 cSt) at 40°C

## Section 10. Stability and reactivity

<b>Reactivity</b>	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
<b>Chemical stability</b>	The product is stable.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>Conditions to avoid</b>	Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.
<b>Incompatible materials</b>	Reactive or incompatible with the following materials: oxidising materials.
<b>Hazardous decomposition products</b>	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	Result	Species	Dose	Exposure
Fuels, diesel	LC50 Inhalation Dusts and mists	Rat	4.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Oral	Rat	17900 mg/kg	-
	LD50 Oral	Rat	7600 mg/kg	-

**Conclusion/Summary** Harmful if inhaled.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Fuels, diesel	Skin - Irritation	Rabbit	-	-	-
	Skin - Irritation	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-

**Skin** Causes skin irritation.

#### Mutagenicity

Product/ingredient name	Test	Experiment	Result
Fuels, diesel	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
	not guideline	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative

**Conclusion/Summary** Not classified. Based on available data, the classification criteria are not met.

#### Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Fuels, diesel	Positive - Dermal - Unspecified	Mouse	-	2 years

**Conclusion/Summary** Suspected of causing cancer.

#### Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
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## Section 11. Toxicological information

Fuels, diesel	-	-	Negative	Rat	Dermal	20 days
	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	10 days

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Fuels, diesel	Category 2	-	bone marrow, liver, thymus

### Aspiration hazard

Name	Result
Fuels, diesel Alkanes, C10-20-branched and linear	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

**Information on likely routes of exposure** Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	Harmful if inhaled.
<b>Skin contact</b>	Causes skin irritation.
<b>Ingestion</b>	Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	Adverse symptoms may include the following: nausea or vomiting

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Eye contact</b>	Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.
<b>Inhalation</b>	Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.
<b>Skin contact</b>	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
<b>Ingestion</b>	If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

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## Section 11. Toxicological information

<b>General</b>	May cause damage to organs through prolonged or repeated exposure. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
<b>Carcinogenicity</b>	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	4.1 mg/l

### Other information

Diesel exhaust particulates have been classified by the National Toxicological Program (NTP) to be a reasonably anticipated human carcinogen. Exposure should be minimized to reduce potential risk.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Fuels, diesel	EL50 >1000 mg/l Nominal Fresh water	Micro-organism	40 hours
	NOELR 3.217 mg/l Nominal Fresh water	Micro-organism	40 hours
	Acute EL50 22 mg/l Nominal Fresh water	Algae	72 hours
	Acute EL50 210 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute EL50 68 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute ErL50 78 mg/l Nominal Fresh water	Algae	72 hours
	Acute LL50 65 mg/l Nominal Fresh water	Fish	96 hours
	Acute LL50 21 mg/l Nominal Fresh water	Fish	96 hours
	Acute NOELR 10 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 1 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 46 mg/l Nominal Fresh water	Daphnia	48 hours
	Chronic NOEL 0.083 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 0.2 mg/l Nominal Fresh water	Daphnia	21 days

### Persistence and degradability

This product is inherently biodegradable.

Product/ingredient name	Test	Result	Dose	Inoculum
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## Section 12. Ecological information

Fuels, diesel	OECD 301 F	60 % - Readily - 28 days	30 mg/l	-
	OECD 301 F	57.5 % - Not readily - 28 days	25 mg/l	-
	Equivalent to	35 % - Not readily - 28 days	5 mg/l	-
	EPA OTS 796.3100			

### Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

### Mobility in soil

Soil/water partition coefficient ( $K_{oc}$ )

Not available.

Mobility

Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

### Other ecological information

Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## Section 13. Disposal considerations

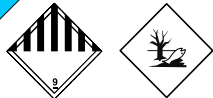
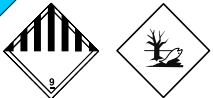
### Disposal methods

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. 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

### Special Precautions for Landfill or Incineration

Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

## Section 14. Transport information

	ADG	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.. Marine pollutant (Fuels, diesel)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuels, diesel)
Transport hazard class(es)	-	9 	9 
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.

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## Section 14. Transport information

<b>Additional information</b>	<b>Remarks</b> Combustible liquid Class C1 (AS 1940).	<input checked="" type="checkbox"/> This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. <b>Emergency schedules</b> F-A, S-F	<input checked="" type="checkbox"/> This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
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**Special precautions for user** Not available.

**Transport in bulk according to IMO instruments** **Proper shipping name** MARPOL Annex 1 rules apply for bulk shipments by sea.  
Category: gas oils, including ship's bunkers

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines and Poisons

Not scheduled

Consumer products - This product is exempt per Appendix A of the SUSMP.  
Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

#### Montreal Protocol

<b>Ingredient name</b>	<b>List name</b>	<b>Status</b>
Not listed.		

#### Stockholm Convention on Persistent Organic Pollutants

<b>Ingredient name</b>	<b>List name</b>	<b>Status</b>
Not listed.		

#### Rotterdam Convention on Prior Informed Consent (PIC)

<b>Ingredient name</b>	<b>List name</b>	<b>Status</b>
Not listed.		

### International lists

#### National inventory

##### **REACH Status**

For the REACH status of this product please consult your company contact, as identified in Section 1.

##### **Australia inventory (AICS)**

Contact local supplier or distributor.

##### **Canada inventory**

At least one component is not listed in DSL but all such components are listed in NDSL.

##### **China inventory (IECSC)**

Not determined.

##### **Japan inventory (ENCS)**

Not determined.

##### **Korea inventory (KECI)**

Not determined.

##### **Philippines inventory (PICCS)**

Not determined.

##### **Taiwan Chemical Substances Inventory (TCSI)**

Not determined.

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## Section 15. Regulatory information

United States inventory  
(TSCA 8b)

All components are active or exempted.

## Section 16. Any other relevant information

### History

Date of printing 5/14/2021  
Date of issue/Date of revision 5/14/2021  
Date of previous issue 12/12/2016  
Version 2  
Prepared by Product Stewardship

### Key to abbreviations

ADG = Australian Dangerous Goods  
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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
NOHSC = National Occupational Health and Safety Commission  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]  
STEL = Short term exposure limit  
SUSMP = Standard Uniform Schedule of Medicine and Poisons  
UN = United Nations  
TWA = Time weighted average  
VOC = Volatile Organic Compound  
SADT = Self-Accelerating Decomposition Temperature  
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 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, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

### Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 ASPIRATION HAZARD - Category 1	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method

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

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## Section 16. Any other relevant information

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.

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# Hydraulic fluids, Lubricants and Cleaning products

# SAFETY DATA SHEET



## MARINE HYDRAULIC OIL 22

### Section 1. Identification

**GHS product identifier** : MARINE HYDRAULIC OIL 22  
**Product code** : 301154175008  
**Other means of identification** : Not available.  
**Product type** : Liquid.

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

Identified uses	
Industrial applications: Lubricating Oil	
Uses advised against	Reason
None known.	

**Supplier's details** : Calumet Branded Products, LLC  
2780 Waterfront Pkwy E. Drive Suite 200  
Indianapolis, IN 46214  
USA  
Technical Services:317-328-5660

**Emergency telephone number** : 24 hr. CHEMTREC 1-800-424-9300 / International 1-703-527-3887

### 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.

**Hazards not otherwise classified** : None known.

### Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

## Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	≥50 - ≤75	64742-54-7
Dec-1-ene, trimers, hydrogenated	≥10 - ≤25	68037-01-4
Distillates (petroleum), solvent-dewaxed heavy paraffinic	≤10	64742-65-0
2,6-di-tert-butylphenol	<1	128-39-2

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** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### 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.

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

- 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.
- 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** : 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 thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides

**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. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized 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).

### 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. 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. 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).
- 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.



## Section 7. Handling and storage

**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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	<b>ACGIH TLV (United States, 3/2020).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Mist STEL: 10 mg/m <sup>3</sup> 15 minutes. Form: Mist None.
Dec-1-ene, trimers, hydrogenated	<b>ACGIH TLV (United States, 3/2020).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Mist STEL: 10 mg/m <sup>3</sup> 15 minutes. Form: Mist None.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	<b>ACGIH TLV (United States, 3/2020).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Mist STEL: 10 mg/m <sup>3</sup> 15 minutes. Form: Mist None.
2,6-di-tert-butylphenol	None.

**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** : 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.

**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: safety glasses with side-shields.

### 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.

**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.

## Section 8. Exposure controls/personal protection

- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Colorless to light yellow.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 204.44°C (400°F) [Cleveland.]
- 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** : 0.8642
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): 0.2244 cm<sup>2</sup>/s (22.44 cSt)
- Flow time (ISO 2431)** : Not available.
- Pour point** : -48°C (-54.4°F)

## 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	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	LC50 Inhalation Dusts and mists	Rat	>5.53 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
Dec-1-ene, trimers, hydrogenated Distillates (petroleum), solvent-dewaxed heavy paraffinic	LC50 Inhalation Dusts and mists	Rat	>5.53 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
2,6-di-tert-butylphenol	LD50 Dermal	Rabbit	>10 g/kg	-
	LD50 Oral	Rat	1320 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,6-di-tert-butylphenol	Skin - Moderate irritant	Rat	-	0.5 MI	-

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, trimers, hydrogenated	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

#### 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.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.

## Section 11. Toxicological information

<b>Inhalation</b>	: No specific data.
<b>Skin contact</b>	: No specific data.
<b>Ingestion</b>	: No specific data.

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

#### Short term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

#### Long term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

#### Potential chronic health effects

Not available.

<b>General</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Reproductive toxicity</b>	: No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
MARINE HYDRAULIC OIL 22	16666.7	2768.3	N/A	N/A	N/A
Distillates (petroleum), hydrotreated heavy paraffinic	N/A	2500	N/A	N/A	N/A
Dec-1-ene, trimers, hydrogenated	2500	N/A	N/A	N/A	N/A
Distillates (petroleum), solvent-dewaxed heavy paraffinic	N/A	2500	N/A	N/A	N/A
2,6-di-tert-butylphenol	1320	N/A	N/A	N/A	N/A

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	Acute EC50 >100 mg/l	Algae	72 hours
	Acute EC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
	Chronic NOEL >1 mg/l	Daphnia	21 days
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Acute EC50 >100 mg/l	Algae	72 hours
	Acute EC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
	Chronic NOEL >1 mg/l	Daphnia	21 days

### Persistence and degradability

## Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, trimers, hydrogenated	-	-	Inherent
	-	-	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, trimers, hydrogenated	>6	-	high
	>6.5	-	high
Distillates (petroleum), solvent-dewaxed heavy paraffinic 2,6-di-tert-butylphenol	2 to 6	-	high
	4.5	-	high

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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. 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. 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
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.

**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.

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 8(a) PAIR: diphenylamine  
TSCA 8(a) CDR Exempt/Partial exemption: Not determined

**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

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Not applicable.

#### Composition/information on ingredients

Name	%	Classification
Distillates (petroleum), hydrotreated heavy paraffinic	≥50 - ≤75	ASPIRATION HAZARD - Category 1
Dec-1-ene, trimers, hydrogenated	≥10 - ≤25	ASPIRATION HAZARD - Category 1

### State regulations

**Massachusetts** : The following components are listed: OIL MIST, MINERAL; OIL MIST, MINERAL

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

### California Prop. 65

**⚠ WARNING:** This product can expose you to chemicals including Di-isodecyl phthalate, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Information provided is based on industrial use and may not be relevant to consumer applications.

Ingredient name	Concentration (%)	No significant risk level	Maximum acceptable dosage level
Di-isodecyl phthalate	2	-	Yes.
Methanol	0.0018 - 0.009	-	Yes.

### International lists

#### National inventory

**Australia** : Not determined.

**Canada** : Not determined.

**China** : Not determined.

**Europe** : Not determined.

**Japan** : **Japan inventory (ENCS):** Not determined.  
**Japan inventory (ISHL):** Not determined.

## Section 15. Regulatory information

<b>New Zealand</b>	: <input checked="" type="checkbox"/> At least one component is not listed.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### 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.

### Procedure used to derive the classification

Classification	Justification
Not classified.	

### History

**Date of issue/Date of revision** : 02/26/2021

**Version** : 7

### 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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 N/A = Not available  
 SGG = Segregation Group  
 UN = United Nations

Indicates information that has changed from previously issued version.

### Notice to reader

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



## MARINE HYDRAULIC OIL 15

### Section 1. Identification

**Product identifier** : MARINE HYDRAULIC OIL 15  
**Product code** : MH15  
**Other means of identification** : Not available.  
**Product type** : Liquid.

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

Identified uses	
Industrial applications: Hydraulic oil	
Uses advised against	Reason
None known.	

**Supplier's details** : Calumet Branded Products, LLC  
2780 Waterfront Pkwy E. Drive Suite 200  
Indianapolis, IN 46214 USA

**Distributor** : Royal Purple Oils Australia Pty  
Ltd 41/2 Richard Close  
North Rocks  
Sydney, NSW  
2151  
(612) 9683 5078

**Emergency telephone number (with hours of operation)** : 24 hr. International 1-703-527-3887  
Australia: +(61)-290372994

### Section 2. Hazard(s) identification

**Classification of the substance or mixture** : ASPIRATION HAZARD - Category 1

#### GHS label elements

**Hazard pictograms** :



**Signal word** : **DANGER**

**Hazard statements** : **May be fatal if swallowed and enters airways.**

#### Precautionary statements

**Prevention** : Not applicable.

**Response** : IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

**Storage** : Not applicable.

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

**Supplemental label elements** : Not applicable.

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



## Section 3. Composition and ingredient information

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

Ingredient name	% (w/w)	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	≥60 - ≤75	64742-54-7
Dec-1-ene, dimers, hydrogenated	≥10 - ≤20	68649-11-6
4,4'-methylene bis(dibutyldithiocarbamate)	≤5	10254-57-6

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** : 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 if irritation occurs.
- 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** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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** : 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** : May be fatal if swallowed and enters airways.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

## Section 4. First aid measures

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

- 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.
- Specific treatments** : No specific treatment.
- 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.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- 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 thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides

**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 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".

**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).

### Methods and material 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.

## Section 6. Accidental release measures

- 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt 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). Do not swallow. Avoid contact with eyes, skin and clothing. 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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, dimers, hydrogenated  4,4'-methylene bis(dibutylidithiocarbamate)	<p><b>Safe Work Australia (Australia, 12/2019).</b> TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Mist</p> <p><b>DFG MAC-values list (Germany, 7/2019).</b> PEAK: 20 mg/m<sup>3</sup>, 4 times per shift, 15 minutes. Form: respirable fraction TWA: 5 mg/m<sup>3</sup> 8 hours. Form: respirable fraction</p> <p><b>DFG MAC-values list (Germany, 7/2019).</b> PEAK: 160 mg/m<sup>3</sup>, 4 times per shift, 15 minutes. Form: inhalable fraction TWA: 20 mg/m<sup>3</sup> 8 hours. Form: inhalable fraction PEAK: 20 mg/m<sup>3</sup>, 4 times per shift, 15 minutes. Form: respirable fraction TWA: 5 mg/m<sup>3</sup> 8 hours. Form: respirable fraction</p>

- 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.

## Section 8. Exposure controls and personal protection

### 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.
- 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: safety glasses with side-shields.
- 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. 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Colour** : Yellow. [Light]
- Odour** : Odourless.
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 187.78°C (370°F) [Cleveland.]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 0.8522
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.

## Section 9. Physical and chemical properties

<b>Viscosity</b>	: Kinematic (40°C (104°F)): 0.15 cm <sup>2</sup> /s (15 cSt)
<b>Flow time (ISO 2431)</b>	: Not available.
<b>Pour point</b>	: -48°C (-54.4°F)

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: No specific data.
<b>Hazardous decomposition products</b>	: 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	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	LC50 Inhalation Dusts and mists	Rat	>5.53 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Dec-1-ene, dimers, hydrogenated	LC50 Inhalation Dusts and mists	Rat	1.17 mg/l	4 hours
	LD50 Oral	Rat	>5000 mg/kg	-
4,4'-methylene bis (dibutyldithiocarbamate)	LD50 Oral	Rat	16000 mg/kg	-
	LD50 Oral	Rat	16000 mg/kg	-

#### Irritation/Corrosion

Not available.

#### Sensitisation

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

## Section 11. Toxicological information

### Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, dimers, hydrogenated	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

**Information on likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

### 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** : May be fatal if swallowed and enters airways.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

### Delayed and immediate effects as well as 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.

- General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
MARINE HYDRAULIC OIL 15	N/A	N/A	N/A	N/A	5.2
Dec-1-ene, dimers, hydrogenated	N/A	N/A	N/A	N/A	1.17
4,4'-methylene bis(dibutyldithiocarbamate)	16000	N/A	N/A	N/A	N/A

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	Acute EC50 >100 mg/l	Algae	72 hours
	Acute EC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
	Chronic NOEL >1 mg/l	Daphnia	21 days

### Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, dimers, hydrogenated	-	-	Inherent
	-	-	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Distillates (petroleum), hydrotreated heavy paraffinic Dec-1-ene, dimers, hydrogenated 4,4'-methylene bis (dibutyldithiocarbamate)	>6	-	high
	>6.5	-	high
	-	10.86	low

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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 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. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.

**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.

## Section 14. Transport information

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

### Inventory list

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Europe</b>	: Not determined.
<b>Japan</b>	: <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : Not determined.
<b>New Zealand</b>	: <input checked="" type="checkbox"/> At least one component is not listed.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

## Section 16. Any other relevant information

### History

**Date of issue/Date of revision** : 02/26/2021

**Version** : 2.01

### Key to abbreviations

: ADG = Australian Dangerous Goods  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 N/A = Not available  
 SGG = Segregation Group  
 SUSMP = Standard Uniform Schedule of Medicine and Poisons  
 UN = United Nations

### Procedure used to derive the classification

Classification	Justification
ASPIRATION HAZARD - Category 1	Calculation method

Indicates information that has changed from previously issued version.

### Notice to reader



## Section 16. Any other relevant information

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.

# MATERIAL SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in New Zealand.

### PRODUCT

**Product Name:** MOBIL SHC 632  
**Product Description:** Synthetic Base Stocks and Additives  
**Product Code:** 201560500560, 970854-80  
**Intended Use:** Circulating/gear oil

### COMPANY IDENTIFICATION

**Supplier:** Allied Petroleum Limited  
57D McLaughlins Road, Wiri,  
Auckland 2104 New Zealand

**National Poison Control Centre** 0800 764 766  
**General Contact Number** 0800 115 205

## SECTION 2 HAZARDS IDENTIFICATION

**HAZARD CLASSIFICATION:** NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOOD.

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

**Other hazard information:**

### 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.

**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, TETRAMER AND TRIMER HYDROGENATED	68649-12-7	10 - < 20%	H304
PHOSPHORIC ACID, METHYLPHENYL DIPHENYL ESTER	26444-49-5	0.1 - < 0.25%	H400(M factor 1), H410(M factor 1)
TRIPHENYL PHOSPHATE	115-86-6	0.1 - < 0.25%	H400(M factor 1), H411

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Other ingredients determined not to be hazardous.

**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 (CO<sub>2</sub>) 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:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

**FLAMMABILITY PROPERTIES**

**Flash Point [Method]:** >210°C (410°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

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**Autoignition Temperature:** N/D

<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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**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.

<b>SECTION 7</b>	<b>HANDLING AND STORAGE</b>
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**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 type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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## EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source	Year
1-DECENE, TETRAMER AND TRIMER HYDROGENATED	Aerosols (thoracic fraction)	TWA	5 mg/m <sup>3</sup>			ExxonMobil	2020
TRIPHENYL PHOSPHATE		TWA	3 mg/m <sup>3</sup>			New Zealand OELs	2019
TRIPHENYL PHOSPHATE		TWA	3 mg/m <sup>3</sup>			ACGIH	2020

**Exposure limits/standards for materials that can be formed when handling this product:** When mists/aerosols can occur the following is recommended: 5 mg/m<sup>3</sup> - ACGIH TLV (inhalable fraction).

### Biological limits

No biological limits allocated.

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:

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. 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

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**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:** Orange  
**Odour:** Characteristic  
**Odour Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15.6 °C):** 0.867  
**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) [Estimated]  
**Decomposition Temperature:** N/D  
**Vapour Density (Air = 1):** > 2 at 101 kPa [Estimated]  
**Vapour 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:** 320 cSt (320 mm<sup>2</sup>/sec) at 40°C | 38.6 cSt (38.6 mm<sup>2</sup>/sec) at 100°C  
**Molecular Weight:** N/D  
**Oxidizing Properties:** See Hazards Identification Section.

### OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A  
**Pour Point:** -30°C (-22°F)

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<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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**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.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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**ACUTE TOXICITY**

Route of Exposure	Conclusion / Remarks
<b>Inhalation</b>	
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.
<b>Ingestion</b>	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

**OTHER HEALTH EFFECTS FROM SHORT AND LONG TERM EXPOSURE**

Anticipated health effects from sub-chronic, chronic, respiratory or skin sensitization, mutagenicity, reproductive toxicity, carcinogenicity, target organ toxicity (single exposure or repeated exposure), aspiration toxicity and other effects based on human experience and/or experimental data.

**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.

**IARC Classification:**

The following ingredients are cited on the lists below: None.

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--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

**SECTION 12 ECOLOGICAL INFORMATION**

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

**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.

**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



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**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**AIR (IATA):** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**Material is Not Hazardous as defined by the Hazardous Substances (Health and Safety Reform Revocations) Regulations 2017.**

**Product is not regulated according to New Zealand Land Transport Rule.**

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

**Listed or exempt from listing/notification on the following chemical inventories :**

AIIC, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

**Special Cases:**

<b>Inventory</b>	<b>Status</b>
ENCS	Restrictions Apply

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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**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

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Section 15: NZ Dangerous/not Dangerous information was modified.

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DGN: 2007973DNZ (1018277)

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**End of (M)SDS**

# SAFETY DATA SHEET

## PANOLIN HLP SYNTH

Infosafe No.: LPSK1  
ISSUED Date : 04/03/2019  
ISSUED by: Imperial Oil & Chemical Co. Pty  
Ltd

### 1. IDENTIFICATION

#### GHS Product Identifier

PANOLIN HLP SYNTH

#### Company Name

Imperial Oil & Chemical Co. Pty Ltd (ABN 99 103 289 827)

#### Address

Level 1 /120 Upper Heidelberg Road Ivanhoe  
VIC 3079 Australia

#### Telephone/Fax Number

Tel: +61 39497 2511

Fax: +61 3947 2955

#### Emergency phone number

(03) 9497 2511 (24h)

#### E-mail Address

brad.langford@imperialoil.com.au

#### Recommended use of the chemical and restrictions on use

Hydraulic fluid

#### Other Names

Name	Product Code
PANOLIN HLP SYNTH 15,22,32,46,68 AND 100	

### 2. HAZARD IDENTIFICATION

#### GHS classification of the substance/mixture

Not classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Information on Composition

Contains saturated, synthetic esters with additives.

#### Ingredients

Name	CAS	Proportion
Ingredients determined not to be hazardous.		100 %

## 4. FIRST-AID MEASURES

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### **Inhalation**

If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

### **Ingestion**

Do not induce vomiting. Wash out mouth thoroughly with water. Seek medical attention.

### **Skin**

Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.

### **Eye contact**

If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

### **First Aid Facilities**

Eyewash and normal washroom facilities.

### **Advice to Doctor**

Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

---

### **Suitable Extinguishing Media**

Use dry chemical, foam or carbon dioxide.

### **Hazards from Combustion Products**

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide and oxides of nitrogen.

### **Specific Hazards Arising From The Chemical**

This product will burn if exposed to fire, however is not easily ignitable.

### **Decomposition Temperature**

Not available

### **Precautions in connection with Fire**

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

## 6. ACCIDENTAL RELEASE MEASURES

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### **Emergency Procedures**

Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place inert absorbent, non-combustible material onto spillage. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations.

If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

## 7. HANDLING AND STORAGE

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### **Precautions for Safe Handling**

Avoid inhalation of vapours and mists, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of mists or vapours in the work atmosphere. Do not use near ignition sources. Do not pressurise, cut, heat or weld containers as they may contain hazardous residues. Maintain high standards of personal hygiene by washing hands prior to eating, drinking, smoking or using toilet facilities.

### **Conditions for safe storage, including any incompatibilities**

Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep

containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations.

For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids. Reference should also be made to all applicable local and national regulations.

#### **Storage Regulations**

Classified as a Class C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS1940.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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#### **Occupational exposure limit values**

No exposure standards have been established for this material by Safe Work, Australia. However, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels.

#### **Biological Limit Values**

No biological limits allocated.

#### **Appropriate Engineering Controls**

Provide sufficient ventilation to keep airborne levels below the exposure limits or as low as possible. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flameproof exhaust ventilation system is required. Refer to relevant regulations for further information concerning ventilation requirements.

#### **Respiratory Protection**

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

#### **Eye Protection**

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 (series) - Eye Protectors for Industrial Applications.

#### **Hand Protection**

Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

#### **Body Protection**

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Liquid	Appearance	Liquid
Colour	Yellow-orange	Odour	Not available
Decomposition Temperature	Not available	Melting Point	Not available
Boiling Point	Not available	Solubility in Water	Insoluble
Solubility in Organic Solvents	Not available	pH	Not applicable
Vapour Pressure	Not available	Vapour Density (Air=1)	Not available
Evaporation Rate	Not available	Odour Threshold	Not available
Volatile Component	Not available	Pour Point	<-55°C
Partition Coefficient: n-octanol/water	Not available	Density	0.92 g/cm <sup>3</sup>
Flash Point	>240°C	Flammability	Not flammable
Auto-Ignition Temperature	Not available	Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available	Explosion Properties	Not available
Oxidising Properties	Not available	Kinematic Viscosity	Not available
Dynamic Viscosity	Not available		

## 10. STABILITY AND REACTIVITY

### Reactivity

Reacts with incompatible materials.

### Chemical Stability

Stable under normal conditions of storage and handling.

### Conditions to Avoid

Heat, open flames and other sources of ignition.

### Incompatible materials

Strong oxidizing agents.

### Hazardous Decomposition Products

Thermal decomposition may result in the release of toxic and/or irritating fumes including: carbon dioxide and carbon monoxide.

### Possibility of hazardous reactions

Not available

### Hazardous Polymerization

Not available

## 11. TOXICOLOGICAL INFORMATION

### Toxicology Information

Toxicity data for material given below.

### Acute Toxicity - Oral

LD50 (Rat): >2,000mg/kg

### Ingestion

Ingestion of this product may irritate the gastric tract causing nausea and vomiting.

**Inhalation**

Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

**Skin**

May be irritating to skin. The symptoms may include redness, itching and swelling.

**Eye**

May be irritating to eyes. The symptoms may include redness, itching and tearing.

**Respiratory sensitisation**

Not expected to be a respiratory sensitiser.

**Skin Sensitisation**

Not expected to be a skin sensitiser.

**Germ cell mutagenicity**

Not considered to be a mutagenic hazard.

**Carcinogenicity**

Not considered to be a carcinogenic hazard.

**Reproductive Toxicity**

Not considered to be toxic to reproduction.

**STOT-single exposure**

Not expected to cause toxicity to a specific target organ.

**STOT-repeated exposure**

Not expected to cause toxicity to a specific target organ.

**Aspiration Hazard**

Not expected to be an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity**

No ecological data available for this material.

**Persistence and degradability**

Readily biodegradable, according to appropriate OECD test.

**Mobility**

Not available

**Bioaccumulative Potential**

Not available

**Other Adverse Effects**

Not available

**Environmental Protection**

Prevent this material entering waterways, drains and sewers.

## 13. DISPOSAL CONSIDERATIONS

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**Disposal considerations**

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

## 14. TRANSPORT INFORMATION

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**Transport Information**

Road and Rail Transport (ADG Code):

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) (7th edition).

Marine Transport (IMO/IMDG):

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport

by sea.

Air Transport (ICAO/IATA):

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

**U.N. Number**

None Allocated

**UN proper shipping name**

None Allocated

**Transport hazard class(es)**

None Allocated

**IMDG Marine pollutant**

No

**Transport in Bulk**

Not available

**Special Precautions for User**

Not available

## 15. REGULATORY INFORMATION

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**Regulatory information**

Not classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Poisons Schedule**

Not Scheduled

## 16. OTHER INFORMATION

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**Date of preparation or last revision of SDS**

SDS Reviewed: March 2019

Supersedes: February 2014

**References**

- Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
- Standard for the Uniform Scheduling of Medicines and Poisons.
- Australian Code for the Transport of Dangerous Goods by Road & Rail.
- Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
- Workplace exposure standards for airborne contaminants.
- Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).
- Globally Harmonised System of classification and labelling of chemicals.

**Contact Person/Point**

Technical Contact: Brad Langford Tel +61 39497 2511

## END OF SDS

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## SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

**Product Name:** MOBILGREASE XHP 222  
**Product Description:** Base Oil and Additives  
**Product Code:** 2015A0202530, 530436-00, 97E898  
**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  
**SDS Internet Address** [www.exxon.com](http://www.exxon.com), [www.mobil.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

Expected to be harmful to aquatic organisms.

<b>NFPA Hazard ID:</b>	Health: 0	Flammability: 1	Reactivity: 0
<b>HMIS Hazard ID:</b>	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.

Product Name: MOBILGREASE XHP 222  
 Revision Date: 17 Jun 2022  
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<b>SECTION 3</b>	<b>COMPOSITION / INFORMATION ON INGREDIENTS</b>
------------------	---

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)-AR-METHYL-	94270-86-7	0.1 - < 0.25%	H303, H317, H315, H400(M factor 1), H411
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	68411-46-1	1 - < 5%	H316, H402, H412
NAPHTHALENESULFONIC ACID, DINONYL-, CALCIUM SALT	57855-77-3	0.1 - < 1%	H315, H319(2A), H317
NAPHTHENIC ACIDS, ZINC SALTS	12001-85-3	0.1 - < 1%	H317, H319(2A), H401, H411
ZINC DIALKYL DITHIOPHOSPHATE	68457-79-4	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).

<b>SECTION 4</b>	<b>FIRST AID MEASURES</b>
------------------	---------------------------

**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.

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
------------------	-------------------------------

**EXTINGUISHING MEDIA**

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

**FIRE FIGHTING**

Product Name: MOBILGREASE XHP 222

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**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]:** >200°C (392°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.

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:** 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.

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<b>SECTION 7</b>	<b>HANDLING AND STORAGE</b>
------------------	-----------------------------

### 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.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
------------------	--

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

Product Name: MOBILGREASE XHP 222

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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:** Dark Blue

**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]:** >200°C (392°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)

**Decomposition Temperature:** N/D

**Vapor Density (Air = 1):** N/D

**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 mm<sup>2</sup>/sec) at 40 °C

**Oxidizing Properties:** See Hazards Identification Section.

### OTHER INFORMATION

**Freezing Point:** N/D

**Melting Point:** N/D

**DMSO Extract (mineral oil only), IP-346:** < 3 %wt

NOTE: Most physical properties above are for the oil component in the material.

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<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
-------------------	---------------------------------

**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.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
-------------------	----------------------------------

**INFORMATION ON TOXICOLOGICAL EFFECTS**

<b>Hazard Class</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
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.
<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
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.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
<b>Sensitization</b>	
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.
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
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
1H-BENZOTRIAZOLE-1-METHANAMINE, N,N-BIS(2-ETHYLHEXYL)-AR-METHYL-	Oral Lethality: LD50 3313 mg/kg (Rat)

## OTHER INFORMATION

### For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

### 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.

C.I. Solvent blue: Positive in the Ames and Mouse Lymphoma mutagenicity assay.

The following ingredients are cited on the lists below: None.

### --REGULATORY LISTS SEARCHED--

1 = NTP CARC  
2 = NTP SUS

3 = IARC 1  
4 = IARC 2A

5 = IARC 2B  
6 = OSHA CARC

## SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

### ECOTOXICITY

Material -- 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.

### PERSISTENCE AND DEGRADABILITY

#### Biodegradation:

Base oil component -- Expected to be inherently biodegradable

### BIOACCUMULATION POTENTIAL

Base oil component -- 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.

#### 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.

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**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

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**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:** AIIIC, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

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

**SARA (311/312) REPORTABLE GHS HAZARD CLASSES:** None.

**SARA (313) TOXIC RELEASE INVENTORY:**

Product Name: MOBILGREASE XHP 222

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Chemical Name	CAS Number	Typical Value
ZINC DIALKYL DITHIOPHOSPHATE	68457-79-4	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
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	17, 18, 19
ZINC DIALKYL DITHIOPHOSPHATE	68457-79-4	13, 15, 17, 18, 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

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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N/D = Not determined, N/A = Not applicable

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

H303: May be harmful if swallowed; Acute Tox Oral, Cat 5  
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2  
H316: Causes mild skin irritation; Skin Corr/Irritation, Cat 3  
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1  
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1  
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A  
H400: Very toxic to aquatic life; Acute Env Tox, 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

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Composition: Component Table information was modified.  
Hazard Identification: Physical/Chemical Hazard information was added.  
Hazard Identification: Physical/Chemical Hazard information was deleted.

Product Name: MOBILGREASE XHP 222

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Section 01: Company Contact Methods information was modified.  
Section 11 Substance Toxicology table information was added.  
Section 12: Ecological Information - Acute Aquatic Toxicity information was added.  
Section 12: Ecological Information - Acute Aquatic Toxicity information was deleted.  
Section 15: List Citations Table information was modified.  
Section 15: National Chemical Inventory Listing information was modified.  
Section 16: HCode Key information was modified.

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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2006153XUS (1027429)

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Official  
Safety Data Sheet  
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This SDS version supersedes  
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specified product.



Product: EN/VB  
Issue Date: 2021 DEC  
Issued by: PRS  
Version: 1.20  
Page: 1 of 7

**NON-HAZARDOUS CHEMICAL, NON-DANGEROUS GOODS**

**1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION**

Product name: **enviroCLEAN - VIGOR ALL PURPOSE CLEANER**

**Synonyms**

VIGOR  
VIGOR ALL PURPOSE CONCENTRATE 100ML  
VIGOR ALL PURPOSE CONCENTRATE 15L  
VIGOR ALL PURPOSE CONCENTRATE 1L  
VIGOR ALL PURPOSE CONCENTRATE 2L  
VIGOR ALL PURPOSE CONCENTRATE 5L  
VIGOR 205L  
VIGOR 1000L

**Product Code**

TE/002  
EN/VT  
EN/VB  
EN/V1  
EN/V2  
EN/V5  
EN/V205  
EN/V1000

**Recommended use:** Concentrated general-purpose cleaner.

**Supplier:** enviroCARE EARTH  
**ABN:** 82009353182  
**Street Address:** 273 Collier Road  
Bayswater WA 6053  
Australia  
**Telephone:** 1300 887 519

**Emergency Telephone number:** 1300 887 519 (8.00am-4.30pm: Mon-Fri, AWST)

**2. HAZARDS IDENTIFICATION**

Based on available information, this material is not classified as hazardous according to criteria of Safe Work Australia.

**Poison Schedule:** Not Applicable

**DANGEROUS GOOD CLASSIFICATION**

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

**3. COMPOSITION INFORMATION**

CHEMICAL ENTITY	CAS NO	PROPORTION
Silicic acid (H <sub>2</sub> SiO <sub>3</sub> ), disodium salt	6834-92-0	0-1 % (w/w)
Sodium hydroxide (Na(OH))	1310-73-2	0-1 % (w/w)
Ingredients determined to be Non-Hazardous		Balance

**4. FIRST AID MEASURES**

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800

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Web1: [www.westchem.com.au](http://www.westchem.com.au) Web2: [www.envirocareearth.com.au](http://www.envirocareearth.com.au)



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764 766).

**Inhalation:** No such emergency care is anticipated. No such emergencies were reported.

**Skin Contact:** No such emergency care is anticipated. No such emergencies were reported. If irritation persists, seek medical advice immediately.

**Eye contact:** If in eyes wash out immediately with water. In all cases of eye contamination, it is a sensible precaution to seek medical advice.

**Ingestion:** Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

**Notes to physician:** Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

**Hazchem Code:** Not applicable.

**Suitable extinguishing media:** If material is involved in a fire use water fog (or if unavailable fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

**Specific hazards:** Non-combustible material.

**Firefighting further advice:** Not combustible, however following evaporation of aqueous component residual material can burn if ignited.

## 6. ACCIDENTAL RELEASE MEASURES

### SMALL SPILLS

Take necessary precautions to prevent skin and eye contamination. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

### LARGE SPILLS

Slippery when spilt. Avoid accidents, clean up immediately. Take necessary precautions to prevent skin and eye contamination. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal.

**Dangerous Goods – Initial Emergency Response Guide No:** Not applicable

## 7. HANDLING AND STORAGE

**Handling:** Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of vapour.

**Storage:** Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Always keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**National occupational exposure limits:**

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	TWA		STEL		NOTICES
	ppm	mg/m3	ppm	mg/m3	
Sodium hydroxide	-	2 Peak limitation	-	-	-

As published by Safe Work Australia.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15-minute period which should not be exceeded at any time during a normal eight-hour workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept too as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

**Biological Limit Values:** As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

**Engineering Measures:** Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator. Vapour heavier than air - prevent concentration in hollows or sumps. Do NOT enter confined spaces where vapour may have collected.

**Personal Protection Equipment:**

**Special Note:**

Personal Protective Equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted.

The selection of PPE is dependent on a full risk assessment. The risk assessment should consider the work situation, physical form of chemical, handling method and volume, environmental factors and area of application. If the outcome of risk assessment is considerably low, still manufacturer recommends to use minimum PPE stipulated by the chemical industry practices. Ex: Safety Glasses, Impervious Gloves

GLOVES, SAFETY GLASSES.



Available information suggests that gloves made from natural rubber, nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing

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and other protective equipment before storing or re-using.

**Hygiene measures:** Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of vapour. Ensure that eyewash stations and safety showers are close to the workstation location.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Base Units:</b>	Litres
<b>Form:</b>	Clear Liquid
<b>Colour:</b>	Clear, Straw coloured
<b>Odour:</b>	Slight citrus Odour
<b>Solubility in water:</b>	Completely Soluble
<b>Specific Gravity (20 °C):</b>	1.02 - 1.06
<b>Vapour Pressure (20 °C):</b>	Approx. 18mm Hg @ 25°C
<b>Flash Point (°C):</b>	Not Applicable
<b>Flammability Limits (%):</b>	No data available
<b>Auto ignition Temperature (°C):</b>	No data available
<b>Boiling Point/Range (°C):</b>	100°C
<b>pH:</b>	10.5-11.5 (1% w/w solution)

(Typical values only - consult specification sheet)  
N Av = Not available, N App = Not applicable

## 10. STABILITY AND REACTIVITY

**Chemical stability:** This material is thermally stable when stored and used as directed.

**Conditions to avoid:** Elevated temperatures and sources of ignition.

**Incompatible materials:** Oxidising agents.

**Hazardous decomposition products:** Oxides of carbon and nitrogen, smoke and other toxic fumes.

**Hazardous reactions:** No known hazardous reactions.

## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

### Acute Effects

**Inhalation:** Material may be an irritant to mucous membranes and respiratory tract.

**Skin contact:** Contact with skin may result in irritation.

**Ingestion:** Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

**Eye contact:** May be an eye irritant.

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### Acute toxicity

**Inhalation:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >20 mg/L

**Skin contact:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg

**Ingestion:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg

**Corrosion/Irritancy:** Eye: this material has been classified as not corrosive or irritating to eyes. Skin: this material has been classified as not corrosive or irritating to skin.

**Sensitisation:** Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.

**Aspiration hazard:** This material has been classified as non-hazardous.

**Specific target organ toxicity (single exposure):** This material has been classified as non-hazardous.

### Chronic Toxicity

**Mutagenicity:** This material has been classified as non-hazardous.

**Carcinogenicity:** This material has been classified as non-hazardous.

**Reproductive toxicity (including via lactation):** This material has been classified as non-hazardous.

**Specific target organ toxicity (repeat exposure):** This material has been classified as non-hazardous.

## 12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

**Acute aquatic hazard:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >100 mg/L

**Long-term aquatic hazard:** This material has been classified as non-hazardous. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): >100 mg/L, where the substance is not rapidly degradable and/or BCF < 500 and/or log  $K_{ow}$  < 4.

**Eco toxicity:** No information available.

**Persistence and degradability:** No information available.

**Bio accumulative potential:** No information available.

**Mobility:** No information available.

## 13. DISPOSAL CONSIDERATIONS

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Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

## 14. TRANSPORT INFORMATION

### ROAD AND RAIL TRANSPORT

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

### MARINE TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

### AIR TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

## 15. REGULATORY INFORMATION

### This material is not subject to the following international agreements:

Montreal Protocol (Ozone depleting substances)  
The Stockholm Convention (Persistent Organic Pollutants)  
The Rotterdam Convention (Prior Informed Consent)  
Basel Convention (Hazardous Waste)  
International Convention for the Prevention of Pollution from Ships (MARPOL)

### This material/constituent(s) is covered by the following requirements:

- All components of this product are listed on or exempt from the Australian Inventory of Chemical Substances (AICS).

## 16. OTHER INFORMATION

Reasons for issue: Updated version 1.20 from previous version  
Issue date: 20/12/2021  
Version: 1.20  
Able Rating: Green

### DISCLAIMER:

The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. This product was classified according to Globally Harmonised System of Classification and Labelling of Chemicals (GHS) Revision Version 07.

Able Westchem MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Able Westchem product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Able Westchem product, some of which are uniquely

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within the user's knowledge and control, it is essential that the user evaluate the Able Westchem product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. For this reason, Able Westchem always recommends a user perform a test patch or trial in small scale or in an inconspicuous area prior to full application to limit possible damage. Testing before beginning any project is also the best way to ensure product effectiveness.

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## GAMAZYME FC

### Wilhelmsen Ships Service Pty Ltd

Part Number: 659391

Version No: 7.13

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: 25/07/2023

Print Date: 01/08/2023

L.GHS.AUS.EN

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

##### Product Identifier

Product name	GAMAZYME FC
Chemical Name	Not Applicable
Synonyms	Product Part Number: 659391 (4 x 5 liter)
Chemical formula	Not Applicable
Other means of identification	659391

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

Relevant identified uses	Liquid formulation containing a mixture of microorganisms used as floor cleaner. Pr No: 54316 Norway
--------------------------	--

##### Details of the manufacturer or supplier of the safety data sheet

Registered company name	Wilhelmsen Ships Service Pty Ltd	Outback (M)SDS portal: <a href="http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen">http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen</a>	Wilhelmsen Ships Service AS* Central Warehouse
Address	Suite 2, Level 17/636 St Kilda Road Melbourne ViC 3004 Australia	-----Use our Outback portal to obtain our (M)SDSs in other languages and/or format.----- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com ----- Norway	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+61 3 9630 0900	Not Available	+31 10 4877 777
Fax	Not Available	Not Available	Not Available
Website	<a href="http://www.wilhelmsen.com/">http://www.wilhelmsen.com/</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
Email	wss.melbourne@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com

Registered company name	Wilhelmsen Ships Service AS* Central Warehouse
Address	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+31 10 4877 777
Fax	Not Available
Website	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
Email	wss.rotterdam@wilhelmsen.com

##### Emergency telephone number

Association / Organisation	Wilhelmsen Ships Service, Melbourne, AUSTRALIA	24hrs - Chemwatch	Dutch nat. poison centre
----------------------------	--	-------------------	--------------------------

Emergency telephone numbers	+61 3 9630 0998	+31-10-4877700	+ 31 88 7558561
Other emergency telephone numbers	+31-10-4877700	+31-10-4877700	+ 31 10 4877700
Association / Organisation	Dutch nat. poison centre	CHEMWATCH EMERGENCY RESPONSE (24/7)	
Emergency telephone numbers	+ 31 30 274 88 88	+61 1800 951 288	
Other emergency telephone numbers	+ 31-10-4877700	+61 3 9573 3188	


Once connected and if the message is not in your preferred language then please dial 01

## SECTION 2 Hazards identification

### Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification [1]	Serious Eye Damage/Eye Irritation Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)	
Signal word	<b>Danger</b>

### Hazard statement(s)

H318	Causes serious eye damage.
------	----------------------------

### Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

### Precautionary statement(s) Prevention

P280	Wear protective gloves, protective clothing, eye protection and face protection.
------	--

### Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.

### Precautionary statement(s) Storage

Not Applicable

### Precautionary statement(s) Disposal

Not Applicable

## SECTION 3 Composition / information on ingredients

### Substances

See section below for composition of Mixtures

### Mixtures

CAS No	%[weight]	Name
68439-46-3*	<5	<u>Polyethoxylated alcohols</u>
9001-62-1*	<1	<u>lipase</u>
2634-33-5	<0,1	<u>1,2-benzisothiazoline-3-one</u>
9004-82-4	1-2	<u>sodium lauryl ether sulfate</u>
64-02-8	<1	<u>EDTA tetrasodium salt</u>
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available	

## SECTION 4 First aid measures

### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 Firefighting measures

### Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>May emit corrosive fumes.</p>
<b>HAZCHEM</b>	Not Applicable

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

## Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Absorb or contain isothiazolinone liquid spills with sand, earth, inert material or vermiculite.</li> <li>▶ The absorbent (and surface soil to a depth sufficient to remove all of the biocide) should be shovelled into a drum and treated with an 11% solution of sodium metabisulfite (Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>) or sodium bisulfite (NaHSO<sub>3</sub>), or 12% sodium sulfite (Na<sub>2</sub>SO<sub>3</sub>) and 8% hydrochloric acid (HCl).</li> <li>▶ Glutathione has also been used to inactivate the isothiazolinones.</li> <li>▶ Use 20 volumes of decontaminating solution for each volume of biocide, and let containers stand for at least 30 minutes to deactivate microbicide before disposal.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> <li>▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with moisture.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> </ul>
<b>Other information</b>	

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	None known



X — Must not be stored together

O — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Not Available

#### Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
EDTA tetrasodium salt	82 mg/m <sup>3</sup>	900 mg/m <sup>3</sup>	5,500 mg/m <sup>3</sup>
EDTA tetrasodium salt	75 mg/m <sup>3</sup>	830 mg/m <sup>3</sup>	5,000 mg/m <sup>3</sup>

Continued...

Ingredient	Original IDLH	Revised IDLH
Polyethoxylated alcohols	Not Available	Not Available
lipase	Not Available	Not Available
1,2-benzisothiazoline-3-one	Not Available	Not Available
sodium lauryl ether sulfate	Not Available	Not Available
EDTA tetrasodium salt	Not Available	Not Available

### Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Polyethoxylated alcohols	E	≤ 0.1 ppm
1,2-benzisothiazoline-3-one	E	≤ 0.01 mg/m <sup>3</sup>
sodium lauryl ether sulfate	E	≤ 0.01 mg/m <sup>3</sup>
EDTA tetrasodium salt	E	≤ 0.01 mg/m <sup>3</sup>

#### Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

### MATERIAL DATA


Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

1,2-Benzisothiazoline-3-one (BIT) produces sensitising effects and causes skin irritation at concentrations of 0.05%. Solutions containing the substance should contain levels considerably lower than 0.05%.

CEL TWA: 0.1 mg/m<sup>3</sup>; STEL 0.3 mg/m<sup>3</sup> total isothiazolinones (Rohm and Haas)

(CEL = Chemwatch Exposure Limit)

### Exposure controls

<b>Appropriate engineering controls</b>	<p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p>
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses 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.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>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 moisturiser is recommended.</p> <ul style="list-style-type: none"> <li>▶ Butyl rubber gloves</li> <li>· Nitrile rubber gloves (Note: Nitric acid penetrates nitrile gloves in a few minutes.)</li> </ul>

	<ul style="list-style-type: none"> <li>▸ Wear chemical protective gloves, e.g. PVC.</li> <li>▸ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▸ Overalls.</li> <li>▸ P.V.C apron.</li> <li>▸ Barrier cream.</li> <li>▸ Skin cleansing cream.</li> <li>▸ Eye wash unit.</li> </ul>

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	Clear brown liquid with characteristic odour mixes with water.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.00
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	8-9.5	<b>Decomposition temperature (°C)</b>	Not Applicable
<b>Melting point / freezing point (°C)</b>	Not Applicable	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	~100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available BuAC = 1	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Applicable
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	Not Applicable
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	Not Applicable

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▸ Unstable in the presence of incompatible materials.</li> <li>▸ Product is considered stable.</li> <li>▸ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

### Information on toxicological effects

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).



	<p>Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.</p> <p>Isothiazolinones are moderately to highly toxic by oral administration. The major signs of toxicity were severe gastric irritation, lethargy, and ataxia</p>
<b>Skin Contact</b>	<p>The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Solutions of 0.5% strength 1,2-benzisothiazoline-3-one (BIT) are irritating to the skin. Allergic effects also begin at 0.05% and have been confirmed in a series of case and patch test studies. When the substance was applied to human volunteers under an occlusive patch the maximum tolerated doses was 0.05%. Five hours after application of 0.1% (1000 ppm) one person showed moderate erythema with papule development which was interpreted as a reaction to the sticking plaster; in four persons there was mild reddening of the skin. The reaction had ameliorated in several persons after 72 hours. A second application produced various severe dermal reactions (erythema and papules) in 8 persons. A third application to several of the group produced erythema.</p> <p>Aqueous solutions of isothiazolinones may be irritating or even corrosive depending on concentration. Solutions containing more than 0.5% (5000 ppm active substance) may produce severe irritation of human skin whilst solutions containing more than 100 ppm may irritate the skin.</p>
<b>Eye</b>	<p>When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.</p> <p>Solutions containing isothiazolinones may produce corrosion of the mucous membranes and cornea. Instillation of 0.1 ml of an aqueous solution containing 560 ppm isothiazolinone into rabbit eye did not produce irritation whereas concentrations, typically around 3% and 5.5 %, were severely irritating or corrosive to the eye.. Symptoms included clouding of the cornea, chemosis and swelling of the eyelids.</p>
<b>Chronic</b>	<p>Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.</p> <p>In a teratogenic study in rats concentrations of up to 40 mg/kg 1,2-benzisothiazoline-3-one (BIT) were neither embryotoxic nor teratogenic. The material is not mutagenic. In a 2-year carcinogenicity study with rats, BIT did not produce excess tumours. The results derived from this test are questionable because no dose series was administered and because there were too few animals.</p> <p>A 90-day study with beagle dogs receiving oral doses showed reduced food consumption and body weight gain as well as mild anaemia, increases in the weights of liver and in male animals, brain and spleen weights.</p> <p>The no-observed-effect-level (NOEL) was given as 165 mg/kg (ie 0.5 BIT in the diet). A 90-day study with rats receiving dietary BIT showed reduced liver and pituitary weights in males.</p> <p>The isothiazolinones are known contact sensitizers. Data are presented which demonstrate that, in comparison with the chlorinated and dichlorinated compounds which share immunological cross-reactivity, the non-chlorinated isothiazolinones have a lower potential for sensitization and no documented immunological cross-reaction with the chlorinated isothiazolinones. The risk of sensitization depends on how contact with the product occurs. The risk is greater when the skin barrier has been damaged and smaller when the skin is healthy. Dermatological studies have demonstrated that mixed isothiazolinone concentrations below 20 ppm may cause sensitisation and that allergic reactions can be provoked in sensitized persons even with concentrations in the range of 7-15 ppm active isothiazolinones.</p> <p>The isothiazolinones are a group of heterocyclic sulfur-containing compounds. In general all are electrophilic molecules containing an activated N-S bond that enables them with nucleophilic cell entities, thus exerting biocidal activity.</p>

GAMAZYME FC	TOXICITY	IRRITATION
	Not Available	Not Available
Polyethoxylated alcohols	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[2]</sup>	Eye (human): SEVERE
	Dermal (rabbit) LD50: >5000 mg/kg * <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (Rat) LD50: 1378 mg/kg <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Rat) LD50: 1400 mg/kg * <sup>[2]</sup>	Skin: SEVERE
lipase	TOXICITY	IRRITATION
	Intraperitoneal (mouse) LD50: 833 mg/kg <sup>[2]</sup>	Not Available
	Intraperitoneal (rat) LD50: 630 mg/kg <sup>[2]</sup>	
	Intravenous (Mouse) LD50: 127 mg/kg <sup>[2]</sup>	
	Intravenous (rat) LD50: 104 mg/kg <sup>[2]</sup>	
1,2-benzisothiazoline-3-one	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: adverse effect observed (irreversible damage) <sup>[1]</sup>
Oral (Rat) LD50: 454 mg/kg <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>	

sodium lauryl ether sulfate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (Rat) LD50: 1600 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
		Skin (rabbit):25 mg/24 hr moderate
		Skin: adverse effect observed (irritating) <sup>[1]</sup>
EDTA tetrasodium salt	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (Rat) LD50: 630 mg/kg <sup>[2]</sup>	Eyes (rabbit): 1.9 mg
		Eyes (rabbit):100 mg/24h-moderate
		Skin (rabbit):500 mg/24h-moderate *[BASF]
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Polyethoxylated alcohols	<p>Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products . Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response. Moreover, no fatal case of poisoning with alcohol ethoxylates has ever been reported. Multiple studies investigating the acute toxicity of alcohol ethoxylates have shown that the use of these compounds is of low concern in terms of oral and dermal toxicity .</p> <p>Clinical animal studies indicate these chemicals may produce gastrointestinal irritation such as ulcerations of the stomach, pilo-erection, diarrhea, and lethargy. Similarly, slight to severe irritation of the skin or eye was generated when undiluted alcohol ethoxylates were applied to the skin and eyes of rabbits and rats.</p> <p>Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units:  EO &lt; 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes)  EO &gt; 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41  EO &gt; 15-20 gives Harmful (Xn) with R22-41  &gt;20 EO is not classified (CESIO 2000)</p> <p>Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin) .  AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC</p>
	<p>In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO<sub>2</sub>).Orally dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). Half of the absorbed surfactant was excreted promptly in the urine and smaller amounts of AE appeared in the faeces and expired air (CO<sub>2</sub>) . The metabolism of C12 AE yields PEG, carboxylic acids, and CO<sub>2</sub> as metabolites. The LD50 values after oral administration to rats range from about 1-15 g/kg body weight indicating a low to moderate acute toxicity.</p> <p>The ability of nonionic surfactants to cause a swelling of the stratum corneum of guinea pig skin has been studied. The swelling mechanism of the skin involves a combination of ionic binding of the hydrophilic group as well as hydrophobic interactions of the alkyl chain with the substrate.</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.</p> <p>Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration. Dermal (rabbit): 4000 mg/kg * Somnolence, ataxia, diarrhoea recorded.</p>
	<p>In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance.</p> <p>Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non-professional users. In addition, potential exposure of non-users of biocidal products (i.e. the general public) may occur indirectly via the environment, for example through drinking water, the food chain, as well as through atmospheric and residential exposure. Particular attention should be paid to the exposure of vulnerable sub-populations, such as the elderly, pregnant women, and children. Also pets and other domestic animals can be exposed indirectly following the application of biocidal products.</p> <p>The predominant fate of the thiazole ring is oxidative ring scission catalysed by cytochrome P450 (CYP) and formation of the corresponding alpha-dicarbonyl metabolites and thioamide derivatives. The well-established toxicity associated with thioamides and thioureas has led to the speculation that thiazole toxicity is attributed to ring scission yielding the corresponding thioamide metabolite. Ring opening has also been observed in benzothiazoles. For instance, benzothiazole</p>
1,2-BENZISOTHIAZOLINE-3-ONE	

	<p>itself is converted to S-methylmercaptoaniline.</p> <p><b>Acute toxicity</b> data show that 1,2-benzisothiazoline-3-one (BIT) is moderately toxic by the oral and dermal routes but that this chemical is a severe eye irritant. Irritation to the skin from acute data show only mild skin irritation , but repeated dermal application indicated a more significant skin irritation response.</p> <p>The neurotoxicity observed in the rat acute oral toxicity study (piloerection and upward curvature of the spine at 300 mg/kg and above; decreased activity, prostration, decreased abdominal muscle tone, reduced righting reflex, and decreased rate and depth of breathing at 900 mg/kg) and the acute dermal toxicity study (upward curvature of the spine was observed in increased incidence, but this was absent after day 5 post-dose at a dose of 2000 mg/kg) were felt to be at exposures in excess of those expected from the use pattern of this pesticide and that such effects would not be observed at estimated exposure doses.</p> <p><b>Subchronic oral toxicity</b> studies showed systemic effects after repeated oral administration including decreased body weight, increased incidence of forestomach hyperplasia, and non-glandular stomach lesions in rats. In dogs, the effects occurred at lower doses than in rats, and included alterations in blood chemistry (decreased plasma albumin, total protein, and alanine aminotransferase) and increased absolute liver weight.</p> <p><b>Developmental toxicity</b> studies were conducted in rats with maternal effects including decreased body weight gain, decreased food consumption, and clinical toxicity signs (audible breathing, haircoat staining of the anogenital region, dry brown material around the nasal area) as well as increased mortality. Developmental effects consisted of increases in skeletal abnormalities (extra sites of ossification of skull bones, unossified sternbrae) but not external or visceral abnormalities.</p>
<p><b>SODIUM LAURYL ETHER SULFATE</b></p>	<p>* [CESIO]</p> <p>Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air.</p> <p>Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol ) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture .</p> <p>On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their susceptibility towards autoxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose ACD to these compounds by patch testing.</p> <p>Allergic Contact Dermatitis—Formation, Structural Requirements, and Reactivity of Skin Sensitizers. Ann-Therese Karlberg et al; Chem.</p> <p>Alkyl ether sulfates (alcohol or alkyl ethoxysulfates) (AES) (syn: AAASD ,alkyl alcohol alkoxyate sulfates, SLES) are generally classified according to Comité Européen des Agents de Surface et leurs Intermédiaires Organiques (CESIO) as Irritant (Xi) with the risk phrases R38 (Irritating to skin) and R36 (Irritating to eyes). An exception has been made for AES (2-3E0) in a concentration of 70-75% where R36 is substituted with R41 (Risk of serious damage to eyes).</p> <p>AES are not included in Annex 1 of the list of dangerous substances of Council Directive 67/548/EEC.</p> <p>In assessing this family the Cosmetic Ingredient Review (CIR) Expert Panel recognized that most of the acute oral toxicity, dermal irritation and sensitization, subchronic and chronic oral toxicity, reproductive and developmental toxicity, carcinogenicity, and photosensitization studies have been conducted on ammonium laureth sulfate and sodium laureth sulfate. Sodium and ammonium laureth sulfate have not evoked adverse responses in any toxicological testing, including acute oral toxicity, sub-chronic and chronic oral toxicity, reproductive and develop-mental toxicity, carcinogenicity, and photosensitization studies. These data, however, are considered a sufficient basis for concluding that the other ingredients are safe in the practices of use and concentration described in the safety assessment because of the fundamental chemical similarities between them and because they all are chemically similar salts(salts are expected to be dissociated in any product formulation independent of whether the salt is sodium, ammonium, magnesium, or zinc) of sulfated ethoxylated alcohols, and they all function as surfactants in cosmetic formulations. Based on these considerations, safety test data on one ingredient may be extrapolated to all of them. The panel noted that sodium laureth sulfate and ammonium laureth sulfate can produce eye and/or skin irritation in experimental animals and in some human test subjects; irritation may occur in some users of cosmetic formulations containing these ingredients. The irritant effects, however, are similar to those produced by other detergents, and the severity of the irritation appears to increase directly with concentration</p> <p><b>Acute toxicity:</b> AES are of low acute toxicity.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
<p><b>EDTA TETRASODIUM SALT</b></p>	<p>* Sigma Aldrich - for the dihydrate</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>For ethylenediaminetetraacetic acid (EDTA) and its salts: EDTA is a strong organic acid (approximately 1000 times stronger than acetic acid). It has a high affinity for alkaline-earth ions (for example, calcium and magnesium) and heavy-metal ions (for example, lead and mercury). This affinity generally results in the formation of highly stable and soluble hexadentate chelate complexes. EDTA s ability to complex is used</p>

	<p>commercially to either promote or inhibit chemical reactions, depending on application.</p> <p>EDTA and its salts are expected to be absorbed by the lungs and gastrointestinal tract; absorption through the skin is unlikely.</p> <p>In general, EDTA and its salts are mild skin irritants but considered severe eye irritants. The greatest risk in the human body will occur when the EDTA attempts to scavenge the trace metals used and required by the body.</p> <p>The binding of divalent and trivalent cations by EDTA can cause mineral deficiencies, which seem to be responsible for all of the known pharmacological effects. Sensitivity to the toxic effects of EDTA is, at least in part, related to the deficiency of zinc.</p> <p>Several short term studies, reported no adverse effects from administering doses up to 5% of EDTA and its salts to lab rodents daily and for several weeks. Only diarrhoea and lowered food consumption were reported in animals given 5% disodium EDTA.</p>
<b>1,2-BENZISOTHIAZOLINE-3-ONE &amp; EDTA TETRASODIUM SALT</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>
<b>1,2-BENZISOTHIAZOLINE-3-ONE &amp; SODIUM LAURYL ETHER SULFATE</b>	No significant acute toxicological data identified in literature search.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

### Toxicity

GAMAZYME FC	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Polyethoxylated alcohols	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	2.217-3.523mg/l	4
	EC50	96h	Algae or other aquatic plants	1.4mg/l	2
	LC50	96h	Fish	7mg/l	Not Available
	NOEC(ECx)	720h	Fish	0.11-0.28mg/l	2
lipase	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	94.2mg/l	2
	EC50	48h	Crustacea	>262.3mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	38.1mg/l	2
	LC50	96h	Fish	>262.3mg/l	2
1,2-benzisothiazoline-3-one	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	0.07mg/L	2
	EC50	48h	Crustacea	0.097mg/L	4
	NOEC(ECx)	72h	Algae or other aquatic plants	0.04mg/L	2
	LC50	96h	Fish	0.067-0.29mg/L	4

## GAMAZYME FC

sodium lauryl ether sulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	2.43-4.01mg/l	4
	NOEC(ECx)	48h	Fish	0.26mg/L	5

EDTA tetrasodium salt	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	1.01mg/l	1
	EC50	48h	Crustacea	>100mg/l	2
	LC50	96h	Fish	>500mg/l	Not Available
	NOEC(ECx)	72h	Algae or other aquatic plants	0.39mg/l	1

**Legend:** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

The isothiazolinones are very toxic to marine organisms (fish, Daphnia magna and algae)

The high water solubility and low log Kow values of several chlorinated and non-chlorinated indicate a low potential for bioaccumulation.

Studies of 5-chloro-2-methyl-4-isothiazolin-3-one (CMI) in bluegill sunfish (*Lepomis macrochirus*) show BCF values of 102, 114 and 67 at nominal concentrations of 0.02, 0.12 and 0.8 mg/l. The BCF for 2-methyl-4-isothiazolin-3-one (MI) was determined at 2.3 at a nominal concentration of 0.12 mg/l

Primary biodegradation of MI and CMI occurred with half-lives of less than 24 hours in aerobic and anoxic sediments, and within a period of less than one week the parent compounds were depleted to very low levels that could not be clearly distinguished from analytical artifacts. The ultimate aerobic biodegradability of both MI and CMI attained levels of > 55% within 29 days. Furthermore, the proposed metabolites of MI and CMI are considered to have a low aquatic toxicity on the basis of QSAR estimates and the measured toxicity of the structurally related N-(n-octyl) malonamic acid.

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

#### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

#### Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

### SECTION 13 Disposal considerations

#### Waste treatment methods

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▸ Reduction</li> <li>▸ Reuse</li> <li>▸ Recycling</li> <li>▸ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▸ Where in doubt contact the responsible authority.</li> <li>▸ Consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>▸ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
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### SECTION 14 Transport information

**Labels Required**

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Polyethoxylated alcohols	Not Available
lipase	Not Available
1,2-benzisothiazoline-3-one	Not Available
sodium lauryl ether sulfate	Not Available
EDTA tetrasodium salt	Not Available

**Transport in bulk in accordance with the IGC Code**

Product name	Ship Type
Polyethoxylated alcohols	Not Available
lipase	Not Available
1,2-benzisothiazoline-3-one	Not Available
sodium lauryl ether sulfate	Not Available
EDTA tetrasodium salt	Not Available

**SECTION 15 Regulatory information**

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

**Polyethoxylated alcohols is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

**lipase is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

**1,2-benzisothiazoline-3-one is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

**sodium lauryl ether sulfate is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

**EDTA tetrasodium salt is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes

Continued...

National Inventory	Status
Canada - NDSL	No (Polyethoxylated alcohols; lipase; 1,2-benzisothiazoline-3-one; sodium lauryl ether sulfate; EDTA tetrasodium salt)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (Polyethoxylated alcohols)
Japan - ENCS	No (lipase)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (sodium lauryl ether sulfate)
Vietnam - NCI	Yes
Russia - FBEPH	No (Polyethoxylated alcohols)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 Other information

Revision Date	25/07/2023
Initial Date	24/11/2017

### CONTACT POINT

- For quotations contact your local Customer Services - <http://wssdirectory.wilhelmsen.com/#/customerservices> - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Compliance Manager, - Email: [wss.global.sdsinfo@wilhelmsen.com](mailto:wss.global.sdsinfo@wilhelmsen.com) - Telephone: Tel.: +47 67584000

### SDS Version Summary

Version	Date of Update	Sections Updated
6.13	25/07/2023	Toxicological information - Acute Health (skin), Hazards identification - Classification, Ecological Information - Environmental, First Aid measures - First Aid (skin), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Exposure controls / personal protection - Personal Protection (hands/feet), Identification of the substance / mixture and of the company / undertaking - Use

### 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.

The 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. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average  
PC - STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit,  
IDLH: Immediately Dangerous to Life or Health Concentrations  
ES: Exposure Standard  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index  
AII: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

## Notes

**"This composition meets the criteria for not being harmful to the marine environment according to MARPOL Annex V and may be discharged into the sea after being used after its intended purpose"**

**"Microbial classification: All the bacteria contained in this formulation are of group 1 according to Directive 2000/54/EC (on the protection of workers from risks related to exposure to biological agents at work). Microorganisms from group 1 are unlikely to cause a human disease. When handling the product, precautions described in Annex VI of Directive 2000/54/EC have to be taken into consideration in order to make a risk assessment. Annex VI: Containment principles for industrial processes involving group 2, 3 or 4 biological agents."**

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## UNITOR USC

### Wilhelmsen Ships Service AS

Part Number: 607819 (12 x 1 liter)

Version No: 9.12

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: 07/12/2022

Print Date: 07/02/2023

L.REACH.NOR.EN

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

##### 1.1. Product Identifier

Product name	UNITOR USC
Chemical Name	Not Applicable
Synonyms	Pr No: 53985
Chemical formula	Not Applicable
Other means of identification	607819 (12 x 1 liter), 607819

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

Product Category Consumer	PC35	Washing and cleaning products
Sectors of Use	SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Relevant identified uses	Cleaning agent for Ultrasonic Cleaners	
Uses advised against	No specific uses advised against are identified.	

##### 1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	Wilhelmsen Ships Service AS	Outback (M)SDS portal: <a href="http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen">http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen</a>	Wilhelmsen Ships Service AS* Central Warehouse
Address	Strandveien 20 Lysaker 1366 Norway	-----Use our Outback portal to obtain our (M)SDSs in other languages and/or format.----- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com ----- Norway	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+47 67 58 40 00	Not Available	+31 10 4877 777
Fax	Not Available	Not Available	Not Available
Website	<a href="http://www.wilhelmsen.com/">http://www.wilhelmsen.com/</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
Email	wss.norway.cs@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com

Registered company name	Wilhelmsen Ships Service AS* Central Warehouse
Address	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+31 10 4877 777
Fax	Not Available
Website	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
Email	wss.rotterdam@wilhelmsen.com

#### 1.4. Emergency telephone number

Association / Organisation	Giftinformasjonssentralen - 24 timer	24hrs - Chemwatch	Dutch nat. poison centre
Emergency telephone numbers	+47 22591300	+31-10-4877700	+ 31 88 7558561
Other emergency telephone numbers	+31-10-4877700	+31-10-4877700	+ 31 10 4877700

Association / Organisation	Dutch nat. poison centre	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+ 31 30 274 88 88	+47 23 25 25 84
Other emergency telephone numbers	+ 31-10-4877700	+61 3 9573 3188


Once connected and if the message is not in your preferred language then please dial 01

## SECTION 2 Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	H318 - Serious Eye Damage/Eye Irritation Category 1
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### 2.2. Label elements

Hazard pictogram(s)	
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Signal word	<b>Danger</b>
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### Hazard statement(s)

H318	Causes serious eye damage.
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### Supplementary statement(s)

Not Applicable

### Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

### Precautionary statement(s) Prevention

P280	Wear protective gloves, protective clothing, eye protection and face protection.
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### Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.

### Precautionary statement(s) Storage

Not Applicable

### Precautionary statement(s) Disposal

Not Applicable

### 2.3. Other hazards

<b>diethylene glycol monobutyl ether</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
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## SECTION 3 Composition / information on ingredients

### 3.1. Substances

See 'Composition on ingredients' in Section 3.2

### 3.2. Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.497-19-8 2.207-838-8 3.011-005-00-2 4.Not Available	1-5	<u>sodium carbonate</u>	Serious Eye Damage/Eye Irritation Category 2; H319 [2]	Not Available	Not Available
1.160875-66-1* 2.Not Available 3.Not Available 4.Not Available	5-10	<u>Fatty alcohol ethoxylate</u>	Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 4; H318, H302 [1]	Not Available	Not Available
1.161074-93-7* 2.500-529-1 3.Not Available 4.Not Available	1-5	<u>Alkylglucoside</u>	Serious Eye Damage/Eye Irritation Category 1; H318 [1]	Not Available	Not Available
1.112-34-5 2.203-961-6 3.603-096-00-8 4.Not Available	1-5	<u>diethylene glycol monobutyl ether</u> *	Serious Eye Damage/Eye Irritation Category 2; H319 [2]	Not Available	Not Available

**Legend:** 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; \* EU IOELVs available; [e] Substance identified as having endocrine disrupting properties

## SECTION 4 First aid measures

### 4.1. Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ 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.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 Firefighting measures

### 5.1. Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### 5.2. Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### 5.3. Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▸ Use fire fighting procedures suitable for surrounding area.</li> <li>▸ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▸ Cool fire exposed containers with water spray from a protected location.</li> <li>▸ If safe to do so, remove containers from path of fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▸ Non combustible.</li> <li>▸ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>May emit poisonous fumes. May emit corrosive fumes.</p>

## SECTION 6 Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2. Environmental precautions

See section 12

### 6.3. Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▸ Clean up all spills immediately.</li> <li>▸ Avoid breathing vapours and contact with skin and eyes.</li> <li>▸ Control personal contact with the substance, by using protective equipment.</li> <li>▸ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▸ Wipe up.</li> <li>▸ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▸ Clear area of personnel and move upwind.</li> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear breathing apparatus plus protective gloves.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▸ Stop leak if safe to do so.</li> <li>▸ Contain spill with sand, earth or vermiculite.</li> </ul>

### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▸ Avoid all personal contact, including inhalation.</li> <li>▸ Wear protective clothing when risk of exposure occurs.</li> <li>▸ Use in a well-ventilated area.</li> <li>▸ Avoid contact with moisture.</li> <li>▸ Avoid contact with incompatible materials.</li> <li>▸ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▸ Keep containers securely sealed when not in use.</li> </ul>
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	▶ <b>DO NOT</b> allow clothing wet with material to stay in contact with skin
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	

## 7.2. Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	None known
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not Available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not Available



X — Must not be stored together

O — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

## 7.3. Specific end use(s)

See section 1.2

## SECTION 8 Exposure controls / personal protection

### 8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
sodium carbonate	Dermal 33.8 mg/kg bw/day (Systemic, Chronic) Inhalation 4.6 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 0.79 mg/cm <sup>2</sup> (Local, Chronic) Inhalation 4.6 mg/m <sup>3</sup> (Local, Chronic) Dermal 40 mg/kg bw/day (Systemic, Acute) Inhalation 4.6 mg/m <sup>3</sup> (Systemic, Acute) Dermal 0.79 mg/cm <sup>2</sup> (Local, Acute) Inhalation 4.6 mg/m <sup>3</sup> (Local, Acute) Dermal 16.9 mg/kg bw/day (Systemic, Chronic) * Inhalation 2.3 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 10 mg/kg bw/day (Systemic, Chronic) * Dermal 0.394 mg/cm <sup>2</sup> (Local, Chronic) * Inhalation 2.3 mg/m <sup>3</sup> (Local, Chronic) * Dermal 20 mg/kg bw/day (Systemic, Acute) * Inhalation 2.3 mg/m <sup>3</sup> (Systemic, Acute) * Oral 10 mg/kg bw/day (Systemic, Acute) * Dermal 0.394 mg/cm <sup>2</sup> (Local, Acute) * Inhalation 2.3 mg/m <sup>3</sup> (Local, Acute) *	Not Available
diethylene glycol monobutyl ether	Dermal 83 mg/kg bw/day (Systemic, Chronic) Inhalation 67.5 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 67.5 mg/m <sup>3</sup> (Local, Chronic) Inhalation 101.2 mg/m <sup>3</sup> (Local, Acute) Dermal 50 mg/kg bw/day (Systemic, Chronic) * Inhalation 40.5 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 5 mg/kg bw/day (Systemic, Chronic) * Inhalation 40.5 mg/m <sup>3</sup> (Local, Chronic) *	1.1 mg/L (Water (Fresh)) 0.11 mg/L (Water - Intermittent release) 11 mg/L (Water (Marine)) 4.4 mg/kg sediment dw (Sediment (Fresh Water)) 0.44 mg/kg sediment dw (Sediment (Marine)) 0.32 mg/kg soil dw (Soil) 200 mg/L (STP) 56 mg/kg food (Oral)

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
	Inhalation 60.7 mg/m <sup>3</sup> (Local, Acute) *	

\* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	diethylene glycol monobutyl ether	2-(2-Butoxyethoxy) ethanol	10 ppm / 67.5 mg/m <sup>3</sup>	101.2 mg/m <sup>3</sup> / 15 ppm	Not Available	Not Available
Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)	diethylene glycol monobutyl ether	2-2(butoksyetoksy)etanol	10 ppm / 68 mg/m <sup>3</sup>	Not Available	Not Available	E

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
sodium carbonate	7.6 mg/m <sup>3</sup>	83 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>
diethylene glycol monobutyl ether	30 ppm	33 ppm	200 ppm

Ingredient	Original IDLH	Revised IDLH
sodium carbonate	Not Available	Not Available
Fatty alcohol ethoxylate	Not Available	Not Available
Alkylglucoside	Not Available	Not Available
diethylene glycol monobutyl ether	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
sodium carbonate	E	≤ 0.01 mg/m <sup>3</sup>
Fatty alcohol ethoxylate	E	≤ 0.1 ppm

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

MATERIAL DATA

For diethylene glycol monobutyl ether:

CEL TWA: 15.5 ppm, 100 mg/m<sup>3</sup>

(CEL = Chemwatch Exposure Limit)


In studies involving the inhalation toxicity of diethylene glycol monobutyl ether, exposure for 6 hours daily at 100 mg/m<sup>3</sup> had no effect. This concentration is in the range of the saturated vapour concentration.

Local damage was produced following inhalation of concentrations higher than the saturated vapour concentrations, that is, during inhalation of the aerosol (350 mg/m<sup>3</sup>). Since the only potential effects of inhalation are restricted to local discomfort (in the aerosol concentration range) the substance is classified in category I for the limitation of exposure peaks.

Teratogenicity studies have not revealed prenatal toxic effects at high oral doses and this ether is classified in pregnancy risk group C.

8.2. Exposure controls

<b>8.2.1. Appropriate engineering controls</b>	<p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p>
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8.2.2. Personal protection	
Eye and face protection	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses 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.</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>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 moisturiser is recommended.</p>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**"Forsberg Clothing Performance Index".**

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
NATURAL RUBBER	A
NITRILE	A

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance	Liquid, clear, green, soluble in water		
Physical state	Liquid	Relative density (Water = 1)	1.025-1.040
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	<11.5	Decomposition temperature (°C)	Not Applicable

Continued...

<b>Melting point / freezing point (°C)</b>	0	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	>100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available BuAC = 1	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Applicable
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	11
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	3
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

## 9.2. Other information

Not Available

## SECTION 10 Stability and reactivity

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

<b>Inhaled</b>	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
<b>Ingestion</b>	Accidental ingestion of the material may be damaging to the health of the individual.
<b>Skin Contact</b>	<p>Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
<b>Eye</b>	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.

Continued...



	Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.	
<b>Chronic</b>	Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.	
<b>UNITOR USC</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>sodium carbonate</b>	<b>TOXICITY</b> dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup> Oral (Rat) LD50: 2800 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye (rabbit): 100 mg/24h moderate Eye (rabbit): 100 mg/30s mild Eye (rabbit): 50 mg SEVERE Eye: adverse effect observed (irritating) <sup>[1]</sup> Skin (rabbit): 500 mg/24h mild Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>Fatty alcohol ethoxylate</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>Alkylglucoside</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>diethylene glycol monobutyl ether</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: 4120 mg/kg <sup>[2]</sup> Oral (Rat) LD50: 5660 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye (rabbit): 20 mg/24h moderate Eye (rabbit): 5 mg - SEVERE
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>SODIUM CARBONATE</b>	<p>for sodium carbonate:</p> <p>Sodium carbonate has no or a low skin irritation potential but it is considered irritating to the eyes. Due to the alkaline properties an irritation of the respiratory tract is also possible.</p> <p>No valid animal data are available on repeated dose toxicity studies by oral, dermal, inhalation or by other routes for sodium carbonate. A repeated dose inhalation study, which was not reported in sufficient detail, revealed local effects on the lungs which could be expected based on the alkaline nature of the compound. Under normal handling and use conditions neither the concentration of sodium in the blood nor the pH of the blood will be increased and therefore sodium carbonate is not expected to be systemically available in the body. It can be stated that the substance will neither reach the foetus nor reach male and female reproductive organs, which shows that there is no risk for developmental toxicity and no risk for toxicity to reproduction. This was confirmed by a developmental study with rabbits, rats and mice. An <i>in vitro</i> mutagenicity test with bacteria was negative and based on the structure of sodium carbonate no genotoxic effects are expected.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p>
<b>Fatty alcohol ethoxylate</b>	<p>Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products . Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response. Moreover, no fatal case of poisoning with alcohol ethoxylates has ever been reported. Multiple studies investigating the acute toxicity of alcohol ethoxylates have shown that the use of these compounds is of low concern in terms of oral and dermal toxicity .</p> <p>Clinical animal studies indicate these chemicals may produce gastrointestinal irritation such as ulcerations of the stomach, pilo-erection, diarrhea, and lethargy. Similarly, slight to severe irritation of the skin or eye was generated when undiluted alcohol ethoxylates were applied to the skin and eyes of rabbits and rats.</p> <p>Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units: EO &lt; 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes) EO &gt; 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41 EO &gt; 15-20 gives Harmful (Xn) with R22-41 &gt;20 EO is not classified (CESIO 2000) Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin) . AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC</p> <p>In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO<sub>2</sub>).Orally</p>

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	<p>dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). Half of the absorbed surfactant was excreted promptly in the urine and smaller amounts of AE appeared in the faeces and expired air (CO<sub>2</sub>). The metabolism of C12 AE yields PEG, carboxylic acids, and CO<sub>2</sub> as metabolites. The LD50 values after oral administration to rats range from about 1-15 g/kg body weight indicating a low to moderate acute toxicity.</p> <p>The ability of nonionic surfactants to cause a swelling of the stratum corneum of guinea pig skin has been studied. The swelling mechanism of the skin involves a combination of ionic binding of the hydrophilic group as well as hydrophobic interactions of the alkyl chain with the substrate.</p>		
Alkylglucoside	<p>Alkyl glycosides (syn: alkyl polyglucosides, alkyl polyglycosides, APGs) are considered non-irritating to skin, but irritating to eyes at very high concentrations. A general classification of a 65% C8 alkyl glycoside solution according to the Substance Directive 67/548/EEC is Irritating (Xi) with the risk phrase R41 (Risk of serious damage to the eyes) or R36 (Irritating to the eyes) (Akzo Nobel 1998).</p> <p><b>Acute toxicity:</b></p> <p>In single dose dermal studies with caprylyl/capryl glucoside and C10-16 alkyl glucoside (both 50% a.i., n:1.6) in rabbits, the LD50 was greater than the 2000 mg/kg dose administered. In oral studies with the same test substances, none of the mice dosed with 2000 mg/kg caprylyl glucoside and none of the rats dosed with 5000 mg/kg C10-16 alkyl glucoside died during the study.</p> <p><b>Ocular:</b></p> <p>In system studies for ocular irritation, the ocular irritation potential of decyl, lauryl, C10-16 alkyl, and coco-glucosides was non to slightly irritating and of caprylyl/ capryl glucoside was highly irritating. In a HET-CAM study with APG of varying proportions of alkyl chain length, the ocular irritation potential increased with the increased proportion of shorter-chain APGs. In studies using rabbits, neutralized lauryl glucoside produced slight ocular reactions. Caprylyl/ capryl glucoside was severely irritating to rabbit eyes when tested undiluted; the irritation threshold value was 10% for 30% a.i. caprylyl/capryl glucoside and 5% for 60% a.i. caprylyl/capryl glucoside.</p> <p><b>Dermal:</b></p> <p>In an in vitro dermal absorption study using human skin samples, the mean absorbed dose of 10% caprylyl/ capryl glucoside was 0.01%.</p> <p>APGs of varying chain length (C8/10 to C12/16; 15-70% a.i.) are potentially irritating with irritation potential decreasing with increasing chain length, and, independent of the degree of polymerisation, the irritation was concentration-dependent.</p>		
DIETHYLENE GLYCOL MONOBUTYL ETHER	<p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>For diethylene glycol monoalkyl ethers and their acetates:</p> <p>This category includes diethylene glycol ethyl ether (DGEE), diethylene glycol propyl ether (DGPE) diethylene glycol butyl ether (DGBE) and diethylene glycol hexyl ether (DGHE) and their acetates.</p> <p><b>Acute toxicity:</b> There are adequate oral, inhalation and/or dermal toxicity studies on the category members. Oral LD50 values in rats for all category members are all &gt; 3000 mg/kg bw, with values generally decreasing with increasing molecular weight. Four to eight hour acute inhalation toxicity studies were conducted for all category members except DGPE in rats at the highest vapour concentrations achievable. No lethality was observed for any of these materials under these conditions. Dermal LD50 values in rabbits range from 2000 mg/kg bw (DGHE) to 15000 mg/kg bw (DGEEA). Signs of acute toxicity in rodents are consistent with non-specific CNS depression typical of organic solvents in general. All category members are slightly irritating to skin and slightly to moderately irritating to eyes (with the exception of DGHE, which is highly irritating to eyes).</p>		
UNITOR USC & SODIUM CARBONATE	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p>		
Fatty alcohol ethoxylate & Alkylglucoside	No significant acute toxicological data identified in literature search.		
Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## 11.2 Information on other hazards

Continued...

### 11.2.1. Endocrine Disruption Properties

No evidence of endocrine disrupting properties were found in the current literature.

### 11.2.2. Other Information

See Section 11.1

## SECTION 12 Ecological information

### 12.1. Toxicity

UNITOR USC	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
sodium carbonate	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	48h	Fish	0.0106mg/l	4
	LC50	96h	Fish	300mg/l	4
	EC50	72h	Algae or other aquatic plants	>800mg/l	2
	EC50	96h	Algae or other aquatic plants	242mg/l	4
EC50	48h	Crustacea	156.6-298.9mg/l	4	
Fatty alcohol ethoxylate	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Alkylglucoside	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
diethylene glycol monobutyl ether	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	1300mg/l	2
	EC50	72h	Algae or other aquatic plants	1101mg/l	2
	EC50	48h	Crustacea	>100mg/l	1
	NOEC(ECx)	96h	Algae or other aquatic plants	>=100mg/l	1
EC50	96h	Algae or other aquatic plants	>100mg/l	1	
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**DO NOT** discharge into sewer or waterways.

### 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
sodium carbonate	LOW	LOW
diethylene glycol monobutyl ether	LOW	LOW

### 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
sodium carbonate	LOW (LogKOW = -0.4605)
diethylene glycol monobutyl ether	LOW (BCF = 0.46)

### 12.4. Mobility in soil

Ingredient	Mobility
sodium carbonate	HIGH (KOC = 1)

Ingredient	Mobility
diethylene glycol monobutyl ether	LOW (KOC = 10)

### 12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗
PBT Criteria fulfilled?	No		
vPvB	No		

### 12.6. Endocrine Disruption Properties

No evidence of endocrine disrupting properties were found in the current literature.

### 12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

## SECTION 13 Disposal considerations

### 13.1. Waste treatment methods

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▸ Reduction</li> <li>▸ Reuse</li> <li>▸ Recycling</li> <li>▸ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▸ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▸ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▸ Where in doubt contact the responsible authority.</li> <li>▸ Recycle wherever possible.</li> <li>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>▸ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

## SECTION 14 Transport information

### Labels Required

<b>Marine Pollutant</b>	NO
-------------------------	----

### Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

<b>14.1. UN number</b>	Not Applicable				
<b>14.2. UN proper shipping name</b>	Not Applicable				
<b>14.3. Transport hazard class(es)</b>	<table border="1"> <tbody> <tr> <td>Class</td> <td>Not Applicable</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </tbody> </table>	Class	Not Applicable	Subrisk	Not Applicable
Class	Not Applicable				
Subrisk	Not Applicable				
<b>14.4. Packing group</b>	Not Applicable				

14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	ICAO/IATA Class	Not Applicable
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Subrisk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	

14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
sodium carbonate	Not Available
Fatty alcohol ethoxylate	Not Available
Alkylglucoside	Not Available
diethylene glycol monobutyl ether	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
sodium carbonate	Not Available
Fatty alcohol ethoxylate	Not Available
Alkylglucoside	Not Available
diethylene glycol monobutyl ether	Not Available

**SECTION 15 Regulatory information**

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

**sodium carbonate is found on the following regulatory lists**

Europe EC Inventory  
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

**Fatty alcohol ethoxylate is found on the following regulatory lists**

Not Applicable

**Alkylglucoside is found on the following regulatory lists**

Europe EC Inventory

**diethylene glycol monobutyl ether is found on the following regulatory lists**

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)  
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles  
Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

dNorway regulations on action values and limit values for physical chemical factors in the work environment and infection risk groups for biological factors (Norwegian)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**Information according to 2012/18/EU (Seveso III):**

Seveso Category	Not Available
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**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

UNITOR USC

Ingredient	CAS number	Index No	ECHA Dossier
sodium carbonate	497-19-8	011-005-00-2	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Irrit. 2	GHS07; Wng	H319
2	Eye Irrit. 2	GHS07; Wng	H319
1	Eye Irrit. 2	GHS07; Wng	H319
2	Eye Irrit. 2A; Skin Irrit. 2; STOT SE 3; Acute Tox. 4; Acute Tox. 4; STOT RE 2; Acute Tox. 4	GHS08; Dgr	H319; H252; H261; H312; H302; H335; H373; H332
1	Not Classified	Not Available	Not Available
2	Not Classified	Not Available	Not Available

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
Fatty alcohol ethoxylate	160875-66-1*	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Eye Dam. 1	GHS05; Dgr	H302; H318
2	Acute Tox. 4; Eye Dam. 1; Skin Irrit. 2; STOT SE 3; Aquatic Chronic 3	GHS05; Dgr	H302; H318; H315; H202; H335; H412

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
Alkylglucoside	161074-93-7*	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Not Classified	Not Available	Not Available
2	Eye Dam. 1	GHS05; Dgr	H318

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
diethylene glycol monobutyl ether	112-34-5	603-096-00-8	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Irrit. 2	GHS07; Wng	H319
2	Eye Irrit. 2; STOT SE 3; STOT SE 2	GHS07; Wng	H319; H411; H336; H314; H335

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory Status

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	No (Alkylglucoside)
Canada - DSL	No (Fatty alcohol ethoxylate; Alkylglucoside)
Canada - NDSL	No (sodium carbonate; Fatty alcohol ethoxylate; diethylene glycol monobutyl ether)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (Fatty alcohol ethoxylate)
Japan - ENCS	Yes
Korea - KECI	No (Alkylglucoside)
New Zealand - NZIoC	Yes
Philippines - PICCS	No (Alkylglucoside)
USA - TSCA	Yes

National Inventory	Status
Taiwan - TCSI	Yes
Mexico - INSQ	No (Fatty alcohol ethoxylate; Alkylglucoside)
Vietnam - NCI	Yes
Russia - FBEPH	No (Fatty alcohol ethoxylate; Alkylglucoside)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 Other information

<b>Revision Date</b>	07/12/2022
<b>Initial Date</b>	05/04/2018

### CONTACT POINT

- For quotations contact your local Customer Services - <http://wssdirectory.wilhelmsen.com/#/customerservices> - - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Compliance Manager, - Email: [wss.global.sdsinfo@wilhelmsen.com](mailto:wss.global.sdsinfo@wilhelmsen.com) - Telephone: Tel.: +47 67584000

### Full text Risk and Hazard codes

<b>H202</b>	Explosive, severe projection hazard.
<b>H252</b>	Self-heating in large quantities; may catch fire.
<b>H261</b>	In contact with water releases flammable gases.
<b>H302</b>	Harmful if swallowed.
<b>H312</b>	Harmful in contact with skin.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H315</b>	Causes skin irritation.
<b>H319</b>	Causes serious eye irritation.
<b>H332</b>	Harmful if inhaled.
<b>H335</b>	May cause respiratory irritation.
<b>H336</b>	May cause drowsiness or dizziness.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

### SDS Version Summary

Version	Date of Update	Sections Updated
8.12	07/12/2022	Classification, Ingredients, Physical Properties

### 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.

The 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. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

- EN 166 Personal eye-protection
- EN 340 Protective clothing
- EN 374 Protective gloves against chemicals and micro-organisms
- EN 13832 Footwear protecting against chemicals
- EN 133 Respiratory protective devices

### Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists



STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit  
IDLH: Immediately Dangerous to Life or Health Concentrations  
ES: Exposure Standard  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index  
AIRC: Australian Inventory of Industrial Chemicals  
DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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# Anti-fouling coating (AFC)

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2020/878 - Denmark

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

#### 1.1 Product identifier

Product name : Hempel's Antifouling Globic 9000 78900  
Product identity : 7890051110  
Product type : antifouling paint self polishing

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

Field of application : ships and shipyards.  
Identified uses : Industrial applications, Professional applications, Used by spraying.

#### 1.3 Details of the supplier of the safety data sheet

Company details : HEMPEL A/S  
Lundtoftegårdsvej 91  
DK-2800 Kgs. Lyngby  
Denmark  
Tel.: + 45 45 93 38 00  
hempel@hempel.com  
Date of issue : 15 November 2021  
Date of previous issue : 22 January 2021.

#### 1.4 Emergency telephone number

Emergency telephone number (with hours of operation)  
  
Poison Control Hotline: +45 82 12 12 12 (24 hours)  
See section 4 First aid measures.

### 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]

Flam. Liq. 3, H226	FLAMMABLE LIQUIDS
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation)
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/ EYE IRRITATION
Carc. 2, H351	CARCINOGENICITY
STOT RE 2, H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE)
Aquatic Acute 1, H400	AQUATIC HAZARD (ACUTE)
Aquatic Chronic 1, H410	AQUATIC HAZARD (LONG-TERM)

See Section 11 for more detailed information on health effects and symptoms.

#### 2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 - Flammable liquid and vapor.  
H315 - Causes skin irritation.  
H318 - Causes serious eye damage.  
H332 - Harmful if inhaled.  
H351 - Suspected of causing cancer.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe vapor or spray. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.  
Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Collect spillage.  
Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

### SECTION 2: Hazards identification

Hazardous ingredients :	<ul style="list-style-type: none"> <li>☑ copper (I) oxide</li> <li>copper pyrithione</li> <li>4-methylpentan-2-one</li> <li>white spirit</li> </ul>
Supplemental label elements :	Contains 2,5-di-tert-butylhydroquinone. May produce an allergic reaction.
<b>Special packaging requirements</b>	
Containers to be fitted with child-resistant fastenings :	Not applicable.
Tactile warning of danger :	Not applicable.

### 2.3 Other hazards

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
☑ copper (I) oxide	REACH #: 01-2119513794-36 EC: 215-270-7 CAS: 1317-39-1 Index: 029-002-00-X	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=10)	- [1]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥10 - ≤25	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315	C [1] [2]
zinc oxide	REACH #: 01-2119463881-32 EC: 215-222-5 CAS: 1314-13-2 Index: 030-013-00-7	≥5 - ≤10	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	- [1]
copper pyrithione	EC: 238-984-0 CAS: 14915-37-8	≥1 - ≤3	Acute Tox. 4, H302 Acute Tox. 2, H330 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)	- [1]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≥1 - ≤3	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs)	- [1] [2]
o-xylene	REACH #: 01-2119485822-30 EC: 202-422-2 CAS: 95-47-6	≥1 - ≤3	Asp. Tox. 1, H304 Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	C [1] [2]
cupric oxide	EC: 215-269-1 CAS: 1317-38-0 Index: 029-016-00-6	≥1 - ≤3	Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=10)	- [1]
4-methylpentan-2-one	REACH #: 01-2119473980-30 EC: 203-550-1 CAS: 108-10-1 Index: 606-004-00-4	≥1 - ≤3	Flam. Liq. 2, H225 Acute Tox. 4, H332 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H336 EUH066	- [1] [2]
white spirit	REACH #: 01-2119458049-33 EC: 265-191-7 CAS: 64742-88-7 Index: 649-405-00-X	≥1 - ≤3	Flam. Liq. 3, H226 STOT SE 3, H336 STOT RE 1, H372 (central nervous system (CNS)) (inhalation) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	- [1] [2]
copper (metallic)	EC: 231-159-6 CAS: 7440-50-8 Index: 029-019-01-X	<1	Acute Tox. 4, H302 Acute Tox. 3, H331 Eye Irrit. 2, H319 Aquatic Acute 1, H400 (M=10000) Aquatic Chronic 1, H410 (M=100)	- [1]
2,5-di-tert-butylhydroquinone	REACH #: 01-2120766295-46	<1	Acute Tox. 3, H301	- [1]

**SECTION 3: Composition/information on ingredients**

toluene	EC: 201-841-8 CAS: 88-58-4  REACH #: 01-2119471310-51 EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	≤0.3	Skin Sens. 1B, H317 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10) Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 See Section 16 for the full text of the H statements declared above.	-	[1] [2]
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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, see section 8.
- [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
- [6] Additional disclosure due to company policy

**Active substances**

Product/ingredient name (% by weight)
copper (I) oxide (35.4 % by weight)
copper pyrithione (3 % by weight)

**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.  In case of poisoning call The Poison Control Hotline. Offering immediate guidance for poisoning emergencies: +45 82 12 12 12 (24 hours a day, seven days a week). If breathing is irregular, drowsiness, loss of consciousness or cramps: Call directly 112 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. 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.

**4.2 Most important symptoms and effects, both acute and delayed**

**Potential acute health effects**

Eye contact :	Causes serious eye damage.
Inhalation :	Harmful if inhaled.
Skin contact :	Causes skin irritation.
Ingestion :	No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

Eye contact :	Adverse symptoms may include the following: pain watering redness
Inhalation :	No specific data.

### SECTION 4: First aid measures

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

#### 4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician :	If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. 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

Extinguishing media :	Recommended: alcohol resistant foam, CO <sub>2</sub> , powders, water spray. Not to be used: waterjet.
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#### 5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. 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 nitrogen 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. 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

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.

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. 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.

Storage : Do not store above the following temperature: 25 °C

#### 7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

Specific end use(s) : Antifouling products.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Product/ingredient name	Exposure limit values
copper (I) oxide	<b>Working Environment Authority (Denmark, 2/2021).</b> TWA: 0.1 mg/m <sup>3</sup> , (calculated as Cu) 8 hours. Form: fume
xylene	<b>Working Environment Authority (Denmark, 2/2021). Absorbed through skin.</b> TWA: 25 ppm 8 hours.
ethylbenzene	TWA: 109 mg/m <sup>3</sup> 8 hours. <b>Working Environment Authority (Denmark, 2/2021). Absorbed through skin.</b> <b>Carcinogen.</b>
o-xylene	TWA: 217 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours. <b>Working Environment Authority (Denmark, 2/2021). Absorbed through skin.</b>
4-methylpentan-2-one	TWA: 109 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours. <b>Working Environment Authority (Denmark, 2/2021). Absorbed through skin.</b>
white spirit	TWA: 20 ppm 8 hours. TWA: 83 mg/m <sup>3</sup> 8 hours. <b>EU OEL (Europe).</b> (ACGIH) TWA: 25 ppm 8 hours. (ACGIH) TWA: 145 mg/m <sup>3</sup> 8 hours.
copper (metallic)	<b>Working Environment Authority (Denmark, 2/2021).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: powder and dust
toluene	<b>Working Environment Authority (Denmark, 2/2021). Absorbed through skin.</b> TWA: 25 ppm 8 hours. TWA: 94 mg/m <sup>3</sup> 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 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

Not applicable.

#### Predicted effect concentrations

Not applicable.

#### 8.2 Exposure controls

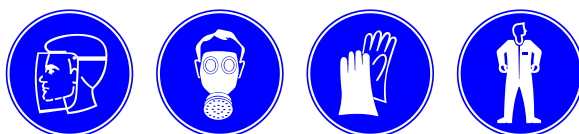
### SECTION 8: Exposure controls/personal protection

#### Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

#### 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. Where personal protection equipment is required this shall be chosen in accordance with Danish Working Environment Services Executive Order no. 302/1993. See product Code Number (section 15).



- 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Hand protection : Wear chemical-resistant gloves (tested to EN374) 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 / Barrier / 4H gloves, polyvinyl alcohol (PVA), Viton®  
May be used: nitrile rubber  
Short term exposure: 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 : 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. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use an approved/certified respirator or equivalent.

#### 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.
- Color : Brown.
- Odor : Solvent-like
- pH : Testing not relevant or not possible due to nature of the product.
- Melting point/freezing point : 439.835°C This is based on data for the following ingredient: copper (I) oxide
- Boiling point/boiling range : Testing not relevant or not possible due to nature of the product.
- Flash point : Closed cup: 23°C (73.4°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.



### SECTION 9: Physical and chemical properties

Lower and upper explosive (flammable) limits :	0.6 - 7.5 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.
Specific gravity :	1.894 g/cm <sup>3</sup>
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 :	Lowest known value: >220°C (>428°F) (white spirit).
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Aspiration hazard (H304) Not classified. Testing not relevant due to nature of the product.
Explosive properties :	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 :	Weighted average: 20 %
Water % by weight :	Weighted average: 0 %
VOC content :	381.3 g/l
TOC Content :	Weighted average: 340 g/l
Solvent Gas :	Weighted average: 0.085 m <sup>3</sup> /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 and reducing materials.  
Reactive or incompatible with the following materials: organic materials, acids, 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 nitrogen oxides sulfur oxides metal oxide/oxides

### SECTION 11: Toxicological information

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

**SECTION 11: Toxicological information**

Product/ingredient name	Result	Species	Dose	Exposure
890051110 copper (I) oxide	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	3.34 mg/l	4 hours
xylene	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	1340 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
zinc oxide	LC50 Inhalation Vapor	Rat	6350 ppm	4 hours
	LD50 Dermal	Rabbit	>4200 mg/kg	-
	LD50 Oral	Rat	3523 mg/kg	-
copper pyrithione	LC50 Inhalation Dusts and mists	Rat	>5.7 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
ethylbenzene	LC50 Inhalation Dusts and mists	Rat	0.07 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	1075 mg/kg	-
o-xylene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapor	Rat	21.5 mg/l	4 hours
4-methylpentan-2-one	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Oral	Rat	3567 mg/kg	-
	LD Dermal	Rabbit	>3 g/kg	-
copper (metallic)	LC50 Inhalation Dusts and mists	Rat	1.5 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	TDL <sub>o</sub> Oral	Human	0.01 mg/kg	-
2,5-di-tert-butylhydroquinone	LD50 Dermal	Rat	>4000 mg/kg	-
	LD50 Oral	Rat	50 - 300 mg/kg	-
	LC50 Inhalation Vapor	Rat	>20 mg/l	4 hours
toluene	LD50 Oral	Rat	636 mg/kg	-

**Acute toxicity estimates**

Product/ingredient name	Oral mg/kg	Dermal mg/kg	Inhalation (gases) ppm	Inhalation (vapors) mg/l	Inhalation (dusts and mists) mg/l
Hempel's Antifouling Globic 9000 78900			56705.9	253.2	2.6
copper (I) oxide	500				3.34
xylene	3523	1100	5000		
copper pyrithione	1075				0.07
ethylbenzene	3500			11	
o-xylene	3567	1100		11	
4-methylpentan-2-one				11	
copper (metallic)	500				0.5
2,5-di-tert-butylhydroquinone	100				

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure
copper (I) oxide	Eyes - Irritant	Rabbit	-	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
xylene	Skin - Irritant	Rabbit	-	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams
zinc oxide	Eyes - Severe irritant	Rabbit	-	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams
	Respiratory - Mild irritant	Rabbit	-	-
copper pyrithione	Eyes - Mild irritant	Rabbit	-	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams
ethylbenzene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams

**Sensitizer**

Product/ingredient name	Route of exposure	Species	Result
2,5-di-tert-butylhydroquinone	skin	Mouse	Sensitizing

**Mutagenic effects**

No known significant effects or critical hazards.

**Carcinogenicity**

**SECTION 11: Toxicological information**

☒ Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

**Reproductive toxicity**

No known significant effects or critical hazards.

**Teratogenic effects**

No known significant effects or critical hazards.

**Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
o-xylene 4-methylpentan-2-one white spirit 2,5-di-tert-butylhydroquinone toluene	Category 3 Category 3 Category 3 Category 3 Category 3		Respiratory tract irritation Narcotic effects Narcotic effects Respiratory tract irritation Narcotic effects

**Specific target organ toxicity (repeated exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene white spirit toluene	Category 2 Category 1 Category 2	- inhalation -	hearing organs central nervous system (CNS) -

**Aspiration hazard**

Product/ingredient name	Result
ethylbenzene o-xylene white spirit toluene	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure**

Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential chronic health effects**

**11.2 Information on other hazards**

Endocrine disrupting properties : No known data available in our database.

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.

Product/ingredient name	Result	Species	Exposure
☒ copper (I) oxide	EC50 65 mg/l Acute EC50 0.51 mg/l Acute LC50 0.0081 mg/l	Algae Daphnia - Daphnia Magna Fish - Pimephales promelas	72 hours 48 hours 96 hours
zinc oxide	EC50 0.413 mg/l LC50 0.1169 mg/l Acute EC50 0.17 mg/l  Acute EC50 1 mg/l	Daphnia Fish Algae - Pseudokirchneriella subcapitata - Exponential growth phase Daphnia - Pseudokirchneriella subcapitata - Exponential growth phase	48 hours 96 hours 72 hours 48 hours
copper pyrithione	Acute LC50 24600 µg/l Fresh water Chronic EC50 0.136 mg/l Acute EC50 0.022 mg/l Acute LC50 0.0043 mg/l	Algae Daphnia Fish	72 hours 48 hours 96 hours
ethylbenzene 4-methylpentan-2-one	Chronic NOEC <1000 µg/l Fresh water Chronic NOEC 7800 - 39000 µg/l Fresh water Chronic NOEC 168 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata Daphnia - Daphnia magna Fish - Pimephales promelas - Embryo	96 hours 21 days 33 days
white spirit	Acute EC50 4.6 - 10 mg/l Acute EC50 10 - 20 mg/l Acute EC50 10 - 30 mg/l	Algae Daphnia Fish	72 hours 48 hours 96 hours
copper (metallic)	Acute EC50 1100 µg/l Fresh water Acute EC50 2.1 µg/l Fresh water  Acute IC50 13 µg/l Fresh water  Acute IC50 5.4 mg/l Marine water	Aquatic plants - Lemna minor Daphnia - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling) Algae - Pseudokirchneriella subcapitata - Exponential growth phase Aquatic plants - Plantae - Exponential growth phase	4 days 48 hours 72 hours 72 hours

## SECTION 12: Ecological information

	Acute LC50 0.072 µg/l Marine water Acute LC50 7.56 µg/l Marine water Chronic NOEC 2.5 µg/l Marine water	Crustaceans - Amphipoda - Adult Fish - Periopthalmus waltoni - Adult Algae - Nitzschia closterium - Exponential growth phase	48 hours 96 hours 72 hours
	Chronic NOEC 7 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Chronic NOEC 0.02 mg/l Fresh water	Crustaceans - Cambarus bartonii - Mature	21 days
	Chronic NOEC 2 µg/l Fresh water Chronic NOEC 0.8 µg/l Fresh water	Daphnia - Daphnia magna Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling)	21 days 6 weeks
2,5-di-tert-butylhydroquinone	Acute EC50 0.038 mg/l Acute EC50 0.4 mg/l	Algae Daphnia	72 hours 48 hours
toluene	Chronic NOEC <500000 µg/l Fresh water Chronic NOEC 1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata Daphnia - Daphnia magna	96 hours 21 days

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
xylene	OECD 301F Ready Biodegradability - Manometric Respirometry Test	90 - 98 % - Readily - 28 days	-	-
ethylbenzene	-	>60 % - Readily - 28 days	-	-
4-methylpentan-2-one	-	>70 % - Readily - 28 days	-	-
white spirit	-	84 % - 14 days	100 mg/l	-
toluene	301F Ready Biodegradability - Manometric Respirometry Test	7 - 74 % - Readily - 28 days	-	-
	-	100 % - Readily - 14 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
zinc oxide	-	-	Not readily
ethylbenzene	-	-	Readily
4-methylpentan-2-one	-	-	Readily
white spirit	-	-	Readily
toluene	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
xylene	3.12	8.1 - 25.9	low
zinc oxide	2.2	60960	high
copper pyrithione	-	50	low
ethylbenzene	3.6	-	low
o-xylene	3.12	8.1 - 25.9	low
4-methylpentan-2-one	1.31	2	low
white spirit	3 - 7.3	-	high
2,5-di-tert-butylhydroquinone	4.85	440	low
toluene	2.73	90	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : No known data available in our database.

Mobility : No known data available in our database.

### 12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.							

### 12.6 Endocrine disrupting properties

No known data available in our database.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

The generation of waste should be avoided or minimized wherever possible.

Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations.

Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

Spillage, remains, empty cans, discarded working clothes and disposable towels shall be discarded in a special container that must be marked with the contents. E.g. "Giftig affald. Pas på!"

Spillage, remains, empty cans, discarded working clothes and disposable towels shall be discarded in a special container. The waste container shall, in accordance with the Danish Working Environment's Executive Order, be marked with: Indeholder stof(fer), der er omfattet af dansk arbejdsmiljøregulering med hensyn til kræftfarerisiko.

European waste catalogue no. (EWC) is given below.









European waste catalogue (EWC) : 08 01 11\*

#### Packaging

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

### SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN / ID no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
<b>ADR/RID Class</b>	UN2929	TOXIC LIQUID FLAMMABLE, ORGANIC, N.O.S. (xylene, copper (I) oxide)	6.1 3   	II	Yes.	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Tunnel code</b> (D/E)
<b>IMDG Class</b>	UN2929	TOXIC LIQUID FLAMMABLE, ORGANIC, N.O.S. (xylene). (copper (I) oxide)	6.1 3   	II	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Emergency schedules</b> F-E, S-D
<b>IATA Class</b>	UN2929	TOXIC LIQUID FLAMMABLE, ORGANIC, N.O.S. (xylene, copper (I) oxide)	6.1 3  	II	Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

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 Maritime transport in bulk according to IMO instruments

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) Annex XIV - List of substances subject to authorization - Substances of very high concern

##### 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

##### Seveso category

This product is controlled under the Seveso III Directive.

### SECTION 15: Regulatory information

#### Seveso category

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b  
E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

#### Biocidal Products Regulations

Restrictions on use. : Product is not intended for consumer use.

Directions for use and dose rate : Spray or Roller application or brushing  
Dose: See separate Product Data Sheet, Application instructions or label.

Additional information : (Product Type: 21 - Antifouling products) Liquid. Wear suitable protective clothing, gloves and eye/face protection. In case of contact with eyes, rinse immediately with plenty of water. If swallowed, seek medical advice immediately and show this container or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheet.

#### National regulations

Product registration number : 4096952

Danish fire class : II - 1

MAL-code : 4-6

MAL-number : 1690.82

Carcinogenic class : National Working Environment Authorities Ordinance on Measures to Prevent Cancer Risks during Work with Substances and Preparations is applicable.

Restrictions on use. : Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.  
Not allowed for use on pleasure crafts predominately used in freshwaters. Not allowed for use on pleasure crafts of less than 200 kilograms. An exemption is wooden boats in saltwater, and pleasure craft used in saltwater and with permanent berth in harbours classified as A or B harbours in the harbour list of the insurance business.

List of undesirable substances : Listed

Carcinogenic waste : Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.

#### National regulations Non-GHS

List name	Product/ingredient name	Name on list	Classification	Notes
Denmark Carcinogenic Chemicals	ethylbenzene	Ethylbenzen	Listed	-

#### International regulations

##### IMO Anti-fouling System Convention Compliant (AFS/CONF/26)

This product does not contain organotin compounds acting as biocides and complies with the International Convention on the Control of Harmful Anti-fouling Systems on Ships as adopted by IMO October 2001 (IMO document AFS/CONF/26)

Product type : antifouling paint self polishing

Manufacturer : Hempel A/S

Product name and/or code : Hempel's Antifouling Globic 9000 78900

7890051110

Colour : Brown.

Note: This name is shown on the product container. All products in HEMPEL's containers carrying this name comply with the IMO Convention (AFS/CONF/26).

Active ingredient(s) : copper (I) oxide 1317-39-1  
copper pyrithione 14915-37-8

#### 15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

### SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 EUH statement = CLP-specific Hazard statement  
 RRN = REACH Registration Number  
 DNEL = Derived No Effect Level  
 PNEC = Predicted No Effect Concentration

Full text of abbreviated H statements :

**F**H225 Highly flammable liquid and vapor.  
 H226 Flammable liquid and vapor.  
 H301 Toxic if swallowed.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful in contact with skin.  
 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.  
 H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.  
 H336 May cause drowsiness or dizziness.  
 H351 Suspected of causing cancer.  
 H361d Suspected of damaging the unborn child.  
 H372 Causes damage to organs through prolonged or repeated exposure.  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 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.  
 H412 Harmful to aquatic life with long lasting effects.  
 EUH066 Repeated exposure may cause skin dryness or cracking.

Full text of classifications [CLP/GHS] :

**F**Acute Tox. 2 ACUTE TOXICITY - Category 2  
 Acute Tox. 3 ACUTE TOXICITY - Category 3  
 Acute Tox. 4 ACUTE TOXICITY - Category 4  
 Aquatic Acute 1 AQUATIC HAZARD (ACUTE) - Category 1  
 Aquatic Chronic 1 AQUATIC HAZARD (LONG-TERM) - Category 1  
 Aquatic Chronic 2 AQUATIC HAZARD (LONG-TERM) - Category 2  
 Aquatic Chronic 3 AQUATIC HAZARD (LONG-TERM) - Category 3  
 Asp. Tox. 1 ASPIRATION HAZARD - Category 1  
 Carc. 2 CARCINOGENICITY - Category 2  
 Eye Dam. 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 Eye Irrit. 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Liq. 2 FLAMMABLE LIQUIDS - Category 2  
 Flam. Liq. 3 FLAMMABLE LIQUIDS - Category 3  
 Repr. 2 TOXIC TO REPRODUCTION - Category 2  
 Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2  
 Skin Sens. 1B SKIN SENSITIZATION - Category 1B  
 STOT RE 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1  
 STOT RE 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
 STOT SE 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Classification	Justification
<b>F</b> FLAMMABLE LIQUIDS ACUTE TOXICITY (inhalation) SKIN CORROSION/IRRITATION SERIOUS EYE DAMAGE/ EYE IRRITATION CARCINOGENICITY SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) AQUATIC HAZARD (ACUTE) AQUATIC HAZARD (LONG-TERM)	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

**Notice to reader**

**F** Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

# SAFETY DATA SHEET

Date of issue/Date of revision 14 June 2022  
Version 7



## Section 1. Identification

**Product code** : 40290-C8000/5L  
**Product identifier** : SIGMA ECOFLEET 290 BLACK

### Recommended use and restrictions

**Use of the substance/  
mixture** : Antifouling products  
**Uses advised against** : Not applicable.

**Supplier's details** : PPG Industries Australia Pty Limited  
(ABN 82 055 500 939)  
14-20 McNaughton Rd  
CLAYTON Victoria 3168  
Tel: (03) 9263 6000 Fax: (03) 9263 6970

**Emergency telephone  
number** : Australia 1800 883 254 / New Zealand 0800 000 096  
For international shipping emergencies: 1-412-391-1618

## Section 2. Hazard(s) identification

**Classification of the  
substance or mixture** :  FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (oral) - Category 4  
SKIN CORROSION/IRRITATION - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN SENSITISATION - Category 1  
CARCINOGENICITY - Category 2  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract  
irritation) - Category 3

### GHS label elements

**Hazard pictograms** :



**Signal word** :

**DANGER**

**Hazard statements** :

Flammable liquid and vapour.  
Harmful if swallowed.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
May cause respiratory irritation.  
Suspected of causing cancer.

### Precautionary statements

**Prevention** :

Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing vapour. Wash thoroughly after handling.



## Section 2. Hazard(s) identification

- Response** : If exposed or concerned: Get medical advice or attention. IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or 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 doctor.
- Storage** : Store in a well-ventilated place. Keep container tightly closed.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.

**Other hazards which do not result in classification** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition and ingredient information

**Substance/mixture** : Mixture

### CAS number/other identifiers

- CAS number** : Not applicable.
- EC number** : Mixture.

Ingredient name	CAS number	% (w/w)
Copper oxide	1317-39-1	30 - 60
xylene	1330-20-7	10 - <30
rosin	8050-09-7	10 - <30
4-methylpentan-2-one	108-10-1	1 - <10
diuron (ISO)	330-54-1	1 - <10
ethylbenzene	100-41-4	1 - <10

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 or have an OEL and hence require reporting in this section.

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

SUB codes represent substances without registered CAS Numbers.

## Section 4. First aid measures

### 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. 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.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.

## Section 4. First aid measures

- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed.

### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- 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** : 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.
- Specific treatments** : No specific treatment.
- 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. Firefighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.
- Specific hazards arising from the chemical** : Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
nitrogen oxides  
halogenated compounds  
metal oxide/oxides
- 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. 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.
- Hazchem code** : •3Y

## 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 spill material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe 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".

**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).

### Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt 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. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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 only non-sparking tools. Take precautionary measures against electrostatic discharges. 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.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 0 to 35°C (32 to 95°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. Store locked up. Eliminate all ignition sources. Separate from oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

xylene	<b>Safe Work Australia (Australia, 12/2019). [Xylene (o-, m-, p- isomers)]</b> STEL: 655 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 350 mg/m <sup>3</sup> 8 hours. TWA: 80 ppm 8 hours.
4-methylpentan-2-one	<b>Safe Work Australia (Australia, 12/2019).</b> STEL: 307 mg/m <sup>3</sup> 15 minutes. STEL: 75 ppm 15 minutes. TWA: 205 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.
ethylbenzene	<b>Safe Work Australia (Australia, 12/2019).</b> STEL: 543 mg/m <sup>3</sup> 15 minutes. STEL: 125 ppm 15 minutes. TWA: 434 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.

**Appropriate engineering controls** : 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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

For products that are sprayed, where practicable use a spray booth designed and maintained in accordance with AS/NZS 4114.

**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** : Chemical splash goggles and face shield.

**Skin protection**

## Section 8. Exposure controls and 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.
- Gloves** : butyl rubber
- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- 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** : 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. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
- Restrictions on use** : Not applicable.

References: Eye protectors should conform to AS/NZS 1336 and AS/NZS 1337. Chemical-resistant gloves should conform to AS/NZS 2161.1. Respiratory protection should conform to AS/NZS 1715 and AS/NZS 1716. Occupational footwear should conform to AS/NZS 2210.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Colour** : Black.
- Odour** : Aromatic.
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 25°C (77°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 1.69
- Bulk Density (g/cm<sup>3</sup>)** : 1.15
- Solubility** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/water** : Not applicable.

## Section 9. Physical and chemical properties

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

**Viscosity** : Not Applicable

## 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** : Stable under recommended storage and handling conditions (see Section 7). When exposed to high temperatures may produce hazardous decomposition products.

**Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.

**Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/oxides

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Copper oxide	LC50 Inhalation Dusts and mists	Rat	3.34 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	500 mg/kg	-
xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
rosin	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	7600 mg/kg	-
4-methylpentan-2-one	LC50 Inhalation Vapour	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	2.08 g/kg	-
diuron (ISO)	LD50 Dermal	Rat	>5 g/kg	-
	LD50 Oral	Rat	1 g/kg	-
ethylbenzene	LC50 Inhalation Vapour	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

#### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

## Section 11. Toxicological information

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

### Sensitisation

Not available.

### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

### Mutagenicity

Not available.

**Conclusion/Summary** : There are no data available on the mixture itself.

### Carcinogenicity

Not available.

**Conclusion/Summary** : There are no data available on the mixture itself.

### Reproductive toxicity

Not available.

**Conclusion/Summary** : There are no data available on the mixture itself.

### Teratogenicity

Not available.

**Conclusion/Summary** : There are no data available on the mixture itself.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
xylene	Category 3	-	Respiratory tract irritation
4-methylpentan-2-one	Category 3	-	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Diuron (ISO)	Category 2	-	-
ethylbenzene	Category 2	-	-

### Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

**Information on likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : Causes serious eye damage.

**Inhalation** : May cause respiratory irritation.

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

**Ingestion** : Harmful if swallowed.

## Section 11. Toxicological information

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- 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 as well as chronic effects from short and long-term exposure

- Conclusion/Summary** : There are no data available on the mixture itself. Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit 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 and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

#### Short term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

#### Long term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

#### Potential chronic health effects

Not available.

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates



## Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
SIGMA ECOFLEET 290 BLACK	1309.3	13588.1	N/A	39.7	7.5
dicopper oxide	500	N/A	N/A	N/A	3.34
xylene	4300	1700	N/A	11	N/A
rosin	7600	N/A	N/A	N/A	N/A
4-methylpentan-2-one	2080	N/A	N/A	11	N/A
diuron (ISO)	1000	N/A	N/A	N/A	N/A
ethylbenzene	3500	17800	N/A	17.8	N/A

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
dicopper oxide	LC50 0.003 mg/l	Fish	96 hours
4-methylpentan-2-one	Acute LC50 >179 mg/l	Fish	96 hours
diuron (ISO)	Acute EC50 0.031 mg/l	Algae	72 hours
	Acute EC50 0.022 mg/l	Algae	96 hours
	Acute EC50 0.018 mg/l	Aquatic plants	72 hours
	Acute EC50 1.4 mg/l	Daphnia	48 hours
	Acute LC50 14.7 mg/l	Fish	96 hours
	Chronic NOEC 0.0032 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Chronic NOEC 0.56 mg/l	Daphnia	21 days
	Chronic NOEC 0.41 mg/l	Fish	28 days
ethylbenzene	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Chronic NOEC 1 mg/l Fresh water	Daphnia - Ceriodaphnia dubia	-

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
4-methylpentan-2-one	OECD 301F	83 % - Readily - 28 days	-	-
ethylbenzene	-	79 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
4-methylpentan-2-one	-	-	Readily
ethylbenzene	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
xylene	3.12	7.4 to 18.5	low
rosin	1.9 to 7.7	-	high
4-methylpentan-2-one	1.9	-	low
diuron (ISO)	2.84	14.13	low
ethylbenzene	3.6	79.43	low

## Section 12. Ecological information

### 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 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. 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3 	3  	3 
Packing group	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(dicopper oxide, zinc oxide)	Not applicable.

### Additional information

ADG : None identified.

Hazchem code : •3Y

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

## Section 14. Transport information

**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.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines and Poisons

**SUSMP** : 6

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AIC)** : All components are listed or exempted.

**New Zealand (NZIoC)** : All components are listed or exempted.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Any other relevant information

### History

**Date of issue/Date of revision** : 14 June 2022

**Date of previous issue** : 7/15/2021

**Prepared by** : EHS

**Key to abbreviations** : ADG = Australian Dangerous Goods  
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 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
NOHSC = National Occupational Health and Safety Commission  
SUSMP = Standard Uniform Schedule of Medicine and Poisons

## Section 16. Any other relevant information

UN = United Nations

References : Not available.

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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.

## BIOGUARD PLUS

### Wilhelmsen Ships Service AS

Part Number: 778918 (25L)

Version No: 12.20

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: 07/05/2021

Print Date: 10/11/2021

L.REACH.NOR.EN

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

##### 1.1. Product Identifier

Product name	BIOGUARD PLUS
Chemical Name	Not Applicable
Synonyms	Pr No: 321584 (Norway)
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)
Chemical formula	Not Applicable
Other means of identification	778918 (25L), 63-1987, 778918

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

Environment Release Category	ERC7	Industrial use of sub-stances in closed systems
Chemical Product Category	PC37	Water treatment chemicals
Sectors of Use	SU3	Industrial uses: Uses of substances as such or in preparations* at industrial sites
Relevant identified uses	Seawater Dispersant for Marine Systems	
Uses advised against	Not Applicable	

##### 1.3. Details of the supplier of the safety data sheet

Registered company name	Wilhelmsen Ships Service AS	Outback (M)SDS portal: <a href="http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen">http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen</a>	Wilhelmsen Ships Service AS* Central Warehouse
Address	Strandveien 20 Lysaker 1366 Norway	-----Use our Outback portal to obtain our (M)SDSs in other languages and/or format.----- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com ----- Norway	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+47 67 58 40 00	Not Available	+31 10 4877 777
Fax	Not Available	Not Available	Not Available
Website	<a href="http://www.wilhelmsen.com/">http://www.wilhelmsen.com/</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
Email	wss.norway.cs@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com

Registered company name	Wilhelmsen Ships Service AS* Central Warehouse
Address	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+31 10 4877 777

<b>Fax</b>	Not Available
<b>Website</b>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
<b>Email</b>	wss.rotterdam@wilhelmsen.com

#### 1.4. Emergency telephone number

Association / Organisation	Giftinformasjonssentralen - 24 timer	24hrs - Chemtrec	Dutch nat. poison centre
Emergency telephone numbers	+47 22591300	+31-10-4877700	+ 31 88 7558561
Other emergency telephone numbers	+31-10-4877700	+1 800 424 9300	+ 31 10 4877700

Association / Organisation	Dutch nat. poison centre
Emergency telephone numbers	+ 31 30 274 88 88
Other emergency telephone numbers	+ 31-10-4877700

## SECTION 2 Hazards identification

### 2.1. Classification of the substance or mixture

**Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.**

<b>Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]</b>	H314 - Skin Corrosion/Irritation Category 1B, H373 - Specific Target Organ Toxicity - Repeated Exposure Category 2, H302 - Acute Toxicity (Oral) Category 4, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### 2.2. Label elements

<b>Hazard pictogram(s)</b>	
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<b>Signal word</b>	<b>Danger</b>
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### Hazard statement(s)

<b>H314</b>	Causes severe skin burns and eye damage.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure. (Not available)
<b>H302</b>	Harmful if swallowed.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.

### Supplementary statement(s)

Not Applicable

### CLP classification (additional)

Not Applicable

### Precautionary statement(s) Prevention

<b>P260</b>	Do not breathe mist/vapours/spray.
<b>P264</b>	Wash all exposed external body areas thoroughly after handling.
<b>P280</b>	Wear protective gloves, protective clothing, eye protection and face protection.

### Precautionary statement(s) Response

<b>P301+P330+P331</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Precautionary statement(s) Storage**

P405	Store locked up.
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**Precautionary statement(s) Disposal**

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**2.3. Other hazards**

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

**SECTION 3 Composition / information on ingredients****3.1. Substances**

See 'Composition on ingredients' in Section 3.2

**3.2. Mixtures**

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics
1.2372-82-9* 2.219-145-8 3.Not Available 4.Not Available	30-40	<u>N-(3-aminopropyl)- N-dodecyl- 1,3-propanediamine</u>	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H302, H314, H318, H373, H410 <sup>[1]</sup>	Not Available
<b>Legend:</b> 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

**SECTION 4 First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ If liquid amines come in contact with the eyes, irrigate immediately and continuously with low pressure flowing water, preferably from an eye wash fountain, for 15 to 30 minutes.</li> <li>▶ For more effective flushing of the eyes, use the fingers to spread apart and hold open the eyelids. The eyes should then be "rolled" or moved in all directions.</li> <li>▶ Seek immediate medical attention, preferably from an ophthalmologist.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ In case of major exposure to liquid amine, promptly remove any contaminated clothing, including rings, watches, and shoe, preferably under a safety shower.</li> <li>▶ Wash skin for 15 to 30 minutes with plenty of water and soap. Call a physician immediately.</li> <li>▶ 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.</li> <li>▶ Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.</li> <li>▶ Discard contaminated leather articles such as shoes, belts, and watchbands.</li> <li>▶ Note to Physician: Treat any skin burns as thermal burns. After decontamination, consider the use of cold packs and topical antibiotics.</li> </ul>

<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b> (ICSC13719)</p> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ All employees working in areas where contact with amine catalysts is possible should be thoroughly trained in the administration of appropriate first aid procedures.</li> <li>▶ Experience has demonstrated that prompt administration of such aid can minimize the effects of accidental exposure.</li> <li>▶ Promptly move the affected person away from the contaminated area to an area of fresh air.</li> <li>▶ Keep the affected person calm and warm, but not hot.</li> <li>▶ If breathing is difficult, oxygen may be administered by a qualified person.</li> <li>▶ If breathing stops, give artificial respiration. Call a physician at once.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ If liquid amine are ingested, have the affected person drink several glasses of water or milk.</li> <li>▶ Do not induce vomiting.</li> <li>▶ Immediately transport to a medical facility and inform medical personnel about the nature of the exposure. The decision of whether to induce vomiting should be made by an attending physician.</li> </ul>

## 4.2 Most important symptoms and effects, both acute and delayed

See Section 11

## 4.3. Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- ▶ Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.

\* Catharsis and emesis are absolutely contra-indicated.

\* Activated charcoal does not absorb alkali.

\* Gastric lavage should not be used.

Supportive care involves the following:

- ▶ Withhold oral feedings initially.
- ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

For amines:

- ▶ Certain amines may cause injury to the respiratory tract and lungs if aspirated. Also, such products may cause tissue destruction leading to stricture. If lavage is performed, endotracheal and/or esophagoscopy control is suggested.
- ▶ No specific antidote is known.



▸ Care should be supportive and treatment based on the judgment of the physician in response to the reaction of the patient. Laboratory animal studies have shown that a few amines are suspected of causing depletion of certain white blood cells and their precursors in lymphoid tissue. These effects may be due to an immunosuppressive mechanism. Some persons with hyperreactive airways (e.g., asthmatic persons) may experience wheezing attacks (bronchospasm) when exposed to airway irritants. Lung injury may result following a single massive overexposure to high vapour concentrations or multiple exposures to lower concentrations of any pulmonary irritant material.

Health effects of amines, such as skin irritation and transient corneal edema ("blue haze," "halo effect," "glauropsia"), are best prevented by means of formal worker education, industrial hygiene monitoring, and exposure control methods. Persons who are highly sensitive to the triggering effect of non-specific irritants should not be assigned to jobs in which such agents are used, handled, or manufactured.

**Medical surveillance programs** should consist of a pre-placement evaluation to determine if workers or applicants have any impairments (e.g., hyperreactive airways or bronchial asthma) that would limit their fitness for work in jobs with potential for exposure to amines. A clinical baseline can be established at the time of this evaluation.

Periodic medical evaluations can have significant value in the early detection of disease and in providing an opportunity for health counseling.

Medical personnel conducting medical surveillance of individuals potentially exposed to polyurethane amine catalysts should consider the following:

- Health history, with emphasis on the respiratory system and history of infections
- Physical examination, with emphasis on the respiratory system and the lymphoreticular organs (lymph nodes, spleen, etc.)
- Lung function tests, pre- and post-bronchodilator if indicated
- Total and differential white blood cell count
- Serum protein electrophoresis

Persons who are concurrently exposed to isocyanates also should be kept under medical surveillance.

Pre-existing medical conditions generally aggravated by exposure include skin disorders and allergies, chronic respiratory disease (e.g. bronchitis, asthma, emphysema), liver disorders, kidney disease, and eye disease.

Broadly speaking, exposure to amines, as characterised by amine catalysts, may cause effects similar to those caused by exposure to ammonia. As such, amines should be considered potentially injurious to any tissue that is directly contacted.

Inhalation of aerosol mists or vapors, especially of heated product, can result in chemical pneumonitis, pulmonary edema, laryngeal edema, and delayed scarring of the airway or other affected organs. There is no specific treatment.

Clinical management is based upon supportive treatment, similar to that for thermal burns.

Persons with major skin contact should be maintained under medical observation for at least 24 hours due to the possibility of delayed reactions.

**Polyurethane Amine Catalysts: Guidelines for Safe Handling and Disposal Technical Bulletin June 2000**

**Alliance for Polyurethanes Industry**

## SECTION 5 Firefighting measures

### 5.1. Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

### 5.2. Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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### 5.3. Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear full body protective clothing with breathing apparatus.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water course.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▸ For firefighting, cleaning up large spills, and other emergency operations, workers must wear a self-contained breathing apparatus with full face-piece, operated in a pressure-demand mode.</li> <li>▸ Airline and air purifying respirators should not be worn for firefighting or other emergency or upset conditions.</li> <li>▸ Respirators should be used in conjunction with a respiratory protection program, which would include suitable fit testing and medical evaluation of the user.</li> </ul>
<b>Fire/Explosion Hazard</b>	carbon dioxide (CO <sub>2</sub> ) , other pyrolysis products typical of burning organic material. May emit corrosive fumes.

## SECTION 6 Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2. Environmental precautions

See section 12

### 6.3. Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>▶ Check regularly for spills and leaks.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> </ul> <p>for amines:</p> <ul style="list-style-type: none"> <li>▶ If possible (i.e., without risk of contact or exposure), stop the leak.</li> <li>▶ Contain the spilled material by diking, then neutralize.</li> <li>▶ Next, absorb the neutralized product with clay, sawdust, vermiculite, or other inert absorbent and shovel into containers.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ First remove all ignition sources from the spill area.</li> <li>▶ Have firefighting equipment nearby, and have firefighting personnel fully trained in the proper use of the equipment and in the procedures used in fighting a chemical fire.</li> <li>▶ Spills and leaks of polyurethane amine catalysts should be contained by diking, if necessary, and cleaned up only by properly trained and equipped personnel.</li> </ul>

### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ <b>DO NOT store near acids, or oxidising agents</b></li> <li>▶ No smoking, naked lights, heat or ignition sources.</li> </ul>

### 7.2. Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▶ Drums and jerricans must be of the non-removable head type.</li> <li>▶ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul> <p>For materials with a viscosity of at least 2680 cSt.</p>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> <li>▶ Avoid reaction with oxidising agents</li> </ul> <p>Amines are incompatible with:</p> <ul style="list-style-type: none"> <li>-isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides.</li> <li>-strong reducing agents such as hydrides, due to the liberation of flammable gas.</li> </ul> <p>Amines possess a characteristic ammonia smell, liquid amines have a distinctive "fishy" smell.</p>



X — Must not be stored together

0 — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

BIOGUARD PLUS

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine	Dermal 8.96 mg/kg bw/day (Systemic, Chronic) Inhalation 0.789 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 3.2 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.118 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 40 µg/kg bw/day (Systemic, Chronic) *	0.001 mg/L (Water (Fresh)) 0 mg/L (Water - Intermittent release) 0 mg/L (Water (Marine)) 3.2 mg/kg sediment dw (Sediment (Fresh Water)) 0.13 mg/kg sediment dw (Sediment (Marine)) 45.34 mg/kg soil dw (Soil) 0.18 mg/L (STP)

\* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

Not Applicable

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
BIOGUARD PLUS	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine	Not Available	Not Available

Occupational Exposure Banding

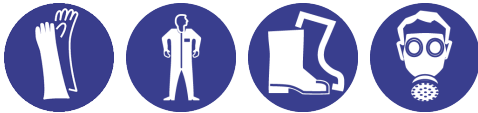
Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine	E	≤ 0.1 ppm

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more.

8.2. Exposure controls

8.2.1. Appropriate 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.
8.2.2. Personal protection	
Eye and face protection	Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.

	<ul style="list-style-type: none"> <li>▶ Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.</li> <li>▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.</li> </ul> <p>For amines: SPECIAL PRECAUTION:</p> <ul style="list-style-type: none"> <li>▶ Because amines are alkaline materials that can cause rapid and severe tissue damage, wearing of contact lenses while working with amines is strongly discouraged. Wearing such lenses can prolong contact of the eye tissue with the amine, thereby causing more severe damage.</li> <li>▶ Appropriate eye protection should be worn whenever amines are handled or whenever there is any possibility of direct contact with liquid products, vapors, or aerosol mists.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Elbow length PVC gloves</li> <li>▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.</li> <li>▶ Application of a non-perfumed moisturiser is recommended</li> <li>▶ Where there is a possibility of exposure to liquid amines skin protection should include: rubber gloves, (neoprene, nitrile, or butyl).</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> </ul>

## Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	AK-AUS / Class1 P2	-
up to 50	1000	-	AK-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	AK-2 P2
up to 100	10000	-	AK-3 P2
100+			Airline**

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

Where engineering controls are not feasible and work practices do not reduce airborne amine concentrations below recommended exposure limits, appropriate respiratory protection should be used. In such cases, air-purifying respirators equipped with cartridges designed to protect against amines are recommended.

### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Yellow
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Physical state	Liquid	Relative density (Water = 1)	0.97
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	>7	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available BuAC = 1	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

## 9.2. Other information

Not Available

## SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7
10.2. Chemical stability	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
10.3. Possibility of hazardous reactions	See section 7
10.4. Conditions to avoid	See section 7
10.5. Incompatible materials	See section 7
10.6. Hazardous decomposition products	See section 5

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

Inhaled	<p>Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs.</p> <p>Inhalation of alkaline corrosives may produce irritation of the respiratory tract with coughing, choking, pain and mucous membrane damage. Pulmonary oedema may develop in more severe cases; this may be immediate or in most cases following a latent period of 5-72 hours. Symptoms may include a tightness in the chest, dyspnoea, frothy sputum, cyanosis and dizziness.</p> <p>Inhalation of amine vapours may cause irritation of the mucous membranes of the nose and throat and lung irritation with respiratory distress and cough. Single exposures to near lethal concentrations and repeated exposures to sublethal concentrations produces tracheitis, bronchitis, pneumonitis and pulmonary oedema. Aliphatic and alicyclic amines are generally well absorbed from the respiratory tract.</p>
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<b>Ingestion</b>	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Ingestion of alkaline corrosives may produce immediate pain, and circumoral burns. Mucous membrane corrosive damage is characterised by a white appearance and soapy feel; this may then become brown, oedematous and ulcerated. Profuse salivation with an inability to swallow or speak may also result.</p> <p>The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p>
<b>Skin Contact</b>	<p>The material can produce severe chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep.</p> <p>Volatile amine vapours produce primary skin irritation and dermatitis. Direct local contact, with the lower molecular weight liquids, may produce skin burns. Percutaneous absorption of simple aliphatic amines is known to produce lethal effects often the same as that for oral administration.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
<b>Eye</b>	<p>When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.</p> <p>Direct contact with alkaline corrosives may produce pain and burns. Oedema, destruction of the epithelium, corneal opacification and iritis may occur. In less severe cases these symptoms tend to resolve.</p> <p>Vapours of volatile amines cause eye irritation with lachrymation, conjunctivitis and minor transient corneal oedema which results in "halos" around lights (glauropsia, "blue haze", or "blue-grey haze"). Vision may become misty and halos may appear several hours after workers are exposed to the substance</p> <p>This effect generally disappears spontaneously within a few hours of the end of exposure, and does not produce physiological after-effects. However oedema of the corneal epithelium, which is primarily responsible for vision disturbances, may take more than one or more days to clear, depending on the severity of exposure.</p> <p>The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p>
<b>Chronic</b>	<p>Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur.</p> <p>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.</p> <p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p>

<b>BIOGUARD PLUS</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>N-(3-aminopropyl)- N-dodecyl- 1,3-propanediamine</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >600 mg/kg * <sup>[2]</sup>	Skin (rabbit): Corrosive *
	Oral(Rat) LD50; 245 mg/kg * <sup>[2]</sup>	Skin: adverse effect observed (corrosive) <sup>[1]</sup>

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>N-(3-aminopropyl)- N-dodecyl- 1,3-propanediamine</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. No significant acute toxicological data identified in literature search.</p> <p>For Fatty Nitrogen-Derived ether amines and Fatty Nitrogen-derived amines (FND ether amines and FND amines): FND ether amines and FND amines are very similar in structure and function. . The minimal difference among the alkyl substituents and the large database for the FND categories indicates that the structural differences in these large alkyl chains do not result in differences in toxicity or mutagenicity.</p> <p>The differences in chain length, degree of saturation of the carbon chains, source of the natural oils, or addition of an amino group in the chain would not be expected to have an impact on the toxicity profile.</p> <p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.</p> <p>Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).</p> <p>The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause</p>
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	<p>further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p> <p>For alkyl polyamines:</p> <p>The alkyl polyamines cluster consists of organic compounds containing two terminal primary amine groups and at least one secondary amine group. Typically these substances are derivatives of ethylenediamine, propylenediamine or hexanediamine. The molecular weight range for the entire cluster is relatively narrow, ranging from 103 to 232</p> <p>Acute toxicity of the alkyl polyamines cluster is low to moderate via oral exposure and a moderate to high via dermal exposure. Cluster members have been shown to be eye irritants, skin irritants, and skin sensitisers in experimental animals. The acute oral LD50 in the rat was estimated to be ~ 260 mg/kg. Dermal LD50 was determined to be greater than 600 mg/kg pure substance.</p> <p>The substance (in 30% concentration) is severely irritating/ corrosive to the skin but was not a sensitiser when tested in low concentrations. A 90-day oral toxicity study showed at higher doses (30 and 90 mg/kg/day), a dose related increase in some liver enzymes but, no treatment related effects at doses of 5 or 10 mg/kg/day. It was not found to produce mutations in S. typhimurium, or the Chinese hamster V-79 cell line and there were no clastogenic effects in the Chinese hamster V-79 cell line. NICNAS Public Report 1995</p>
<p><b>BIOGUARD PLUS &amp; N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine</b></p>	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.</p> <p>While it is difficult to generalise about the full range of potential health effects posed by exposure to the many different amine compounds, characterised by those used in the manufacture of polyurethane and polyisocyanurate foams, it is agreed that overexposure to the majority of these materials may cause adverse health effects.</p> <ul style="list-style-type: none"> <li>▶ Many amine-based compounds can induce histamine liberation, which, in turn, can trigger allergic and other physiological effects, including bronchoconstriction or bronchial asthma and rhinitis.</li> <li>▶ Systemic symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, tachycardia (rapid heartbeat), itching, erythema (reddening of the skin), urticaria (hives), and facial edema (swelling). Systemic effects (those affecting the body) that are related to the pharmacological action of amines are usually transient.</li> </ul> <p>Typically, there are four routes of possible or potential exposure: inhalation, skin contact, eye contact, and ingestion.</p> <p><b>Inhalation:</b></p> <p>Inhalation of vapors may, depending upon the physical and chemical properties of the specific product and the degree and length of exposure, result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Products with higher vapour pressures have a greater potential for higher airborne concentrations. This increases the probability of worker exposure.</p> <p>Higher concentrations of certain amines can produce severe respiratory irritation, characterised by nasal discharge, coughing, difficulty in breathing, and chest pains.</p> <p>Chronic exposure via inhalation may cause headache, nausea, vomiting, drowsiness, sore throat, bronchopneumonia, and possible lung damage.</p>

Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✓
Mutagenicity	✗	Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

### 11.2.1. Endocrine Disruption Properties

Not Available

## SECTION 12 Ecological information

### 12.1. Toxicity

BIOGUARD PLUS	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	0.051-0.113mg/L	4
	LC50	96h	Fish	0.261-0.539mg/L	4

	NOEC(ECx)	72h	Algae or other aquatic plants	0.007mg/l	2
	EC50	96h	Algae or other aquatic plants	0.054mg/l	2
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Prevent, by any means available, spillage from entering drains or water courses.

**DO NOT** discharge into sewer or waterways.

## 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

## 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

## 12.4. Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

## 12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

## 12.6. Endocrine Disruption Properties

Not Available

## 12.7. Other adverse effects

Not Available

## SECTION 13 Disposal considerations



### 13.1. Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Treat and neutralise at an approved treatment plant.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available



**SECTION 14 Transport information**

**Labels Required**

	
Marine Pollutant	

**Land transport (ADR-RID)**

14.1. UN number	2735	
14.2. UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)	
14.3. Transport hazard class(es)	Class	8
	Subrisk	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Hazard identification (Kemler)	80
	Classification code	C7
	Hazard Label	8
	Special provisions	274
	Limited quantity	1 L
	Tunnel Restriction Code	2 (E)

**Air transport (ICAO-IATA / DGR)**

14.1. UN number	2735	
14.2. UN proper shipping name	Amines, liquid, corrosive, n.o.s. * (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine); Polyamines, liquid, corrosive, n.o.s. * (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)	
14.3. Transport hazard class(es)	ICAO/IATA Class	8
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	8L
14.4. Packing group	II	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	A3 A803
	Cargo Only Packing Instructions	855
	Cargo Only Maximum Qty / Pack	30 L
	Passenger and Cargo Packing Instructions	851
	Passenger and Cargo Maximum Qty / Pack	1 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y840
	Passenger and Cargo Limited Maximum Qty / Pack	0.5 L

**Sea transport (IMDG-Code / GGVSee)**

14.1. UN number	2735
14.2. UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)

14.3. <b>Transport hazard class(es)</b>	IMDG Class	8
	IMDG Subrisk	Not Applicable
14.4. <b>Packing group</b>	II	
14.5. <b>Environmental hazard</b>	Marine Pollutant	
14.6. <b>Special precautions for user</b>	EMS Number	F-A , S-B
	Special provisions	274
	Limited Quantities	1 L

#### Inland waterways transport (ADN)

14.1. <b>UN number</b>	2735	
14.2. <b>UN proper shipping name</b>	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)	
14.3. <b>Transport hazard class(es)</b>	8	Not Applicable
14.4. <b>Packing group</b>	II	
14.5. <b>Environmental hazard</b>	Environmentally hazardous	
14.6. <b>Special precautions for user</b>	Classification code	C7
	Special provisions	274
	Limited quantity	1 L
	Equipment required	PP, EP
	Fire cones number	0

#### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

#### 14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine	Not Available

#### 14.9. Transport in bulk in accordance with the ICG Code

Product name	Ship Type
N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine	Not Available

### SECTION 15 Regulatory information

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

**N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

#### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

#### National Inventory Status

National Inventory	Status
Australia - AIIC / Australia	Yes

National Inventory	Status
Non-Industrial Use	
Canada - DSL	Yes
Canada - NDSL	No (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	No (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (N-(3-aminopropyl)-N-dodecyl-1,3-propanediamine)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	<p>Yes = All CAS declared ingredients are on the inventory</p> <p>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</p>

## SECTION 16 Other information

<b>Revision Date</b>	07/05/2021
<b>Initial Date</b>	12/02/2018

### CONTACT POINT

- For quotations contact your local Customer Services - <http://wssdirectory.wilhelmsen.com/#/customerservices> - - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Product HSE Manager, - Email: [WSS.GLOBAL.SDSINFO@wilhelmsen.com](mailto:WSS.GLOBAL.SDSINFO@wilhelmsen.com) - Telephone: Tel.: +31 10 4877775

### Full text Risk and Hazard codes

<b>H318</b>	Causes serious eye damage.
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### SDS Version Summary

Version	Date of Update	Sections Updated
11.20	07/05/2021	Acute Health (swallowed), Appearance, Environmental, Fire Fighter (fire/explosion hazard), Ingredients, Physical Properties, Storage (storage incompatibility)

### 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.

The 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. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

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# Pipe Coatings



## PRODUCT DATA SHEET

<b>BITUMAX BITUMEN/ASPHALT ENAMEL for Pipe Coating</b>	Issue Date : 6 <sup>th</sup> April 2020 Revision : 4 Version : English
<p><b>PRODUCT DESCRIPTION</b></p> <p>Bitumax Asphalt Enamel is produce by oxidizing high quality and carefully selected bitumen through an oxidizing process in a blowing column. Oxidized bitumen and inert non-fibrous fillers are then uniformly mixed to produce this product for the coating of oil &amp; gas and water pipes. It is a very versatile material that adheres well to metal surfaces. It is impact-resistant, does not impart any odor to water and is also highly electrical-resistant. It will soften gradually when heated and will change back to solid form on cooling.</p> <p>Bitumax Asphalt Enamel is mainly used as anti-corrosion materials for protection of iron and steel pipes for the oil &amp; gas and water industry.</p> <p>Technical advantages of Bitumax Asphalt Enamel :-</p> <ul style="list-style-type: none"><li>• Excellent and permanent adhesive to metal</li><li>• Low water absorption</li><li>• Impact resistant</li><li>• Flexibility</li><li>• Resistant to soil stress</li><li>• Resistant to cold stress</li><li>• High electrical resistibility</li><li>• Chemically stable</li></ul> <p><b>PACKING</b></p> <ul style="list-style-type: none"><li>• In cylindrical molded keg form of approximately 170kg per keg and palletized into 6-9 kegs/pallet</li><li>• In 25kg or 40kg kraft paper bags and palletized into 40-50 bags/pallet</li></ul> <p><b>STORAGE</b></p> <p>Cold : Bitumax Asphalt Enamel can be stored indoor or outdoor and this will not have any effect on the quality of the product. It can have a shelf life of up to 5 years.</p> <p>Hot : Bitumax Asphalt Enamel can be stored up to 72 hours if stored at coating temperature of 215°C-230°C with constant stirring. It can be stored for up to 3-4 weeks with constant stirring and in full tanks at the recommended temperatures of 180°C-200°C.</p>	<p><b>APPLICATION</b></p> <p>Steel surface must be dry, clean and free from dust and removed all traces of oil, grease and loose deposits. Steel pipes shall be maintained at least 3°C above the dew point temperature at all times during cleaning and coating process. Steel pipe shall be blast clean to surface cleanliness of Sa 2½ as per EN ISO 8501-1. Abrasive blast cleaning of steel surface should give a surface profile of 75microns +/-25microns. Recommended to use only dry abrasive (free from dust, salts and other impurities) and reusable chilled iron grit or steel grit or a mixture of both grit and shot.</p> <p>Primed the steel pipes with Bitumax Primer Type 1 or Type B (fast drying) before coating pipes with Bitumax Asphalt Enamel on a flood coating weir at a recommended application temperature of 215°C-230°C. The enamel can be stored up to 72 hours at this temperature with constant stirring but recommended to perform softening point and penetration test after 24 hours before resuming coating process. All enamel kettles are recommended to be equipped with :</p> <ol style="list-style-type: none"><li>1. Mechanical stirrers for constant stirring of enamel</li><li>2. A calibrated and readable thermometer</li><li>3. Filter screens with maximum mesh size of 3.0mm to exclude foreign matter or other materials that may cause coating flaws</li></ol> <p><b>STANDARDS</b></p> <p>Bitumax Asphalt Enamel meets the requirements of EN10300 and BS4147.</p> <p><b>QUALITY CONTROL</b></p> <p>Bitumax manufactures, test and approves the Asphalt Enamel in accordance with the requirements of ISO 9001:2015.</p> <p>Each batch of Bitumax Asphalt Enamel manufactured are tested and certified. A Certificate Of Quality will be issued and provided for each delivery.</p>



TECHNICAL SPECIFICATIONS							
BITUMAX BITUMEN/ASPHALT ENAMEL TABLE 2 & 3 CATEGORY 1 EN10300:2005							
Characteristic/Test	GRADE A		GRADE B		GRADE C		Test Method
	Min.	Max.	Min.	Max.	Min.	Max.	
Filler content by ignition, % by mass	25	35	25	35	45	55	Annex K
Density at 25 °C, g/cm <sup>3</sup>	1.2	1.4	1.2	1.4	1.4	1.65	Annex L
Softening point °C (Ring & Ball)	100	120	110	130	120	150	EN 1427
Penetration at 25 °C, 0.1 mm	10	20	5	17	5	15	EN 1426
Flash point(Cleveland Open Cup), min °C	250	-	260	-	260	-	EN ISO 2592
Sag, max., mm							
60 °C 24h	-	1.5	-	-	-	-	Annex D
75 °C 24h	-	-	-	1.5	-	1.5	
Bend at 0 °C, min., mm	20	-	15	-	10	-	Annex G
Impact disbonded area, max., mm <sup>2</sup>							
at 0 °C	-	15000	-	-	-	-	Annex E
at 25 °C	-	-	-	6500	-	6500	
Peel, initial and delayed max., mm							
at 30 °C	-	3.0	-	3.0	-	-	Annex F, F.4.1
at 40 °C	-	3.0	-	3.0	-	3.0	
at 50 °C	-	3.0	-	3.0	-	3.0	
at 60 °C	-	3.0	-	3.0	-	3.0	
Cathodic Disbonding at (20+/-5)°C,28 days, max, mm	-	10	-	10	-	10	Annex I

TECHNICAL SPECIFICATIONS							
BITUMAX BITUMEN/ASPHALT ENAMEL TYPE II BS4147:1980							
Characteristic/Test	GRADE A		GRADE B		GRADE C		Test Method
	Min.	Max.	Min.	Max.	Min.	Max.	
Filler content by ignition, % by mass	25	35	25	35	45	55	BS 4147 Append B
Density at 25 °C, g/cm <sup>3</sup>	1.2	1.4	1.2	1.4	1.4	1.65	BS 4147 Append C
Softening point °C (Ring & Ball)	100	120	115	130	120	150	BS 2000 Part 58
Penetration at 25 °C, 0.1 mm	10	20	5	17	5	15	BS 2000 Part 49
Flash point(Cleveland Open Cup), min °C	250	-	260	-	260	-	BS 4689
Sag, max., mm							
60 °C 24h	-	1.5	-	-	-	-	BS 4147 Append E
75 °C 24h	-	-	-	1.5	-	1.5	
Bend at 0 °C, min., mm	20	-	15	-	10	-	BS 4147 Append F
Impact disbonded area, max., mm <sup>2</sup>							
at 0 °C	-	15000	-	-	-	-	BS 4147 Append G
at 25 °C	-	-	-	6500	-	6500	
Peel, initial and delayed max., mm							
at 30 °C	-	3.0	-	3.0	-	-	BS 4147 Append H
at 40 °C	-	3.0	-	3.0	-	3.0	
at 50 °C	-	3.0	-	3.0	-	3.0	
at 60 °C	-	3.0	-	3.0	-	3.0	
Cathodic Disbonding at (20+/-5)°C,28 days, max, mm	-	10	-	10	-	10	BS4164 Append M

**DISCLAIMER :** Information contained in this publication is accurate to the best knowledge and belief of BITUMAX INDUSTRIES SDN BHD (Company). Any information or advice obtained from the Company and/or its representatives is also given in good faith and it remains at all times the responsibility of the customer to ensure that the materials are suitable for the purpose intended. Due to a policy of continued development work and according to the availability of raw materials, products may differ in detail from those describe and are offered subject to the Company's conditions of sale, available on request.

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## SAFETY DATA SHEET

Issue Date : 6<sup>th</sup> April 2020  
Revision : 4  
Version : English

### SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1. Product identifier** : **BITUMAX ASPHALT ENAMEL – Solid**  
**BITUMAX BITUMEN ENAMEL – Solid**
- 1.2. Relevant identified uses of the substance or mixture and uses advised against** : BITUMAX ASPHALT ENAMEL is mainly used as an anti-corrosive protection material for iron or steel oil & gas pipelines, water pipelines in combination with BITUMAX PRIMER and recommended INNERWRAP & OUTERWRAP. BITUMAX ASPHALT ENAMEL is produced according to international standards and specifications.
- 1.3. Details of the supplier of the safety data sheet** : Supplier : Bitumax Industries Sdn Bhd  
18-1, Jalan Puteri 2/5, Bandar Puteri Puchong, 47100 Puchong  
Selangor D.E., Malaysia  
Tel : +603-80604608  
Fax : +603-80601744  
Email : [sonny@bitumax.com.my](mailto:sonny@bitumax.com.my)
- 1.4. Emergency telephone number:** +603-80604608  
+6012-3811182 for Outside Malaysia.  
(Opens 9am-5pm on Mondays to Fridays except Malaysian Public Holidays).

### SECTION 2 : HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture** : Based on available data this substance/mixture does not meet the classification criteria.
- 2.2. Label Elements** : Hazard Pictograms : Not required.  
Signal Word : No signal word.  
Hazard Statements : Not classified as PHYSICAL/HEALTH/ENVIRONMENT HAZARDS.  
Precautionary Statements : No Precautionary Statements.  
Supplemental Information : None.
- 2.3. Other Hazard** : Not classified as flammable but risks of burn and risk of breathing bitumen fumes due to high handling temperatures.  
Bitumen fumes can cause irritation of the respiratory system, eyes and skin.



## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances : Not applicable

3.2. Mixtures :

CAS NO	CHEMICAL NAME	%	CLP-CLASSIFICATION	NOTE
64742-93-4	Oxidized Bitumen	45-75	-	-
1332-58-7	Filler	25-55	-	-

## SECTION 4 : FIRST AID MEASURES

### 4.1. Description of first aid measures

General information : DO NOT DELAY. Keep victim calm. Obtain medical treatment immediately.

Inhalation : If inhalation of mists, fumes or vapors causes irritation to the nose or throat, remove to fresh air. If rapid recovery does not occur, obtain medical attention. Casualties suffering ill effects as a result of exposure to hydrogen sulphide (H<sub>2</sub>S) should be removed to fresh air. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty in breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardiopulmonary Resuscitation (CPR) as require and transport to the nearest medical facility.

Skin Contact : If contact with hot product, cool the burn area by flushing with large amounts of water. Do not attempt to remove anything from the burn area or apply burn creams or ointments. Cover the burn area loosely with a sterile dressing, if available. Transport to the nearest medical facility for additional treatment. It should be noted this product contracts on cooling. Where a limb is encased, care should be taken to avoid the development of a tourniquet effect. In the event of this occurring the adhering product must be softened and/or split to prevent restriction of blood flow. All burns should receive medical attention.

Eye Contact : Hot product - If contact with hot product, cool the burn area by flushing with large amounts of water. Do not attempt to remove anything from the burn area or apply burn creams or ointments. Cover the burn area loosely with sterile dressing, if available. Transport to the nearest medical facility for additional treatment. All burns should receive medical attention.  
Cold product – Flush eye with copious of water. If persistent irritation occurs, obtain medical attention.

Ingestion : Under normal conditions of use, this is not expected to be a primary route of exposure.

Advice to Physician : Do not attempt to remove the product from the skin as it provides an airtight sterile covering, which will eventually fall away with the scab as the burn heals. If removal is attempted, mineral oil (not mineral spirits) or a mineral oil based ointment may be applied to help soften the product to facilitate removal.

Hydrogen sulphide (H<sub>2</sub>S) – CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER : Oxygen therapy. Consult a Poison Control Center for guidance.

### 4.2. Most important symptoms and effects, both acute and delayed

: Contact with hot product causes burns.  
Bitumen fumes can cause respiratory tract or eye irritation.





#### 4.3. Indication of any immediate medical attention and special treatment needed

: Solid/Cold Product -No treatment needed  
Liquid Hot Product -See Section 4.1. above

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### SECTION 5 : FIREFIGHTING MEASURES

5.1. Extinguishing media : Suitable -Extinguish with foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.  
Unsuitable -Water jet as it may result in an explosive boil-over.

#### 5.2. Special hazards arising from the substance or mixture

: Hazardous combustion products may include-  
A complex mixture of airborne solid and liquid particulates and gases (smoke).  
Carbon monoxide.  
Unidentified organic and inorganic compounds.  
Boil-over of tanks and violent eruptions may occur in the presence of water.

#### 5.3. Advice for firefighters

: Proper protective equipment and a full-face-pressure self-contained breathing apparatus must be worn when approaching a fire in a confined space. Avoid inhalation of vapor and flue gases- seek fresh air.

---

### SECTION 6 : ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal precautions, protective equipment and emergency procedures

: Wear gloves and normal protective clothing.

#### 6.2. Environmental precautions

: Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.

#### 6.3. Methods and material for containment and cleaning up

: Small spillage - Allow product to cool and solidify. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.  
Large spillage – Prevent from spreading by making a barrier with sand, earth or other Containment material. Treat residue as for small spillage.

#### 6.4. Reference to other sections

: See Section 8 for protective equipment.  
See Section 13 for instruction of disposal.

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### SECTION 7 : HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

: No special precautions when handled in solid /cold form.  
Avoid contact with hot liquid to prevent thermal burns.  
Avoid breathing fumes.  
Hot liquid product must be kept away from water and other liquids.  
Handling temperature : 215°C-230°C

#### 7.2. Conditions for safe storage, including any incompatibilities

: No special precautions when stored in solid / cold form.  
Bitumax Asphalt Enamel can be stored at 180°C-200°C with constant stirring for a limited period of time. Bitumax Asphalt Enamel which has been kept for more than 5 hours at 240°C or above must be discarded.

#### 7.3. Specific end use(s)

: See Section 1.



## SECTION 8 : EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1. Control Parameters:

Ingredient	Exposure Limit	Exposure Time Limit	Legal Basis
Bitumen Fumes	10mg/m <sup>3</sup>	15 minutes	ACGIH, OSHA Z1-Z3
Bitumen Fumes	5mg/m <sup>3</sup>	8 hours	
<b>Note</b>	None		
<b>Monitoring Procedures</b>	Compliance with the stated occupational exposure limits may checked by occupational hygiene measurements.		

### 8.2. Exposure Controls

Appropriate engineering controls

: Bitumax Asphalt Enamel is normally applied at temperatures between 215°C-230°C using a flooding coating weir or flood box.  
 Good and effective local exhaust ventilation must be provided over application area.  
 Heating must be thermostatically controlled.  
 The product temperature should not exceed 240°C as it may result in unnecessary smoke and to avoid thermal degradation.  
 Product temperature must be easily measured at the workplace.  
 Good personal hygiene should always be followed.

Personal protective equipment,  
Respiratory protection

: Respiratory protection with A2 and P2 filters must be available at workplace.

Personal protective equipment,  
Hand protection

: Use heat resistant gloves.

Personal protective equipment,  
Skin protection

: Overalls and/or long-sleeved jackets and full length trousers should be worn.

Personal protective equipment,  
Eye/Face protection

: Wear face shield where splashing is possible.

Environmental exposure controls : Ensure compliance with local regulations for emissions.

## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	: Black solid at ambient temperature, liquid at handling temperature	<b>Vapour Pressure</b>	: No data
<b>Odour</b>	: None/Weak	<b>Vapour Density</b>	: No data
<b>Odour Threshold</b>	: No data	<b>Relative Density</b>	: 1.2-1.4g/cm <sup>3</sup>
<b>pH</b>	: No data	<b>Solubility</b>	: Insoluble in water
<b>Melting point/freezing point</b>	: No data	<b>Partition coefficient n-octanol/water</b>	: No data
<b>Initial Boiling point &amp; boiling range</b>	: No data	<b>Auto-ignition temperature</b>	: 350°C
<b>Flash Point</b>	: 260°C (Cleveland Open Cup)	<b>Decomposition temperature</b>	: No data
<b>Evaporation rate</b>	: No data	<b>Viscosity</b>	: No data
<b>Flammable (solid,gas)</b>	: No data	<b>Explosive properties</b>	: Not explosive
<b>Upper/lower</b>	: No data	<b>Oxidising properties</b>	: Not applicable



flammability or explosive limits			
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**9.2. Other information** : Softening Point 110°C-130°C  
Penetration (1/10mm) 5-17 @25°C

## SECTION 10 : STABILITY AND REACTIVITY

**10.1. Reactivity** : Not Reactive.

**10.2. Chemical Stability** : Stable when used in accordance with supplier's directions.

**10.3. Possibility of hazardous reactions** : No risk of hazardous reactions

**10.4. Conditions to avoid** : Heating above the maximum recommended storage and handling temperature will cause degradation and evolution of the flammable vapours.

**10.5. Incompatible materials** : Do not allow molten materials to contact water or liquids as this can cause violent eruptions, splatter hot materials, or ignite flammable material.  
React with strong oxidizing agents.

**10.6. Hazardous decomposition products** : Hazardous smoke may occur if temperature of 240°C is exceeded.

## SECTION 11 : TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

Acute oral toxicity : Based on available data, the classification criteria are not met.

Acute dermal toxicity : Based on available data, the classification criteria are not met.

Acute inhalation toxicity : Product does not have to be classified. Test data not available.

Skin corrosion/irritation : Contact with hot material can cause thermal burns which may result in permanent skin damage. Slightly irritating to skin. Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation : Hot material may cause severe eye burns/blindness. Irritating to eyes. Based on available data, the classification criteria are not met.

Respiratory sensitisation or skin sensitisation : Based on available data, the classification criteria are not met.

Germ cell mutagenicity : Based on available data, the classification criteria are not met.

Carcinogenic properties : No carcinogenicity classification.  
Bitumen contain low concentrations of Polycyclic Aromatic Compounds (PACs). At ambient temperature and in undiluted bitumen, these are PACs are not considered to be bio-available. However, if bitumen are mixed with diluents to obtain a low viscosity at ambient temperatures, or heated, it is believed that such may become bio-available. A 2 year inhalation study that exposed rats to fumes collected from air-rectified bitumen was negative.



Reproductive toxicity	: Based on available data, the classification criteria are not met.
Single STOT exposure	: Product does not have to be classified. Test data not available.
Repeated STOT exposure	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Not an aspiration hazard.
Other further information	: None known.

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## SECTION 12 : ECOLOGICAL INFORMATION

**12.1. Toxicity** : Bitumen is not regarded as harmful to the environment.  
Based on available data, the classification criteria are not met.

**12.2. Persistence and degradability:** Not biodegradable. Test data not available.

**12.3. Bio-accumulative potential** : Test data not available.

**12.4. Mobility in soil** : Test data not available.

**12.5. Results of PBT and vPvB assessment** : No assessment has been made.

**12.6. Other adverse effects** : None known.

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## SECTION 13 : DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods** : 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.

EWC-code : 17 03 02

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## SECTION 14 : TRANSPORT INFORMATION

Not classified as dangerous for transport.

**14.1. UN number** : Nil

**14.2. UN proper shipping name** : Nil

**14.3. Transport hazard class(es)** : Nil

**14.4. Packing group** : Nil

**14.5. Environmental hazards** : Nil

**14.6. Special precautions for user** : None.

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not relevant.

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## SECTION 15 : REGULATORY INFORMATION

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture** : None.

**15.2. Chemical safety assessment** : No chemical assessment has been performed or carry out.

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## SECTION 16 : OTHER INFORMATION

### Abbreviations and acronyms

PBT : Persistent, Bioaccumulative and Toxic  
vPvB : Very Persistent and Very Bioaccumulative  
STOT : Specific Target Organ Toxicity  
CLP : CLP-Regulation (EC) No. 1272/2008 (Classification, Labelling and Packaging).  
ACGIH : American Conference of Government Industrial Hygienists  
OSHA Z1-Z3 : Occupational Safety and Health Administration Table Z1,Z2 & Z3

**Training advice** : To follow national rules applying for work with bitumen products.  
The user must be instructed in the proper work procedure and be familiar with the contents of this safety data sheet.

**Further information** : This Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of publication. The information is designed only as a guide for safe handling, usage, storage, transportation, disposal and release and is not to be considered as a product warranty or quality specification. The information relates only to the specific product designated and may not be valid for such product used in combination with other materials or in any process, unless specified in text.

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## PRODUCT DATA SHEET

### BITUMAX PRIMER TYPE 1 & TYPE B (Fast Dry) for Pipe Coating

Issue Date : 6<sup>th</sup> April 2020  
Revision : 4  
Version : English

#### PRODUCT DESCRIPTION

Bitumax Primer Type 1 & Type B is based on chlorinated rubber dissolved in organic solvent. It is very quick drying and can be applied by roller, rags, brush, air-less and conventional spray. Its quick drying properties permit pipe sections to be hot coat and wrapped within minutes. It may be used for both internal and external priming of pipes.

Technical advantages and uses of Bitumax Primer Type 1 & B :-

- Great increased in bond factor compared to conventional coal tar and bitumen primer
- Compatible with both Asphalt and Coal Tar enamel coatings
- Remains active for months after application
- It can be used for internal & external of pipes
- It imparts no odor or taste

It can be used prior to the application of pipeline enamels.

Its free flowing properties permit coverage of 8-16m<sup>2</sup> per liter (400-800 ft<sup>2</sup> per imperial gallon) on new pipe surfaces.

#### PACKING

- In steel drums filled up to 200 liters per drum
- In metal pails filled up to 20 liters per pail

#### STORAGE

Store away from naked flames or boiler. Shelf life up to 2 years in original sealed containers at temperatures not exceeding 38°C (100°F). In hot climatic (desert) conditions drums should be stored in the shade or shallow buried.

#### APPLICATION

For use in conjunction with coal tar and asphalt enamel pipeline coatings. Bitumax Primer Type 1 & B greatly simplifies the priming operation as the drying time is reduced to a few minutes.

Steel surface must be dry, clean and free from dust and removed all traces of oil, grease and loose deposits. Steel pipes shall be maintained at least 3°C above the dew point temperature at all times during cleaning and coating process. Steel pipe shall be blast clean to surface cleanliness of Sa 2½ as per EN ISO 8501-1.

Abrasive blast cleaning of steel surface should give a surface profile of 75microns +/-25microns. Recommended to use only dry abrasive (free from dust, salts and other impurities) and reusable chilled iron grit or steel grit or a mixture of both grit and shot.

If the surface preparation is accurately controlled and the pipe surface is not rough, a coverage rate of 12m<sup>2</sup>/liter (600ft<sup>2</sup>/gallon) should be achieved. However, because coverage rates change depending on site conditions and the type of equipment being used, variations may be experienced. Bitumax Primer Type 1 & B is free flowing but recommended to stir before use and should not be thinned. All primer not in use should be kept in closed containers and care should be taken to avoid excessive loss of solvent, which would lead to a thickening of the primer.

Brushes, spray equipment and priming rags can be cleaned using xylene solvent. Failing this they should be immersed in primer. Other incompatible solvents must be avoided.

The primed pipe should have a uniformed film of primer, free from runs, drips or missed spots. It should not be applied when the temperature of the pipe surface is above 60°C (140°F). The use of Bitumax Primer Type 1 & B eliminates the necessity to coat the primed pipe within a specific period of time. It remains active almost indefinitely.

#### STANDARDS

Bitumax Primer Type 1 and Type B meets the requirements of :-

- EN10300:2005 Table 1 (Bitumen)
- BS4147 Type B (Bitumen)
- BS4164 Type B (Coal Tar)
- AWWA C203 Type B (Coal Tar)
- International Standard ISO5256

#### QUALITY CONTROL

Bitumax manufactures, test and approves the primer in accordance with the requirements of ISO 9001:2015.

Each batch of Bitumax primer manufactured are tested and certified. A Certificate Of Quality will be issued and provided for each delivery.



## TECHNICAL SPECIFICATIONS

CHARACTERISTIC	LIMITS	EN10300:2005	BS4147:1980	AWWA C203
Viscosity Flow Cup 4(23°C), sec	35-60	EN ISO 2431	BS 3900, Part A6	Description stated in section 2.4.2 of the standard
Flash point (Abel Closed Cup), °C	Min. 23	EN ISO 13736	BS 2000, Part 170	
Volatile matter, % loss by mass	Max. 75	EN 10300 Annex H	BS 4147, Append A	
Drying Time at 15°C (minutes)	5-15	-	BS 4164: 1987, Append P	

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## SAFETY DATA SHEET

Issue Date : 6<sup>th</sup> April 2020  
Revision : 4  
Version : English



### SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1. Product identifier** : **BITUMAX PRIMER TYPE 1**  
**BITUMAX PRIMER TYPE B**
- 1.2. Relevant identified uses of the substance or mixture and uses advised against** : **The product is used as a prime coat or adhesion before application of BITUMAX Bitumen/Asphalt Enamel as anti-corrosion coatings for steel oil & gas and water pipelines.**
- 1.3. Details of the supplier of the safety data sheet** : Supplier : Bitumax Industries Sdn Bhd  
18-1, Jalan Puteri 2/5, Bandar Puteri Puchong, 47100 Puchong  
Selangor D.E., Malaysia  
Tel : +603-80604608  
Fax : +603-80601744  
Email : [sonny@bitumax.com.my](mailto:sonny@bitumax.com.my)
- 1.4. Emergency telephone number:** +603-80604608  
+6012-3811182 for Outside Malaysia.  
(Opens 9am-5pm on Mondays to Fridays except Malaysian Public Holidays).

### SECTION 2 : HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

Harmonised Classification-Annex VI of Regulation (EC) No.1272/2008 (CLP Regulation) : Flam.Liq.3 -H226  
Acute Tox.4 -H312  
Acute Tox.4 -H332  
Skin Irrit.2 -H315

2.2. Label Elements:		Hazard Pictograms Signal Words
Contains :	Xylene	  <b>WARNING</b>
Hazard statements:	Flammable liquid and vapour (H226) Harmful in contact with skin. (H312) Causes skin irritation. (H315) Harmful if inhaled. (H332)	
Precautionary statements:	Keep away from heat/sparks/open flames/hot surfaces. No smoking. (P210) Avoid breathing vapours. (P261) Wear protective gloves/protective clothing/eye protection/face protection. (P280) Call a POISON CENTER or doctor/physician if feel unwell. (P312) Dispose of contents/container to appropriate waste site in accordance with national and local regulations. (P501)	





# BITUMAX INDUSTRIES SDN. BHD.

Supplemental Information :	None.	
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**2.3. Other hazards** : This product does not contain any PBT or vPvB substances.

## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

**3.1. Substances** : Not applicable

**3.2. Mixtures** : Contains:-

CAS No EC No	CHEMICAL NAME	%	CLP-CLASSIFICATION	NOTE
1330-20-7 215-535-7	Xylene	60-70	Flam.Liq3;H226, Acute Tox.4;H332, Acute Tox.4;H312, Skin Irrit.2;H315	This substance is an organic solvent & volatile.
1333-86-4 215-609-9	Carbon Black	<1	No classification	This substance is possibly carcinogenic.

## SECTION 4 : FIRST AID MEASURES

### 4.1. Description of first aid measures

**General information** : DO NOT DELAY. Keep victim calm. Obtain medical treatment immediately.

**Inhalation** : Remove to fresh air and rest under surveillance. Obtain medical attention.  
If the person is breathing place in recovery position and keep warm.  
If unconscious, call ambulance and perform artificial respiratory.

**Skin Contact** : Immediately remove contaminated clothing. Wash skin with soap and large amount of water. Rinse thoroughly.

**Eye Contact** : Rinse opened eye immediately with plenty of water for at least 15 minutes.  
Remove any contact lenses. Seek medical advice if irritation persists.

**Ingestion** : Rinse mouth thoroughly and drink water. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content does not get into lungs. Seek medical advice.

**Burns** : Rinse with water until the pain stops. Remove clothes that do not adhere to the body.  
Keep cooling burn area with water while transporting or while waiting.

**Others information** : When obtaining medical advice, show the safety data sheet or label.

### 4.2. Most important symptoms and effects, both acute and delayed

: Irritating to skin. Inhalation or skin contact may cause drowsiness, dizziness, headache, intoxication and delayed response ability and at high concentration, unconsciousness. Vapours/spray may irritate the airways. Splashes in the eyes may cause irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

: No special immediate treatment required.



## SECTION 5 : FIREFIGHTING MEASURE

- 5.1. Extinguishing media** : Suitable -Extinguish with powder, foam, carbon dioxide or water mist.  
Larger fires, use water spray or alcohol resistance foam.  
Unsuitable -Do not use water jet, as it may spread the fire.
- 5.2. Special hazards arising from the substance or mixture** : In fire conditions, the product may release hydrogen chloride and oxides of carbon.
- 5.3. Advice for firefighters** : Coordinate with fire in surroundings. In case of larger fires, wear full-face positive-pressure self-contained breathing apparatus and protective suit.  
If possible without risk, containers close to fire should be removed or cooled with water/water mist.

## SECTION 6 : ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment and emergency procedures** : Provide adequate ventilation.  
Use personal protection.  
Beware of the explosion hazard. Keep away from sources of ignition.
- 6.2. Environmental precautions** : Prevent seepage into sewage system, work pits and cellars. Do not allow to enter sewers surface or ground water.
- 6.3. Methods and material for containment and cleaning** : Absorb with liquid-binding materials (sand, diatomite, acid binders universal binders, sawdust). Place in container for disposal according to local regulations. Ensure adequate ventilation.
- 6.4. Reference to other sections** : See section 8 for type of protective equipment.  
See section 13 for instruction on disposal.

## SECTION 7 : HANDLING AND STORAGE

- 7.1. Precautions for safe handling** : Avoid contact with skin and eyes.  
Do not inhale vapour and spray.  
Do not smoke or use open fire.
- 7.2. Conditions for safe storage, including any incompatibilities** : Keep in tightly closed packaging. Store in dry, cool and well-ventilated place in accordance with local regulations for flammable liquids. Keep away from children and not with or near food, feeding stuff, medicine or beverages.
- 7.3. Specific end use(s)** : See Section 1.

## SECTION 8 : EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1. Control Parameters:

Ingredient	Exposure Limit	Exposure Time Limit	Legal Basis
Xylene (Mix)	662mg/m <sup>3</sup> , 150ppm	Short Term	OES (Occupational Exposure Standard)
Xylene (Mix)	441mg/m <sup>3</sup> , 100ppm	Long Term	
<b>Note</b>	Sk : Absorbed through skin		
<b>Monitoring Procedures</b>	Compliance with the stated occupational exposure limits may checked by occupational hygiene measurements.		

- 8.2. Exposure Controls**  
**Appropriate Engineering controls** : Ensure good ventilation at the workplace.



# BITUMAX INDUSTRIES SDN. BHD.

Smoking, eating and drinking, as well as storage of tobacco, food and beverages, are not allowed in the working area. Personal protective equipment must be kept separate from other clothes. Protective equipment must not be worn during lunch breaks. Running water and eye wash equipment must be available. Provide mechanical ventilation for indoor use. Wash hands before breaks, eating, toilet visits and after work. Use mild soap and water and apply skin cream after washing.

## Personal protective equipment

- 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.
- Hand protection** : Wear protective gloves, possibly with a cotton glove underneath and a thin glove over to improve grip and feel.
- Skin protection** : Wear coveralls with a hood and possibly rubber boots.
- Eye/Face protection** : Wear face shield where splashing is possible.  
Not relevant when using full-face mask.
- Environmental exposure controls** : No special requirements.

## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Black, liquid	<b>Vapour Pressure at 20°C</b>	6.7hPa
<b>Odour</b>	Aromatic (Xylene)	<b>Vapour Density</b>	No available data
<b>Odour Threshold</b>	Approx 1ppm ( Xylene )	<b>Relative Density</b>	0.99/cm <sup>3</sup>
<b>pH</b>	Not applicable	<b>Solubility</b>	Soluble in organic solvents
<b>Melting point/freezing point</b>	Undetermined	<b>Partition coefficient n-octanol/water</b>	No available data
<b>Initial Boiling point &amp; boiling range</b>	137°C	<b>Auto-ignition temperature</b>	No available data
<b>Flash Point</b>	30°C (Mixture)	<b>Decomposition temperature</b>	No available data
<b>Evaporation rate</b>	No available data	<b>Viscosity</b>	38 sec.
<b>Flammable (solid,gas)</b>	No available data	<b>Explosive properties</b>	No available data
<b>Upper/lower flammability or explosive limits</b>	Lower :1.1 vol. % Upper:7.0 vol. %	<b>Oxidising properties</b>	No applicable

**9.2. Other information** : Not Miscible

## SECTION 10 : STABILITY AND REACTIVITY

- 10.1. Reactivity** : No dangerous reactions known.
- 10.2. Chemical stability** : The product is stable when used in accordance with the supplier's directions.
- 10.3. Possibility of hazardous reactions** : Reacts with strong oxidizing agents.
- 10.4. Conditions to avoid** : Avoid heat, flames, and ignition sources.
- 10.5. Incompatible materials** : Avoid contact with strong oxidizing agents.
- 10.6. Hazardous decomposition products** : Hazardous decomposition products may be released at high temperatures.

## SECTION 11 : TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity - oral** : May cause irritation. May cause discomfort.  
The product does not have to be classified. Test date are not available.

**Acute toxicity - dermal** : Harmful in contact with skin. Solvents can be absorbed through the skin.



<b>Acute toxicity - inhalation</b>	: Inhalation of vapours or mists may cause headache, tiredness, nausea, dizziness and reduced power of concentration and at high concentrations, unconsciousness.
<b>Skin corrosion/irritation</b>	: Irritates. Prolonged contact may cause redness. Xylene can penetrate skin.
<b>Serious eye damage/eye irritation</b>	: Irritation to eyes. The product does not have to be classified. Test data are not available.
<b>Respiratory or skin sensitisation</b>	: The product does not have to be classified. Test data are not available.
<b>Germ cell mutagenicity</b>	: The product does not have to be classified. Test data are not available.
<b>Carcinogenicity</b>	: The product contains "Carbon Black" which may be carcinogenic. The carcinogenic arises only by inhalation. The product does not have to be classified. Test data are not available.
<b>Reproductive toxicity</b>	: The product contains xylene, which is suspected to impair fertility. The product does not have to be classified. Test data are not available.
<b>STOT - single exposure</b>	: Inhalation of vapours or spray cause irritation of airways. The product does not have to be classified. Test data are not available.
<b>STOT- repeated exposure</b>	: Prolonged/repeated inhalation of vapours or skin contact may cause damage to the liver, kidneys and central nervous system with symptoms such as drowsiness, headache, concentration and memory problems. Prolonged/repeated contact may cause defatting of skins which can lead to dermatitis. The product does not have to be classified. Test data are not available.
<b>Aspiration hazard</b>	: The product does not have to be classified. Test data are not available.
<b>Other toxicological effects</b>	: None/ known.

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## SECTION 12 : ECOLOGICAL INFORMATION

<b>12.1 Toxicity</b>	: Contains organic solvent that is dangerous to organisms living in water.
<b>12.2 Persistence and degradability</b>	: The organic solvents are biodegradable.
<b>12.3 Bioaccumulative potential</b>	: The solvents do not accumulate ( bioaccumulate ) in the aquatic environment .
<b>12.4 Mobility in soil</b>	: The product is insoluble in water. May spread in the aquatic environment and leach into ground and pollute the ground water. The organic solvent evaporate slowly.
<b>12.5 Results of PBT and vPvB assessment</b>	: This product does not contain any PBT or vPvB substances.
<b>12.6 Other adverse effects.</b>	: None Known

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## SECTION 13 : DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods :

Waste is to be disposed in accordance with the prevailing regulations, preferably to a recognized collector or contractor.

EWC : 08 01 02 00

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## SECTION 14 : TRANSPORT INFORMATION

Transport has to take place in accordance with national and /or international rules for transport of dangerous goods.

### ADR/RID

14.1. UN number	14.2. UN proper shipping name	14.3. Transport hazard class(es)	14.4. Packing group	14.5. Environmental hazards	Other information
1287	Rubber Solution	3	III	None	Hazard identification No. 30 Tunnel restriction code: D/E

### IMDG

14.1. UN number	14.2. UN proper shipping name	14.3. Transport hazard class(es)	14.4. Packing group	14.5. Environmental hazards	Other information
1287	Rubber Solution	3	III	None	EmS: F-E,S-E

### ADN

14.1. UN number	14.2. UN proper shipping name	14.3. Transport hazard class(es)	14.4. Packing group	14.5. Environmental hazards	Other information
1287	Rubber Solution	3	III	None	-

### IATA

14.1. UN number	14.2. UN proper shipping name	14.3. Transport hazard class(es)	14.4. Packing group	14.5. Environmental hazards	Other information
1287	Rubber Solution	3	III	None	-

14.6 Special precautions for user : None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code : Not relevant

## SECTION 15 : REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/ legislation specific for the substance or mixture : People who are under 18 years old are not allowed to work on this product unless for education purpose.

15.2. Chemical Safety assessment : No chemical safety assessment has been carried out for this mixture.

## SECTION 16 : OTHER INFORMATION

**Abbreviations and acronyms** :

- PBT : Persistent , Bioaccumulative and Toxic.
- vPvB : ver Persistent and very Bioaccumulative.
- CLP : CLP – Regulation (EC ) No 1272/2008 (Classification, Labeling and Packaging).
- Asp Tox : Aspiration hazard.
- Flam.Liq : Flammable liquid.
- Acute Tox : Acute Toxicity
- Skin Irrit : Skin Irritation.
- STOT RE : Specific target organ toxicity- repeated exposure.
- STOT SE : Specific target organ toxicity – single exposure.

**Method of classification :** Calculation based on the hazards of the known components.



# BITUMAX INDUSTRIES SDN. BHD.

**H-statements :**

H225 Highly flammable liquid and vapour.  
H226 Flammable liquid and vapour.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H332 Harmful if inhaled.

**Training advice :**

The user must be instructed in the proper work procedure and be familiar with the contents of this safety data sheet.

**Further information :**

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

---

Producer :  
 SAINT-GOBAIN HPM POLSKA Sp.z o.o  
 Oddział Adfors Polska  
 Tel. 00 48 18 354-91-00

Receiver:  
**PT BREDERO SHAW INDONESIA**  
**c/o ShawCor (Singapore) Pte Ltd**  
**Level 42, Suntec Tower Three, 8**  
 038988 SINGAPORE  
 Singapore



## MILL TEST CERTIFICATE

<b>Product:</b>	<b>Fibreglass Tissue Innerwrap</b>	<b>Certificate No.</b>	05-0722
<b>Type:</b>	<b>B 50-R8 12"x1200'</b>	<b>Date of issue:</b>	05.07.2022

<b>Roll length:</b>	4 x 366 m
<b>Width:</b>	300 mm
<b>Cardboard tube dia.:</b>	76,2 mm
<b>Nominal roll diameter:</b>	440 mm

### RESULTS of TESTS :

Distance of reinforcement yarns:	8 mm
Fibre diameter (av.):	13,8 µm
Glass hydrolytic class:	III
Porosity (average):	9,6 Pa
Thickness (average) :	0,41 mm

VE3147P

Production date	Number of roll	Gram weight	Glass content	Binder content	Moisture content	Tensile strength - longitudinal (R <sub>10</sub> )	Tensile strength - transverse (R <sub>10</sub> )
yyyy-mm-dd		g/m <sup>2</sup>	%	%	%	N/50mm	N/50mm
05.06.2022	P221562003	50,5	85,6	14,4		359,2	88,8
05.06.2022	P221562007	49,6	86,2	13,8		379,4	89,0
05.06.2022	P221562009	50,7	86,4	13,6	0,48	367,4	89,6

**Packing List No: 841575369**

<b>Average values:</b>	<b>50,3</b>	<b>86,1</b>	<b>13,9</b>	<b>0,48</b>	<b>368,7</b>	<b>89,1</b>
<b>Specification:</b>	<b>50±3</b>	<b>85 min.</b>	<b>15 max.</b>	<b>1,00 max.</b>	<b>150 min.</b>	<b>50 min.</b>

**We do hereby certify that the above mentioned material is conform to EN10300 Standard and to requirements agreed with the customer.**

**Quality System ISO 9001-2015**

Quality Control Responsible

Taras Nikolayenko

Production Responsible

Karina Depczyńska

## General Description

Dry laid glass veil **B 50 R8 Y** is used for anti-corrosion wrapping as inner-wrap layer or as reinforcement for the production of outer-wrap materials for the protection of steel pipes. Glass veil is impregnated with asphalt or enamels, and used in oil, gas and water transport. This high quality glass veil is reinforced longitudinally every 8 mm with strong glass yarns and produced with a special binder to facilitate the "bleed through" of asphalt or enamels in the pipe coating operation.

## Technical Characteristics

Characteristics (Units)	Minimum	Nominal	Maximum
Weight g/m2 (min. acc. AWWA C203-02) (1)	46,0	50,0	54,0
Binder Type (1)	Modified PF		
L.O.I. (%) - TNO COM 13	14,0		
Binder Max Temperature (°C)			260
Glass Type		C	
Glass Hydrolytic Class		3	
Input Fiber Diameter (Micron)		13	
MD Tensile Strength (N/m) (1;3)	4500	5175	
CMD Tensile Strength (N/m) (1;3)	1000	1150	
MD Tear Strength (N) (1;3)		1,5	
CMD Tear Strength (N) (1;3)		2,0	
Porosity (mm/H2O)	0,56		1,93
Bending Radius (mm)	3,2		
Thickness (mm)	0,33	0,40	
Veil Width (cm) (2)	10 - 100		
Standard Roll Length (m) (2)		366	
Standard Roll Diameter (cm) (2)		44	
Carton Core Diameter (mm)		76,2	
Test Methods:	C 203-02	Standards Conformity:	AWWA
Reinforcement Yarns <input checked="" type="checkbox"/>	Reinforcement Yarn Pitch (mm)		8
Colour White <input type="checkbox"/>	Colour b* Index <input type="checkbox"/>	Colour Yellow <input checked="" type="checkbox"/>	Colour Beige <input type="checkbox"/>

ASSOCIATE MEMBER OF INTERNATIONAL PIPE LINE & OFFSHORE CONTRACTORS ASSOCIATION (IPLOCA)  
FOREIGN ASSOCIATE MEMBER OF THE NATIONAL ASSOCIATION OF PIPE COATING APPLICATORS (NAPCA)

- (1) A Control Report can be sent to you upon request  
 (2) Other dimensions upon request  
 (3) MD = Machine Direction; CMD = Crosss Direction, unaffected in hot oil @ 260 °C for 2'  
 (4) Nominal Value (DIN53811)

Tolerances:

Width : +/- 3 mm for veil with trimmed edges

Standard length rolls may contain one splice, properly marked and spaced. Each lot (by lot is meant a full load - truck or container) can contain up to a maximum of 10% of spliced rolls and / or rolls with length 30% less than the nominal value.

The information contained herein are evaluated in accordance with our internal standard methods and should be used as a guide only and not as a specification.

To the best of our knowledge, this information is reliable as of the date below written, however we do not assume any liability for the accuracy or completeness of such information.

Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose. This information relates exclusively to our product when not used in conjunction with any third party materials.

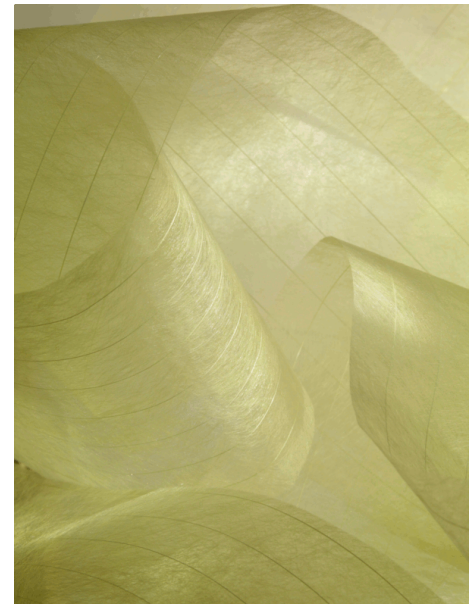
The Customer Acceptance Standard (CAS) shall apply in addition to our General Terms & Conditions of Sale which are available at [www.adfors.com](http://www.adfors.com). Both can be sent to you upon request.

It is the customer responsibility to inspect and test our product in order to ensure that our product suits for the customer's particular purpose.

## Technical Data Sheet

### Properties

- High mechanical strenght
- Chemically inert and non toxic
- Absolute rot proof
- Good dimensional stability
- Excellent resistance to UV light
- Allow a very good impregnation of asphalt or enamels



Revised by: © 2016  
ADFORS Industrial Fabrics Europe

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[www.adfors.com](http://www.adfors.com)

ADFORS Industrial Fabrics Europe reserves the right to change the information given herein without prior notice.

/ C / 28.03.14 / GOR



## TEST CERTIFICATE

### Heavy Duty Outerwrap (Type C)

(according to EN 10300:2005)

Batch Number : 114905				
Date of Production: 09-12-2022				
Test	Unit	Method	Requirement	Measured
<b>Base Glass Fibre Properties (manufacturer's specification)</b>				
Base Glass / Carrier		EN 10300	Type C	Type C
Type Of Base Glass / Carrier		EN 10300	Woven Glass Fibre	Woven Glass Fibre
Mass Per Area (before impregnation)	g/m <sup>2</sup>	EN 10300 Annex M	Min 170	176
Hydrolytic Class		ISO 719	Min Class 3	Class 3
<b>Outerwrap Properties</b>				
Mass Per Area (after impregnation)	g/m <sup>2</sup>	EN 10300 Annex M	Min 250	650
Thickness	mm	EN 1849-1 modified as in EN 10300 Table 7	Min 0.76	1.0
Tensile Strength - Longitudinal Tensile Strength - Transverse	N/50 mm N/50 mm	EN 12311-1 modified as in EN 10300 Annex N	Min 800 Min 800	1126 1136
Remarks:				



corrosion protection that stays.

# Safety Data Sheet

## PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

Revision date: 1/24/2020  
Version: 2.0.0

### SECTION 1: Identification of the substance/preparation and of the company/undertaking

#### 1.1. Product identifier

**Trade name:** PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

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

**Recommended uses:** PHOENIX BITUMEN/BITUGUARD/BITUSEAL Outerwrap is used in an anti-corrosive system for oil-, gas- and water pipelines in combination with PHOENIX SYNTHETIC/BITUGUARD/BITUSEAL primer and PHOENIX BITUMEN/BITUGUARD/BITUSEAL ENAMEL, according to the prevailing international specifications prescribed for the product in question

#### 1.3. Details of the supplier of the safety data sheet

**Company:** Phoenix International A/S  
**Address:** Industrivej Vest 11  
**Zip code:** 6600  
**City:** Vejen  
**Country:** DENMARK  
**E-mail:** info@phoenixint.dk  
**Phone:** +45 76 96 34 00

#### 1.4. Emergency Telephone Number

The emergency telephone is open between 8 a.m. and 4 p.m. on workdays. +45 7696 3400

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

**CLP-classification:** The product shall not be classified as hazardous according to the classification and labeling rules for substance and mixtures.

**Most serious harmful effects:** May cause slight irritation to the skin and eyes.

#### 2.2. Label elements

The product shall not be classified as hazardous according to the classification and labeling rules for substance and mixtures.

#### Supplemental information

None.

#### 2.3. Other hazards

Assessment to determine PBT and vPvB has not been made.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

## Safety Data Sheet

### PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

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Substance	CAS No	EC No	REACH Reg. No.	Concentration	Notes	CLP-classification
Bitumen	-	-		%		
Talc				%		
Glass fibre/polyester cloth.				%		

Please see section 16 for the full text of H-phrases..

**Ingredient comments:** Product type:  
Bitumen impregnated glass fibre/polyester cloth.  
The end product is powdered with talc.

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

**Inhalation:** Seek fresh air.

**Ingestion:** Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of discomfort.

**Skin contact:** Remove contaminated clothing. Wash the skin thoroughly with water and continue washing for a long time. 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.

**General:** When obtaining medical advice, show the safety data sheet or label.

##### 4.2. Most important symptoms and effects, both acute and delayed

May cause slight irritation to the skin and eyes.

##### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms. No special immediate treatment required.

#### SECTION 5: Fire-fighting measures

##### 5.1. Extinguishing media

**Suitable extinguishing media:** Extinguish with powder, foam, carbon dioxide or water mist. Use water or water mist to cool non-ignited stock.

**Unsuitable extinguishing media:** Do not use water stream, as it may spread the fire.

##### 5.2. Special hazards arising from the substance or mixture

The product is not directly flammable. Avoid inhalation of vapour and fumes – seek fresh air.

##### 5.3. Advice for fire-fighters

If there is a risk of exposure to vapour and flue gases, a self-contained breathing apparatus must be worn. Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases – seek fresh air.

# Safety Data Sheet

## PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel:** Wear gloves.

**For emergency responders:** Normal protective clothing equivalent to EN 469 is recommended.

#### 6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water.

#### 6.3. Methods and material for containment and cleaning up

Sweep up/collect spills for possible reuse or transfer to suitable waste containers.

#### 6.4. Reference to other sections

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

Use the product under well-ventilated conditions. Running water and eye wash equipment should be available. Wash hands before breaks, before using restroom facilities, and at the end of work.

#### 7.2. Conditions for safe storage, including any incompatibilities

The product should be stored safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc.

#### 7.3. Specific end use(s)

None.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limit

Substance name	Time period	ppm	mg/m3	fiber/cm3	Remarks	Notation
Bitumen fumes	15m		10			
Bitumen fumes	8h		5			

##### Measuring methods:

Compliance with the stated occupational exposure limits may be checked by occupational hygiene measurements.

##### Legal basis:

ACGIH Threshold Limit Values (TLV's) and Biological Exposure Indices (BEI's), 2015. OSHA 29 CFR part 1910.1000, table Z1-Z3, Limits for Air Contaminants 2006. Commission Directive 2000/39/EC (Occupational Exposure Limits) as subsequently amended. Last amended by Commission Directive 2019/1831/EU. Directive 2004/37/EC (Exposure to carcinogens or mutagens at work) as subsequently amended. Last amended by Directive 2019/983/EU.

#### 8.2. Exposure controls

## Safety Data Sheet

### PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

Revision date: 1/24/2020  
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- Appropriate engineering controls:** Wear the personal protective equipment specified below. Good personal hygiene practices should always be followed.
- Personal protective equipment, eye/face protection:** Wear safety goggles if there is a risk of eye splash. Eye protection must conform to EN 166.
- Personal protective equipment, hand protection:** Plastic or rubber gloves recommended.
- Personal protective equipment, respiratory protection:** Not required.
- Environmental exposure controls:** Ensure compliance with local regulations for emissions.

#### SECTION 9: Physical and chemical properties

##### 9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Solid
Colour	Black
Odour	None/ Weak
Solubility	Insoluble
Explosive properties	Non-explosive
Oxidising properties	No data

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	> 280 °C	ASTM D92
Evaporation rate	No data	
Flammability (solid, gas)	No data	
Flammability limits	No data	
Explosion limits	No data	
Vapour pressure	No data	
Vapour density	No data	
Relative density	1.0 g/cm <sup>3</sup>	
Partition coefficient n-octanol/water	No data	
Auto-ignition temperature	350 °C	
Decomposition temperature	No data	
Viscosity	No data	
Odour threshold	No data	

##### 9.2 Other information

#### SECTION 10: Stability and reactivity

##### 10.1. Reactivity

## Safety Data Sheet

### PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

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Not reactive.

#### 10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions.

#### 10.3. Possibility of hazardous reactions

No risk of hazardous reactions.

#### 10.4. Conditions to avoid

None known.

#### 10.5. Incompatible materials

None known.

#### 10.6. Hazardous decomposition products

None, if stored at the recommended storage conditions.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

<b>Acute toxicity - oral:</b>	Based on existing data, the classification criteria are deemed not to have been met. Based on testing of similar products and/or components.
<b>Acute toxicity - dermal:</b>	Based on existing data, the classification criteria are deemed not to have been met. . Based on testing of similar products and/or components.
<b>Acute toxicity - inhalation:</b>	The product does not have to be classified. Test data are not available.
<b>Skin corrosion/irritation:</b>	May cause slight irritation. Based on existing data, the classification criteria are deemed not to have been met. Based on testing of similar products and/or the components.
<b>Serious eye damage/eye irritation:</b>	May cause eye irritation. Based on existing data, the classification criteria are deemed not to have been met. Based on testing of similar products and/or the components.
<b>Respiratory sensitisation or skin sensitisation:</b>	Based on existing data, the classification criteria are deemed not to have been met. This product was not a skin sensitizer when tested in a Modified Buehler Guinea Pig Sensitization Assay.
<b>Germ cell mutagenicity:</b>	Based on existing data, the classification criteria are deemed not to have been met.
<b>Carcinogenic properties:</b>	The product does not have to be classified. Test data are not available. Chronic mouse skin painting studies of straight run bitumen showed no evidence of carcinogenic effects. However, some bituminous compounds may contain low levels of polycyclic aromatic hydrocarbons (PAHs). Dilution with solvents and prolonged repeated contact under conditions of poor personal hygiene, are a suspected cause of skin cancer in humans
<b>Reproductive toxicity:</b>	Based on existing data, the classification criteria are deemed not to have been met.
<b>Single STOT exposure:</b>	The product does not have to be classified. Test data are not available.
<b>Repeated STOT exposure:</b>	Based on existing data, the classification criteria are deemed not to have been met.

## Safety Data Sheet

### PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

Revision date: 1/24/2020

Version: 2.0.0

**Aspiration hazard:** Inhalation studies of high concentrations of bitumen fumes in rodents produced bronchitis, pneumonitis and lung changes (fibrosis and cell damage). The product does not have to be classified. Test data are not available.

**Other toxicological effects:** None known.

#### SECTION 12: Ecological information

##### 12.1. Toxicity

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

##### 12.2. Persistence and degradability

Test data are not available. Not biodegradable.

##### 12.3. Bioaccumulative potential

Test data are not available.

##### 12.4. Mobility in soil

Test data are not available. Sinks in water. Adsorbs to soil and is not mobile.

##### 12.5. Results of PBT and vPvB assessment

No assessment has been made.

##### 12.6. Other adverse effects

None known.

#### SECTION 13: Disposal considerations

##### 13.1. Waste treatment methods

Avoid discharge to drain or surface water.

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste (Dir. 2008/98/EU). 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.

Uncleansed packaging is to be disposed of via the local waste-removal scheme.

**Category of waste:** EWC code: Depends on line of business and use, for instance 16 05 09 discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08  
Absorbent/cloth contaminated with the product: EWC code: 15 02 03 Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02.

#### SECTION 14: Transport information

**14.1. UN-No.:** Not applicable.

**14.4. Packing group:** Not applicable.

**14.2. UN proper shipping name:** Not applicable.

**14.5. Environmental hazards:** Not applicable.

**14.3. Transport hazard class(es):** Not applicable.

##### 14.6. Special precautions for user

## Safety Data Sheet

### PHOENIX BITUMEN OUTERWRAP, PHOENIX BITUGUARD OUTERWRAP, PHOENIX BITUSEAL OUTERWRAP

Replaces date: 1/28/2016

Revision date: 1/24/2020  
Version: 2.0.0

None.

#### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

### SECTION 15: Regulatory information

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

**Special Provisions:** None.

#### 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
2.0.0	1/24/2020	Bureau Veritas HSE / MPE	1 - 16

**Abbreviations:**  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: Very Persistent and Very Bioaccumulative  
STOT: Specific Target Organ Toxicity

**Other Information:** This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with 1907/2006/EC (REACH) as subsequently changed.

**Training advice:** A thorough knowledge of this safety data sheet should be a prerequisite condition.

**Classification method:** Calculation based on the hazards of the known components.

**Company:** Bureau Veritas HSE Denmark A/S  
**Address:** Oldenborggade 25-31  
**Zip code:** 7000  
**City:** Fredericia  
**Country:** DENMARK  
**E-mail:** infohse@dk.bureauveritas.com  
**Phone:** +45 77 31 10 00  
**Homepage:** <https://www.bvhse.dk/>

**Document language:** EU



# PHOENIX Heavy Duty Outer Wrap

## Product Data Sheet

Rev. 13 - January 2016



### Product Description

PHOENIX INTERNATIONAL A/S manufactures a number of different types of high-quality outer wrap for reinforcing the mechanical properties of PHOENIX Bitumen Enamel for pipe coating.

PHOENIX Heavy Duty Outer Wrap is a bitumen-impregnated woven material produced by the regular weaving of continuous glass fibre threads lengthwise and double stapled glass fibres crosswise.

PHOENIX outer wraps are impregnated with bitumen to ensure optimum protection of the fibres and to facilitate "bleed-through" of the enamel.

The products are manufactured to an exact degree of porosity which promotes effective adhesion between outer wrap and enamel.

PHOENIX Heavy Duty Outerwrap is very flexible and mainly used on offshore pipelines to obviate sheer stress arising from the concrete weight coating.

### Delivery

PHOENIX Heavy Duty Outerwrap is supplied in customized widths and lengths. After production the product is placed on pallets and packed in shrink foil, thus allowing easy transport of the material.

### Application

PHOENIX Heavy Duty Outer Wrap is applied over the still hot and liquid bitumen enamel which is flood-coated at the weir. Application should take place in such a way that folds and air pockets are avoided and adhesion to the underlying enamel is ensured.

PHOENIX Heavy Duty Outer Wrap is also used as a repair material for small damaged areas.

### Storage

PHOENIX outer wraps are to be stored upright on a dry surface. The product should not be exposed to direct sunlight and max. storage height is 2.50 metres (2 pallets). Provided that the product is stored under these conditions it has a shelf life of 2 years.

### Standards

PHOENIX Heavy Duty Outer Wrap meets all international specifications for bitumen-based pipeline coatings.

### Quality Control

PHOENIX INTERNATIONAL A/S, which manufactures, tests and approves the outerwrap, is certified in accordance with the requirements of ISO 9001.

Quality control is conducted very carefully in the PHOENIX INTERNATIONAL A/S laboratories. Each batch of outer wrap is tested and certified. A quality certificate is provided with each delivery.

The logo consists of a red triangle pointing to the left, followed by the text 'corrosion protection that stays.' in a bold, black, sans-serif font.

### Bituminous Coatings

Bituminous products not only provide a highly protective coating, but are also environmentally safe and provide excellent in-service performance. Bituminous coatings from PHOENIX INTERNATIONAL A/S are suitable for pipelines operating up to 70 °C.

### Other PHOENIX Outer Wraps

PHOENIX outer wraps are designed to meet the customer's specific requirements and their performance can be adjusted on request.

Please contact PHOENIX INTERNATIONAL A/S for product data sheets on PHOENIX Outer Wrap GT-550-B & GT-650-B.

Standard Product Dimensions		
Dimension Inch x feet	Dimension m x m	Area/roll m <sup>2</sup>
9 x 1000	0.229 x 305	70
12 x 1000	0.305 x 305	93
18 x 1000	0.460 x 305	140

In addition to the above standard product sizes other dimensions are available upon request.

Technical Data			
Test	Unit	Method	Requirement
Glass Tissue Base Weight	g/m <sup>2</sup>	EN 10300 Annex M	min. 170
Finished Product Weight	g/m <sup>2</sup>	EN 10300 Annex M	min. 250
Thickness	mm	EN 1849-1	min. 0.76
Water Resistance		ISO 719	Hydrolytic Class 3 or better
Tensile Strength - Longitudinal - Transverse	N/50 mm	EN 10300 Annex N	min. 800 min. 800
Product Code	100-325, 100-330		

# TECHNICAL DATA SHEET

## QUAKERCOAT® 141

### WATER BASED AIR DRYING, PERMANENT PROTECTIVE PRIMER

QUAKERCOAT® 141 is a water based, air drying, permanent protective coating.

QUAKERCOAT® 141 has a low VOC compliant with the European directive 2004/42/CE limiting volatile solvent contents in paints and varnishes.

#### Applications

QUAKERCOAT® 141 is intended for use as a corrosion inhibiting coating on metal tube and pipe surfaces.

#### Typical Physical Properties

PROPERTY	TYPICAL VALUE	UNIT
Appearance	Milky white liquid	[-]
Density	1027	[kg/m <sup>3</sup> , 20 °C]
Flash point	N.A., boils at 100°C	[°C], closed cup
Viscosity	65-130	seconds, FordCup 4, 25 °C
VOC (calculated)	68	[g/l]
Solids %	37.0	[% weight]
pH	9.0	[-]

These characteristics are typical of current production and can't be used as a specification.

#### Benefits

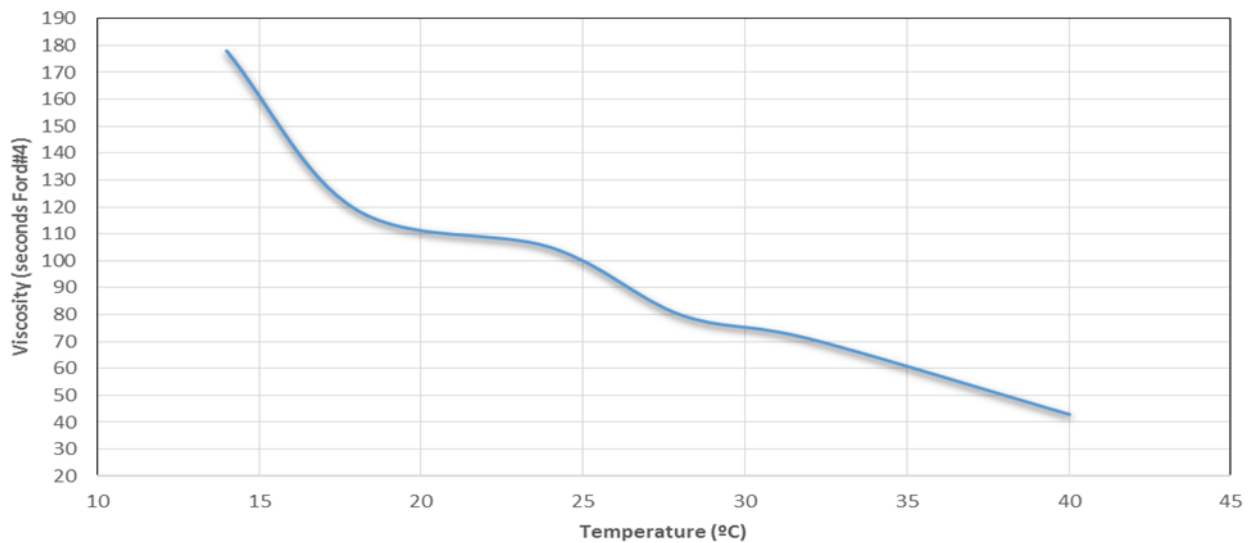
- Low VOC
- Excellent corrosion protection
- Clear medium gloss film
- Very fast dry

#### Typical Dry Film Properties

PROPERTY	TYPICAL VALUE	UNIT
Coverage at 35 µm	9.9	[m <sup>2</sup> /l]
Dry Time (minutes)	10-15 mn, RT	[minutes]
Corrosion resistance-Salt spray	150 h	hours, DIN 50 021 SS on Q-panels, below 5% rust.
Gloss	Medium high	[-]
Color	Colourless	[-]
Recommended dry film thickness	30-40	µm



## Viscosity for QUAKERCOAT® 141



## Recommendation For Use

The following directions and recommendations are intended to serve as a guide and may require modifications to meet local needs.

- » **THINNING:** use as received. No thinning is necessary. If conditions warrant thinning of QUAKERCOAT® 141, use soft water.
  - » **MATERIALS:** QUAKERCOAT® 141 is designed for coating of steel.
  - » **SURFACE PREPARATION:** the intended substrate must be clean and dry to accept the protective coating properly. Loose debris, dust, or other contamination may degrade product effectiveness and performance.
  - » **APPLICATION:** For spray applications. Clean equipment with water. Use with adequate ventilation. Consult Material Safety Data Sheet for handling and safety information. **DO NOT APPLY AT TEMPERATURES BELOW 6°C.** Do not apply when rain can be expected within 4 hours (if parts will be exposed to environment).
  - » **DRYING:** Air dry time will vary depending on the temperature, humidity and wet film thickness. Dry time may be substantially reduced by increasing airflow and temperature across sprayed items.
- By induction heating, recommended temperature is 40°C, maximum is 50°C.

## Health, Safety And Handling

Please consult the Safety Data Sheet (SDS) for information on storage, safe handling and disposal. The conditions or methods of handling, storage, use and disposal of the product are beyond our reasonable control - we assume no liability for any ineffectiveness of the product or any injury or damage, arising out of or in connection with these conditions.

All reasonable care has been taken to ensure this publication is accurate upon issue. Such information may be affected by changes subsequent to issue. This Technical Data Sheet is to be used solely for this product. Prior to any use, consult the Safety Data Sheet (SDS) for information on hazard risks and product use parameters. All liability and all warranties express or implied are hereby excluded as to product performance results, the accuracy of these data including any warranty of merchantability or fitness for any purpose. 042900UNPK05





# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006  
as amended by Regulation (EU) No 2015/830

Print date: 03/26/2020

Revision Date: 03/14/2018

Revision Number: 1.01

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

### 1.1. Product identifier

Product trade name: **QUAKERCOAT 141**

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

**Intended uses:**

Coating fluid

**Uses advised against:**

All other applications except: Coating fluid

### 1.3. Details of the supplier of the safety data sheet

**Supplier:**

**Quaker Chemical B.V.**

Industrieweg 7, 1422 AH Uithoorn

The Netherlands

T:+31 (0) 297 544644

F:+31 (0) 297 544694

EHS-EMEA@quakerchem.com

**Responsible person:**

Department for Environment, Health and Safety (EHS)

EHS-EMEA@quakerchem.com

**National contact:**

Department for Environment, Health and Safety (EHS)

EHS-EMEA@quakerchem.com

### 1.4. Emergency telephone number

24 hours emergency response telephone number (CHEMTREC)

**United Kingdom: +(44) 870 820 04 18**

**Ireland: +(353) 190 146 70**

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### 2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

**Classification procedure:** Calculation method

### 2.2. Label elements

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

Signal Word

None

Hazard Statements

EUH210 - Safety data sheet available on request

Precautionary statements

None

### 2.3. Other hazards

None under normal use

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable. Product is a mixture.

### 3.2 Mixture

#### Description of the mixture:

Product is a mixture of: water, polymer, additives.

#### Hazardous ingredients:

Chemical Name	EC No	Index No	REACH Registration No	Weight-%	Classification according to Regulation (EC) No 1272/2008 (CLP)	
Ethylene glycol monobutyl ether 111-76-2	203-905-0	603-014-00-0	01-2119475108-36	5 - 10	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	[x]
Propan-2-ol 67-63-0	200-661-7	603-117-00-0	01-2119457558-25	1 - 5	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H336)	[x]

[x] Substances for which there are Community workplace exposure limits

Full text of H- and EUH-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General notes:</b>	No hazards which require special first aid measures.
<b>Following inhalation:</b>	Not hazardous by inhalation.
<b>Following skin contact:</b>	Not hazardous by skin contact.
<b>Following eye contact:</b>	Not hazardous by contact with eyes.
<b>Following ingestion:</b>	Rinse mouth
<b>Self-protection of the first aider:</b>	First aider needs to protect himself.

### 4.2. Most important symptoms and effects, both acute and delayed

#### Following inhalation:

<b>Acute:</b>	There are no symptoms or effects reported.
<b>Delayed:</b>	There are no symptoms or effects reported.

#### Following skin contact:

<b>Acute:</b>	There are no symptoms or effects reported.
<b>Delayed:</b>	There are no symptoms or effects reported.

#### Following eye contact:

<b>Acute:</b>	There are no symptoms or effects reported.
<b>Delayed:</b>	There are no symptoms or effects reported.

#### Following ingestion:

<b>Acute:</b>	There are no symptoms or effects reported.
<b>Delayed:</b>	There are no symptoms or effects reported.

### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Following inhalation:</b>	No data available
<b>Following skin contact:</b>	No data available
<b>Following eye contact:</b>	No data available
<b>Following ingestion:</b>	No data available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media:** Dry chemical  
Foam  
Water  
Carbon dioxide (CO<sub>2</sub>)

**Unsuitable extinguishing media:** High volume water jet

## 5.2. Special hazards arising from the substance or mixture

**Hazardous combustion products:** Carbon monoxide (CO)  
Nitrogen oxides (NO<sub>x</sub>)

## 5.3. Advice for firefighters

Standard procedure for chemical fires

# SECTION 6: Accidental release measures

## 6.1. Personal precautions, protective equipment and emergency procedures

### 6.1.1 For non-emergency personnel

**Protective equipment:** Use suitable protective equipment (see also section 8) to prevent any contamination of skin, eyes and personal clothing.

**Emergency procedures:** Consult an expert.

### 6.1.2 For emergency responders

**Protective equipment:** Use suitable protective equipment (see also section 8) to prevent any contamination of skin, eyes and personal clothing.

**Emergency procedures:** Consult an expert.

## 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system

## 6.3. Methods and material for containment and cleaning up

**6.3.1 For containment:** Covering of the drains.

**6.3.2 For cleaning up:** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust)

**6.3.3 Other information:** Clear spills immediately

## 6.4. Reference to other sections

See also sections 8 and 13.

# SECTION 7: Handling and storage

## 7.1. Precautions for safe handling

**Protective measures:**

**Measures to prevent fire:** Always keep ignition sources and product separated. Use a fire suppression system which is suitable for the facility and the potential hazards.



**Measures to prevent aerosol and dust generation:** Provide sufficient air exchange and/or exhaust in work rooms.

**Measures to protect the environment:** Do not flush into surface water or sanitary sewer system

**Advice on general occupational hygiene:** Wash hands thoroughly after handling

### 7.2. Conditions for safe storage, including any incompatibilities

**Technical measures and storage conditions:** Storage at 4 - 35 °C

**Packaging materials:** Store in original package or in dedicated storage tank.

**Requirements for storage rooms and vessels:** Store in accordance with local and national regulations.

**Storage class:** 10 (D: TRGS 510)

**Further information on storage conditions:** No data available

### 7.3. Specific end use(s)

**Recommendations:** See our technical data sheet.

**Industrial sector specific solutions:** See our technical data sheet.

**Exposure scenario(s):** Exposure scenario is not yet available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Ethylene glycol monobutyl ether	
EU - Occupational Exposure (2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - TWAs	98 mg/m <sup>3</sup>
EU - Occupational Exposure (2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - STELs	246 mg/m <sup>3</sup>
Austria - Occupational Exposure Limits - TWAs - (MAK-TMWs)	98 mg/m <sup>3</sup>
Austria - Occupational Exposure Limits - STELs - (MAK-KZWs)	200 mg/m <sup>3</sup> 4 X 30 min
Belgium - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Belgium - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Bulgaria - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Bulgaria - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Czech Republic - Occupational Exposure Limits - TWAs	100 mg/m <sup>3</sup>
Denmark - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Finland - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Finland - Occupational Exposure Limits - STELs	250 mg/m <sup>3</sup>
France - Occupational Exposure Limits - TWAs (VME)	49 mg/m <sup>3</sup>
France - Occupational Exposure Limits - STELs (VLCT)	246 mg/m <sup>3</sup>
Germany - TRGS 900 - Occupational Exposure Limits - TWAs (AGWs)	49 mg/m <sup>3</sup>
Hungary - Occupational Exposure Limits - TWAs (AKs)	98 mg/m <sup>3</sup>
Hungary - Occupational Exposure Limits - STELs (CKs)	246 mg/m <sup>3</sup>
Italy - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Italy - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>

Latvia - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Latvia - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Lithuania - Occupational Exposure Limits - TWAs (IPRDs)	50 mg/m <sup>3</sup>
Lithuania - Occupational Exposure Limits - STELs (TPRDs)	100 mg/m <sup>3</sup>
Luxembourg - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Luxembourg - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Netherlands - Occupational Exposure Limits - TWAs	100 mg/m <sup>3</sup>
Netherlands - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Norway - Occupational Exposure Limits - TWAs	50 mg/m <sup>3</sup>
Norway - Occupational Exposure Limits - STELs	75 mg/m <sup>3</sup>
Poland - Occupational Exposure Limits - TWAs (NDSs)	98 mg/m <sup>3</sup>
Poland - Occupational Exposure Limits - STELs (NDSCs)	200 mg/m <sup>3</sup>
Portugal - Occupational Exposure Limits - TWAs (VLE-MPs)	20 ppm 98 mg/m <sup>3</sup>
Portugal - Occupational Exposure Limits - STELs (VLE-CDs)	50 ppm 246 mg/m <sup>3</sup>
Romania - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Romania - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Slovak Republic - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Slovenia - Occupational Exposure Limits - TWAs	98 mg/m <sup>3</sup>
Slovenia - Occupational Exposure Limits - STELs	246 mg/m <sup>3</sup>
Spain - Occupational Exposure Limits - TWAs (VLA-EDs)	98 mg/m <sup>3</sup>
Spain - Occupational Exposure Limits - STELs (VLA-ECs)	245 mg/m <sup>3</sup>
Sweden - Occupational Exposure Limits - TLVs (LLVs)	50 mg/m <sup>3</sup>
Sweden - Occupational Exposure Limits - STELs (STVs)	246 mg/m <sup>3</sup>
United Kingdom - Workplace Exposure Limits (WELs) - TWAs	123 mg/m <sup>3</sup>
United Kingdom - Workplace Exposure Limits (WELs) - STELs	246 mg/m <sup>3</sup>

<b>Propan-2-ol</b>	
EU - Occupational Exposure (2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - TWAs	Not listed
EU - Occupational Exposure (2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - STELs	Not listed
Austria - Occupational Exposure Limits - TWAs - (MAK-TMWs)	500 mg/m <sup>3</sup>
Austria - Occupational Exposure Limits - STELs - (MAK-KZWs)	2000 mg/m <sup>3</sup> 4 X 15 min 2000 mg/m <sup>3</sup> 4 X 30 min
Belgium - Occupational Exposure Limits - TWAs	500 mg/m <sup>3</sup>
Belgium - Occupational Exposure Limits - STELs	1000 mg/m <sup>3</sup>
Bulgaria - Occupational Exposure Limits - TWAs	980.0 mg/m <sup>3</sup>
Bulgaria - Occupational Exposure Limits - STELs	1225.0 mg/m <sup>3</sup>
Czech Republic - Occupational Exposure Limits - TWAs	500 mg/m <sup>3</sup>
Denmark - Occupational Exposure Limits - TWAs	490 mg/m <sup>3</sup>
Finland - Occupational Exposure Limits - TWAs	500 mg/m <sup>3</sup>
Finland - Occupational Exposure Limits - STELs	620 mg/m <sup>3</sup>
France - Occupational Exposure Limits - STELs (VLCT)	980 mg/m <sup>3</sup>
Germany - TRGS 900 - Occupational Exposure Limits - TWAs (AGWs)	500 mg/m <sup>3</sup>
Hungary - Occupational Exposure Limits - TWAs (AKs)	500 mg/m <sup>3</sup>
Hungary - Occupational Exposure Limits - STELs (CKs)	2000 mg/m <sup>3</sup>
Latvia - Occupational Exposure Limits - TWAs	350 mg/m <sup>3</sup>
Latvia - Occupational Exposure Limits - STELs	600 mg/m <sup>3</sup>
Lithuania - Occupational Exposure Limits - TWAs (IPRDs)	350 mg/m <sup>3</sup>
Lithuania - Occupational Exposure Limits - STELs (TPRDs)	600 mg/m <sup>3</sup>
Norway - Occupational Exposure Limits - TWAs	245 mg/m <sup>3</sup>
Norway - Occupational Exposure Limits - STELs	306.25 mg/m <sup>3</sup>
Poland - Occupational Exposure Limits - TWAs (NDSs)	900 mg/m <sup>3</sup>
Poland - Occupational Exposure Limits - STELs (NDSCs)	1200 mg/m <sup>3</sup>
Portugal - Occupational Exposure Limits - TWAs (VLE-MPs)	200 ppm
Portugal - Occupational Exposure Limits - STELs (VLE-CDs)	400 ppm
Romania - Occupational Exposure Limits - TWAs	200 mg/m <sup>3</sup>
Romania - Occupational Exposure Limits - STELs	500 mg/m <sup>3</sup>

Slovak Republic - Occupational Exposure Limits - TWAs	500 mg/m <sup>3</sup>
Slovenia - Occupational Exposure Limits - TWAs	500 mg/m <sup>3</sup>
Slovenia - Occupational Exposure Limits - STELs	2000 mg/m <sup>3</sup>
Spain - Occupational Exposure Limits - TWAs (VLA-EDs)	500 mg/m <sup>3</sup>
Spain - Occupational Exposure Limits - STELs (VLA-ECs)	1000 mg/m <sup>3</sup>
Sweden - Occupational Exposure Limits - TLVs (LLVs)	350 mg/m <sup>3</sup>
Sweden - Occupational Exposure Limits - STELs (STVs)	600 mg/m <sup>3</sup>
United Kingdom - Workplace Exposure Limits (WELs) - TWAs	999 mg/m <sup>3</sup>
United Kingdom - Workplace Exposure Limits (WELs) - STELs	1250 mg/m <sup>3</sup>

## 8.2. Exposure controls

### 8.2.1 Appropriate engineering controls:

#### Technical measures to prevent exposure:

Ensure adequate ventilation, especially in confined areas

### 8.2.2 Personal protection equipment:

#### 8.2.2.1 Eye and face protection:

The use of safety glasses is recommended.

#### 8.2.2.2 Skin protection:

##### Hand protection:

The use of chemical resistant gloves is recommended.

##### Other skin protection:

The use of long sleeved protective clothing is recommended.

#### 8.2.2.3 Respiratory protection:

Adequate ventilation is recommended.

#### 8.2.2.4 Thermal hazards:

Product represents no thermal hazards.

### 8.2.3 Environmental exposure controls:

#### Technical measures to prevent exposure:

Do not flush into surface water or sanitary sewer system

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### a) Appearance

**Colour:**

White

**Physical state:**

Liquid

#### b) Odour

Characteristic

#### c) Odour threshold

Mild odour

#### d) pH

9

e) Melting point / freezing point (°C)	No data available
f) Initial boiling point and boiling range (°C)	100
g) Flash point (°C)	97
h) Evaporation rate (BuAc = 1)	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure (kPa)	No data available
l) Vapour density (air=1)	No data available
m) Relative density (g/cm <sup>3</sup> ) at (°C)	1.016 20
n) Solubility(ies) in water	Soluble
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature (°C)	No data available
q) Decomposition temperature (°C)	No data available
r) Viscosity (mm <sup>2</sup> /s) at (°C)	55 25
s) Explosive properties	Product is not explosive.
t) Oxidising properties	Product is not an oxidiser.
<b>9.2. Other information</b>	
a) Pourpoint (°C)	No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under recommended storage conditions

### 10.2. Chemical stability

Stable under recommended storage conditions

### 10.3. Possibility of hazardous reactions

Stable under recommended storage conditions

### 10.4. Conditions to avoid

None known

### 10.5. Incompatible materials

Strong oxidizing agents

## 10.6. Hazardous decomposition products

None under normal use

# SECTION 11: Toxicological information

## 11.1. Information on toxicological effects

### Acute toxicity

#### Product data:

ATEmix - Oral (mg/kg): >2000

ATEmix - Dermal (mg/kg): >2000

ATEmix - Inhalation (mg/l/4 h - vapours): >20

#### Component data:

Chemical Name	LD50 - Oral, Rat (mg/kg)	LD50 - Dermal, Rabbit (mg/kg)	LC50 - Inhalation, Rat, 4h (mg/l)
Ethylene glycol monobutyl ether 111-76-2	1414	1100	No data available
Propan-2-ol 67-63-0	5840	>2000	>25

### Skin corrosion/irritation

#### Product data:

Results: No data available

### Serious eye damage/irritation

#### Product data:

Results: No data available

### Respiratory or skin sensitisation

#### Product data:

Results: No data available

### Germ cell mutagenicity

#### Product data:

Results: No data available

### Carcinogenicity

#### Product data:

Results: No data available

## Reproductive toxicity

### Product data:

Results: No data available

## Summary of evaluation of the CMR properties

### Product data:

Results: No data available

## STOT - single exposure

### Product data:

Results: No data available

## STOT - repeated exposure

### Product data:

Results: No data available

## Aspiration hazard

### Product data:

Results: No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Acute (short-term) toxicity

##### Product data:

LC50 (Fish - 96h): >100 mg/l

EC50 (Water Flea - 48h): >100 mg/l

IC50 (Algae - 72h): >100 mg/l

##### Component data:

Chemical Name	LC50 (Fish - 96h)	EC50 (Water Flea - 48h)	IC50 (Algae - 72h)
Ethylene glycol monobutyl ether 111-76-2	1490 mg/L (Lepomis macrochirus) 1474 mg/L (Oncorhynchus mykiss)	1550 mg/l (Daphnia magna)	911 mg/l
Propan-2-ol 67-63-0	11130 mg/L (Pimephales promelas) 9640 mg/L (Pimephales promelas) 1400000 µg/L (Lepomis macrochirus)	13299 mg/L (Daphnia magna)	1000 mg/L (Desmodesmus subspicatus) >100mg/L (Scenedesmus quadricauda)

#### Chronic (long-term) toxicity

**Product data:**

LC50 (Fish - 96h): >100 mg/l  
EC50 (Water Flea - 48h): >100 mg/l  
IC50 (Algae - 72h): >100 mg/l

Biodegradation: No data available  
Partition coefficient n-octanol /water (log Kow): No data available  
Bioconcentration factor (BCF) No data available

**Component data:**

Chemical Name	LC50 (Fish - 96h)	EC50 (Water Flea - 48h)	IC50 (Algae - 72h)
Ethylene glycol monobutyl ether 111-76-2	1490 mg/L (Lepomis macrochirus) 1474 mg/L (Oncorhynchus mykiss)	1550 mg/l (Daphnia magna)	911 mg/l
Propan-2-ol 67-63-0	11130 mg/L (Pimephales promelas) 9640 mg/L (Pimephales promelas) 1400000 µg/L (Lepomis macrochirus)	13299 mg/L (Daphnia magna)	1000 mg/L (Desmodesmus subspicatus) >100mg/L (Scenedesmus quadricauda)

Chemical Name	Biodegradation	Partition coefficient n-octanol /water (log Kow)	Bioconcentration factor (BCF)
Ethylene glycol monobutyl ether 111-76-2	No data available	No data available	No data available
Propan-2-ol 67-63-0	No data available	0.05	No data available

**12.2 Persistence and degradability**

**Product data:**

Abiotic Degradation: No data available  
Physical- and photo-chemical elimination: No data available  
Biodegradation: No data available

**Component data:**

Chemical Name	Abiotic Degradation	Physical- and photo-chemical elimination	Biodegradation
Ethylene glycol monobutyl ether 111-76-2	No data available	No data available	No data available
Propan-2-ol 67-63-0	No data available	No data available	No data available

**12.3 Bioaccumulative potential**

**Product data:**

Partition coefficient n-octanol /water (log Kow): No data available  
Bioconcentration factor (BCF) No data available

**Component data:**

Chemical Name	Partition coefficient n-octanol /water (log Kow)	Bioconcentration factor (BCF)
Ethylene glycol monobutyl ether	No data available	No data available

111-76-2		
Propan-2-ol 67-63-0	0.05	No data available

## 12.4 Mobility in soil

### Product data:

**Known or predicted distribution to environmental compartments:** No data available

**Surface tension:** No data available

### Component data:

Chemical Name	Known or predicted distribution to environmental compartments	Surface tension
Ethylene glycol monobutyl ether 111-76-2	No data available	No data available
Propan-2-ol 67-63-0	No data available	No data available

## 12.5 Results of PBT and vPvB assessment

No data available

## 12.6 Other adverse effects

No data available

## 12.7 Additional information

No data available

# SECTION 13: Disposal considerations

## 13.1. Waste treatment methods

**Product / Packaging disposal:**

### Packaging data:

**Recycling:** Use a European return program for empty packaging. For example: [ncg-europe.com](http://ncg-europe.com).

### Product data:

**Waste codes / waste designations according to LoW:**

**As delivered:** 16 03 - off-specification batches and unused products  
16 03 06 - organic wastes other than those mentioned in 16 03 05

# SECTION 14: Transport information

## 14.1. UN number

Not regulated

## 14.2. UN proper shipping name



Not regulated

#### 14.3. Transport hazard class(es)

Not regulated

#### 14.4. Packing group

Not regulated

#### 14.5. Environmental hazards

Not regulated

#### 14.6. Special precautions for user

Not regulated

#### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not regulated

## SECTION 15: Regulatory information

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

#### EU regulations

Authorisations and/or restrictions on use

#### Authorisations:

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), 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

#### ANNEX XIV - LIST OF SUBSTANCES SUBJECT TO AUTHORISATION

Product does not contain substances as mentioned in this ANNEX.

#### Restrictions on use:

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), 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

#### ANNEX XIII - CRITERIA FOR THE IDENTIFICATION OF PERSISTENT, BIOACCUMULATIVE AND TOXIC SUBSTANCES, AND VERY PERSISTENT AND VERY BIOACCUMULATIVE SUBSTANCES

Product does not contain substances as mentioned in this ANNEX.

#### ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN

## DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

Product does not contain substances as mentioned in this ANNEX.

### Other EU regulations

**REGULATION (EC) No 648/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 March 2004 on detergents**  
Product is not subject to this regulation.

**REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals**  
Product does not contain components as mentioned in this regulation.

**COUNCIL REGULATION (EC) No 111/2005 of 22 December 2004 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**  
Product does not contain components as mentioned in this regulation.

**REGULATION (EC) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer**  
Product does not contain components as mentioned in this regulation.

**REGULATION (EU) No 98/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 January 2013 on the marketing and use of explosives precursors**  
Product does not contain components as mentioned in this regulation.

**Commission Decision of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (notified under document number C(2000) 1147) (Text with EEA relevance) (2000/532/EC)**

#### **Waste codes / waste designations according to LoW:**

**As delivered:** 16 03 - off-specification batches and unused products  
16 03 06 - organic wastes other than those mentioned in 16 03 05

**COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items**  
Product does not contain components as mentioned in this regulation.

### National regulations

#### **In Spain**

##### **Product data:**

#### **In France**

##### **Product data:**

Tableaux de maladies professionnelles: 84

#### **In Germany**

**Product data:**

**Water hazard classes (Wassergefährdungsklassen):** 1 (S)

**In Italy**

**Product data:**

**Altre disposizioni di normativa vigente:** limite di soglia (LTV) ed indicatori biologici di esposizione (IBE) ACGIH 2001 Protezione dei lavoratori contro i rischi derivanti dall'esposizione ad agenti chimici, fisici e biologici durante il lavoro (DL212 del 30/07/90)

Norme generali per l'igiene sul lavoro (DPR 303 del 19/3/56)

Regolamenti e tabelle sulle malattie professionali nell'industria (DPR 336 del 13/04/94)

D.Lgs. 81/2008 del 9 Aprile 2008 e successive modifiche

Rischi incidenti rilevanti (Seveso bis - DL 334/99)

Norme sugli scarichi (DM 51 del 12/7/90)

Norme sull'inquinamento o atmosferico (DPR del 12/7/90 e del 25/7/91)

Norme per la tutela della acque (DL 152 del 11/5/99)

Norme sullo smaltimento e sul trasporto dei rifiuti pericolosi (DL 22/97 e 389/97)

Norme sul trasporto via terra ADR/RID (recepimento dir. CE 94/55): DM del 04/09/96 e attuazioni

Testo unico su classificazione, imballaggio ed etichettatura sostanze pericolose con recepimento fino alla Direttiva 2004/73/CE (29° adeguamento al progresso tecnico della direttiva 67/548/CE)

Norme per la compilazione della Scheda di Sicurezza con recepimento della direttiva 2001/58/EC

**In Poland**

**Product data:**

The 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), establishing a European Chemicals Agency, amending Directive 1999/45/EC of the trades and repealing the trades the Regulation repealing Council Regulation (EEC) nr 793/93. The regulation lation (EC) nr 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, as amended Regulation of the European Parliament and of the Council (EC) nr 1272/2008 on classification, labeling and packaging of substances and mixtures, amending and repealing the Directives 1999/45/EC, Directive 67/548/EEC and amending the Regulation (EC) nr 1907/2006, with changes. Ordinance of the Minister of Health of 30 December 2004 on safety and health relationship are tied to the existence of chemical agents (Dz.U.2005nr11poz.86), as amended. The Act of 25 February 2011 chemical substances and mixtures (Dz.U.2011nr63poz.322). Ordinance of the Minister of Health of 20 April 2012 on the labeling of chemical substances and mixtures, and certain mixtures (Dz.U.2012nr0poz.445). Ordinance of the Minister of Labour and Social Policy of 6 June 2014 on maximum permissible concentration assumptions Nate assumptions of harmful factors in the working environment. The Act of 27 April 2001 r.o waste (Dz.U.2001 No. 62 item 628). Ordinance of the Minister of Environment of 27 September 2001. on waste (Dz.U.Nr112, item 1206). Regulation (EU) No 453/2010 of 20 May 2010 amending the CYM The 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).

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**SECTION 16: Other information**

## Indication of changes

**Version:** 1.01  
**Revision date:** 03/14/2018  
**Reason for revision:** Not applicable  
**Print date:** 03/26/2020

## Abbreviations and acronyms

CLP - Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures  
REACH - Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals

## Key literature references and sources for data

### Compilation of safety data sheet:

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), 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

### Amended by:

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)

Classification procedure: Calculation method

## Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin  
H332 - Harmful if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H225 - Highly flammable liquid and vapor  
H336 - May cause drowsiness or dizziness

## Training advice

The information contained in this safety data sheet must be available to the professional user. The professional user of this product must be adequately informed about the possible hazards of this product. The professional user of this product must be adequately trained in the safe handling and use of chemical products.

## Further information

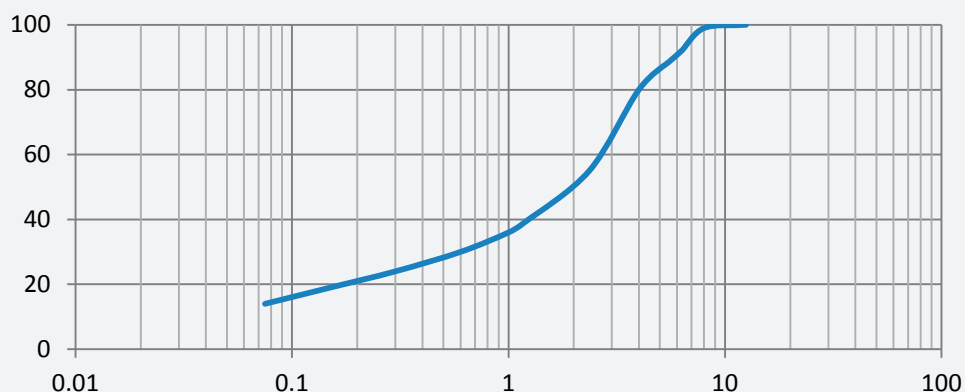
### Disclaimer

This product's safety information is provided to assist our customers in assessing compliance with safety/health/environmental regulations. The information contained herein is based on data available to us and is believed to be accurate. However, no warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of this data, the results to be obtained from the use thereof, or the hazards connected with the use of the product. Since the use of this product is within the exclusive control of the user, it is the user's obligation to determine the conditions for safe use of the product. Such conditions should comply with all regulations concerning the product. Quaker Chemical Corporation ("Quaker") assumes no liability for any injury or damage, direct or consequential, resulting from the use of this product unless such injury or damage is attributable to the gross negligence of Quaker.

*Product data sheet*

# MagnaDense 8s

MagnaDense is a high grade aggregate manufactured from the natural iron oxide Magnetite.

**Particle size distribution**


Screen analysis sieve mm	Passing (mean) % by weight
12.5	100
8.0	99
6.3	92
5.6	89
4.0	80
2.36	55
1.18	39
1.0	36
0.60	30
0.30	24
0.150	19
0.075	14

**Physical properties**

Particle density (t/m <sup>3</sup> )	4.8
Hardness (Moh's)	5.5
H <sub>2</sub> O absorption (%)	0.2
Moisture (%)	<3
Particle shape	Angular

Chemical analysis	% by weight
Fe <sub>3</sub> O <sub>4</sub>	89.7
SiO <sub>2</sub>	4
Al <sub>2</sub> O <sub>3</sub>	0.7
CaO	2.5
K <sub>2</sub> O	0.2
Na <sub>2</sub> O	0.3
P	0.5
S	0.03

**Packaging**

Bulk  
Big bags

The chemical and physical data are expected average figures and is given in good faith but without guarantee. All chemical analyses are in the dry state. Oxides are not indications of the phases present, but only conventional representations of elements. MagnaDense 8s Data Sheet, 08-02EN, 14-02

[WWW.LKABMINERALS.COM](http://WWW.LKABMINERALS.COM)

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Non-hazardous material safety data sheet for

# MagnaDense

This generic SDS is provided by LKAB Minerals to give information to assist with material handling of the products listed which are not classified as hazardous under the GHS and / or the CLP regulations.

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

### 1.1 Product identifier

Product name: MagnaDense  
 REACH registration number: Exempt  
 CAS number: 1309-38-2  
 EC number: 215-169-8

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

Identified uses: Industrial material

### 1.3 Details of the supplier of the safety data sheet

LKAB Minerals AB, Box 952, SE-971 28 LULEÅ, Sweden  
 sds@lkabminerals.com

### 1.4 Emergency telephone number of supplier

LKAB Minerals AB (Sweden) +46 771 760 400  
 LKAB Minerals Asia Pacific Ltd (Hong Kong) +852 2827 3000  
 LKAB Minerals BV (Netherlands) +31 168 388500  
 LKAB Minerals Inc (USA) +1 513 322 5530  
 LKAB Minerals GmbH (Germany) +49 201 45060  
 LKAB Minerals Ltd (United Kingdom) +44 1724 277411 or +44 1332 673131  
 LKAB Minerals Oy (Finland) +358 17 2660160  
 LKAB Minerals Tianjin (China) +86 22 2435 1706

Hours of operation: 09.00 – 16.00 (local business hours)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification (EC 1272/2008): Physical and chemical hazards: not classified  
 Human health: not classified  
 Environment: not classified

The full text for all R-phrases and hazard statements are displayed in section 16.

### 2.2 Label elements

EC number: 215-169-8  
 Label in accordance with (EC) No. 1272/2008: No pictogram required.

### 2.3 Other hazards

This product does not contain any PBT or vPvB substances.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Product / ingredient name	%	CAS No	EC No	Classification
				Regulation (EC) No. 1272/2008 [CLP]
Magnetite	>90	1309-38-2	215-169-8	Not classified

The full text for all R phrases and hazard statements are displayed in section 16.

REACH Registration number: Exempt

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Inhalation:	Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion:	Rinse mouth thoroughly. Get medical attention if any discomfort continues.
Skin contact:	Wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact:	Make sure to remove any contact lenses from the eyes before rinsing. Rinse eye with water immediately. Get medical attention if any discomfort continues.

### 4.2 Most important symptoms and effects, both acute and delayed

Inhalation:	No specific symptoms noted.
Ingestion:	No specific symptoms noted.
Skin contact:	No specific symptoms noted.
Eye contact:	No specific symptoms noted.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

## SECTION 5: Fire fighting measures

### 5.1 Extinguishing media

This product is not flammable. Use fire extinguishing media appropriate for surrounding materials.

### 5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: None under normal conditions

### 5.3 Advice for firefighters

Special fire fighting procedures: No specific fire fighting procedures given

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Follow precautions for safe handling described in this safety data sheet

### 6.2 Environmental precautions

The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.

### 6.3 Methods and material for containment and cleaning up

Avoid dust formation. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Transfer to a container for disposal.

### 6.4 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

Avoid handling which leads to dust formation. Avoid inhalation of high concentrations of dust. Observe occupational exposure limits and minimise the risk of inhalation of dust.

### 7.2 Conditions for safe storage, including any incompatibilities

No specific requirement.

## SECTION 7: Handling and storage

## 7.3 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

Country	Name	STD	TWA -8Hrs	STEL - 15Min	Notes
Austria	Iron Oxide		10.0 mg/m <sup>3</sup>	10.0 mg/m <sup>3</sup>	A, E
Belgium	Iron Oxide	GVB / VLEP / AGW	2ppm		
Denmark	Iron Oxide	GRV	3.5 mg/m <sup>3</sup>		beregnet som Fe
Estonia	Iron Oxide		3.5 mg/m <sup>3</sup>		
Finland	Iron Oxide	HTP	5.0 mg/m <sup>3</sup>		
France	Iron Oxide	VLEP	5.0 mg/m <sup>3</sup>		
Greece	Iron Oxide	OTE	10.0 mg/m <sup>3</sup>	10.0 mg/m <sup>3</sup>	
Hungary	Iron Oxide	MKBS	6.0 mg/m <sup>3</sup>		
Italy	Iron Oxide	ACGIH	50. mg/m <sup>3</sup>		A4 <sup>(1)</sup>
Japan	Iron Oxide		1.0 mg/m <sup>3</sup>		
Poland	Iron Oxide	NDS	5.0 mg/m <sup>3</sup>	10.0 mg/m <sup>3</sup>	w przeliczeniu na Fe
Portugal	Iron Oxide	VLE	5.0 mg/m <sup>3</sup>		A4 <sup>(2)</sup>
Russia	Iron Oxide	ПДК	6.0 mg/m <sup>3</sup>		Ф, 4
Spain	Iron Oxide	VLA	5.0 mg/m <sup>3</sup>		como Fe
Sweden	Iron Oxide	AFS	3.5 mg/m <sup>3</sup>		som Fe
UK	Iron Oxide	WEL	5.0 mg/m <sup>3</sup>	10.0 mg/m <sup>3</sup>	as Fe

A = Aveolengängiger Anteil

E = Einatembare Fraktion

GVB = Grenswaarden voor blootstelling aan chemische agentia

VLEP = Valeurs limites d'exposition professionnelle

AGW = Arbeitsplatzgrenzwert

GRV = Grænseværdier for stoffer og materialer

HTP = Haitallisiksi tunnetut pitoisuudet

OTE = Οριακή Τιμή Έκθεσης

MKBS = Munkahelyek kémiai biztonságáról szóló

ACGIH = American Conference of Governmental industrial Hygienists

 A4<sup>(1)</sup> = Non classifiable come carcinogeno per l'uomo

NDS = Najwyższe Dopuszczalne Stężenie

VLE = Valor limite de exposição

 A4<sup>(2)</sup> = Agentes não classificáveis como carcinogénicos no Homem

ПДК = Величина

Ф = аэрозоли преимущественно фиброгенного действия

4 = класс - умеренно опасные.

VLA = Valor limite Ambiental

AFS = Arbetsmiljöverkets Författningssamling

WEL = Workplace exposure limit

**NOTE:** To request language / country specific SDS please e-mail [sds@lkabminerals.com](mailto:sds@lkabminerals.com)

## 8.2 Exposure controls

Protective equipment



Engineering measures:

Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of inhalation of dust.



## SECTION 8: Exposure controls / personal protection

Respiratory equipment:	No specific recommendation made, but respiratory protection must be used if the general level exceeds the recommended occupational exposure limit. Wear dust masks in dusty areas.
Hand protection:	No specific hand protection noted, but gloves may still be advisable.
Eye protection:	Wear dust resistant safety goggles where this is a danger of eye contact.
Other protection:	Provide eyewash station.
Hygiene measures:	Wash hands at the end of each work shift and before eating, smoking and using the toilet.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic and physical and chemical properties

Appearance:	Granular, powder, dust
Colour:	Black
Odour:	Odourless
Solubility:	Insoluble in water
Melting point (°C):	1400 - 1600
Relative density:	5.0

### 9.2 Other information

Not relevant

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	No specific reactivity hazards associated with this product.
<b>10.2 Chemical stability</b>	Stable under normal temperature conditions.
<b>10.3 Possibility of hazardous reactions</b>	Not relevant
<b>10.4 Conditions to avoid</b>	No specific conditions are likely to result in a hazardous situation
<b>10.5 Incompatible materials</b>	
Materials to avoid:	No specific, or groups, of materials are likely to react to produce a hazardous situation.
<b>10.6 Hazardous decomposition products</b>	None under normal circumstances

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Other health effects:	This substance has no evidence of carcinogenic properties.
Acute toxicity	
Acute toxicity (Oral LD50):	Not relevant
Acute toxicity (Dermal LD50):	Not relevant
Acute toxicity (Inhalation LC50):	Not relevant
Inhalation:	Dust in high concentrations may irritate the respiratory system.
Ingestion:	May cause discomfort if swallowed.
Skin contact:	Powder may irritate skin.
Eye contact:	Particles in the eyes may cause irritation and smarting.

## SECTION 12: Ecological information

<b>Ecotoxicity:</b>	Not regarded as dangerous for the environment.
<b>12.1 Acute fish toxicity:</b>	Not considered toxic to fish.
<b>12.2 Persistence and degradability</b> Degradability:	The product is not readily biodegradable.
<b>12.3 Bioaccumulative potential:</b>	The product is not bioaccumulating.
<b>12.4 Mobility in soil:</b>	Not relevant, due to the form of the product.
<b>12.5 Results of PBT and vPvB assessment:</b>	This product does not contain any PBT or vPvB substances.
<b>12.6 Other adverse effects:</b>	None known

## SECTION 13: Disposal considerations

<b>13.1 Waste treatment methods:</b>	Dispose of waste and residues in accordance with local authority requirements
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## SECTION 14: Transport considerations

Road transport notes:	Not classified
Rail transport notes:	Not classified
Sea transport notes:	Not classified
Air transport notes:	Not classified
<b>14.1 UN Number:</b>	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
<b>14.2 UN proper shipping name:</b>	Not classified for transportation.
<b>14.3 Transport and hazard class(es):</b>	Not classified for transportation.
<b>14.4 Packing group:</b>	Not classified for transportation.
<b>14.5 Environmental hazards</b> Environmentally hazardous substances / marine pollutant: no	
<b>14.6 Special precautions for user:</b>	Not classified for transportation.
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> Not applicable	

## SECTION 15: Regulatory information

<b>15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture</b> Approved code of practice:	Classification and labelling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
Guidance notes:	Workplace Exposure Limits EH40.
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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulations (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, including amendments. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16

**SECTION 15: Regulatory information**

December 2008 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 with amendments.

**15.2 Chemical Safety Assessment:**

No chemical safety assessment has been carried out.

**SECTION 16: Other information**

Revision date:	26/07/2018
Revision:	4
Document no:	12-04INT,18-07
Risk phrases in full:	NC – not classified

**Disclaimer:**

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However no warranty guarantee or representation is made to its accuracy, reliability of completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



## **MATERIAL SAFETY DATA SHEET ( MSDS ) OF CEMENT**

### **SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**Product Name** : Hydraulic Cement  
**Other Names** : Supramix+  
**Company Name** : PT Cemindo Gemilang, Tbk  
**Company Address** : Gama Tower 43<sup>rd</sup> Floor. JL. H. Rasuna Said Kav  
C-22 Jakarta Selatan- Indonesia .Telp. 021  
21889999

### **SECTION 2: HAZARDS IDENTIFICATION**

Harmful by inhalation.  
Irritate to wet skin, eye and respiratory system.

### **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Active ingredients : Proportion (%)  
Tri-Calcium Silicate : 50 - 70 %  
Di-Calcium Silicate : 10 - 30 %  
Tri-Calcium Aluminates : 0.5 - 15 (%)  
Tetra-Calcium aluminoferrite : 0 - 15 (%)  
Gypsum : 2.5 - 6 (%)

Hazardous ingredients :

Name according to Environment Control Directive : Hydraulic Cement

Hazard symbol : Not available R-phrases : Not available

EC-index - No : Not available Irritate on wet skin, eye and respiratory system

### **SECTION 4: FIRST AID MEASURES**

**Inhalation** : fresh air

**Skin contact** : wash off with plenty of water

**Eye contact** : rinse out with plenty of water, immediately summon eye

### **SECTION 5: FIRE FIGHTING MEASURES**

Non-combustible. Fire fighting is not required.



**SECTION 6: ACCIDENTAL RELEASE MEASURES**

	<b>Effect</b>	<b>First Aid</b>
<b>Product in Eye</b>	Irritation. May cause Inflammation of the cornea with long term or severe exposure	Hold eye open and flood with running water for at least 15 minutes. Seek medical attention
<b>Product on Skin</b>	Irritation. May cause allergic dermatitis in some individuals	Immediately remove contaminate clothing and wash skin thoroughly with running water. Launder clothes before reuse
	Irritation. Long term exposure may cause inflammation of the respiratory system lining	Remove to fresh air. Apply artificial respiratory if necessary. Seek medical advise
	Mild burns to the mouth and oesophagus	Do not induce vomiting. Give plenty of water. Rinse mouth with water immediately

**SECTION 7: HANDLING AND STORAGE**

Avoid excessive of dust generated

In bulk: normally handled pneumatically. Use standard dust filter on vehicles and silos

In bags: store in cool, dry, protected place. Away from strong acid and oxidizing agents

Spillage may be swept, shovelled or vacuumed up

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

Personal protective equipment

Respiratory protection : Required when dust are generated

Eye protection : Required

Hand protection : Required

Industrial Hygiene : Wash hand and face

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Form : Powder

Colour : Grey

Odour : Odourless

Ignition temperature : Not available



Flash point : Not available  
 Explosion limits : Not available  
 Density : 3.09 ± 0.5 g/cm<sup>3</sup>  
 Solubility in water : Party soluble

**SECTION 10: STABILITY AND REACTIVITY**

**Condition to be avoided** : No information available  
**Substance to be avoided** : Acid  
**Hazardous the composition products** : No information available

**SECTION 11: TOXICOLOGICAL INFORMATION**

**See point 6. The dust irritate skin, eyes and respiratory system**  
**Further toxicological information** :  
**After inhalation of dust** : Irritation symptoms in respiratory tract.  
**After wet skin contact** : Irritation.  
**After eye contact** : Irritation. Risk of blindness

**SECTION 12: ECOLOGICAL INFORMATION**

**Ecological effects**  
**Biological effects** : Lethal for fish. Toxic for aquatic organism, harmful effect due to pH shift.  
**Further ecological data** : Do not allow to enter water supplies, waste water or soil

**SECTION 13: DISPOSAL CONSIDERATION**

**Product**  
 Disposal must be in accordance with relevant local government regulation.  
**Packaging**  
 If no officially specified differently, non toxic packaging may be treated like household waste or recycle

**SECTION 14: TRANSPORT INFORMATION**

	DOT Classification	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	None	None	None



Additional information

- - -

Portland Cement products are not considered hazardous under Transport Canada's Transportation of Dangerous Goods (TDG) regulations.

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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not available.

**SECTION 15: REGULATORY INFORMATION**

Labelling according to Environment Control Directive Symbol :

Name	: not available	
R.-phrase	: not available	Cause irritation. Irritating to respiratory system
S.-phrase	: not available	In case of contact eyes, rinse immediately with plenty of water and seek medical advice. Wears suitable protective clothing, gloves and eye protection In case of accident or if you feel unwell, seek medical advice immediately

Indonesian regulations  
Non polluting substances

**SECTION 16: OTHER INFORMATION**

Reason for alteration  
Change in labelling  
Packaging

*The information contained here in based on the present state knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product*



## PRODUCT DATA SHEET

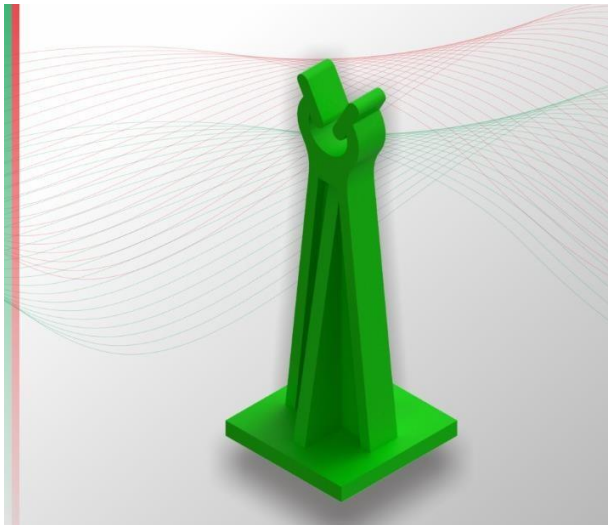
Document No.  
AAP-PDS-05

Revision.  
0

Effective date.  
01<sup>st</sup> APRIL 2020

### SECTION 1. PRODUCT DESCRIPTION

**Product** : Plastic Spacer  
**Material** : High Density Poly Ethylene (HDPE)  
**Manufacturer** : PT. Apollo Aneka Persada



Fitting to support the rebar/cage reinforcement to ensure that the rebar are rigidly located and concentric to the pipes, in addition to ensure there is no direct contact between reinforcement and pipes.

Product Character: Having the advantages of high bearing capacity, self-locking, crash-proof, good coherence, and easy operation





	<b>PRODUCT DATA SHEET</b>	Document No. AAP-PDS-05
		Revision. 0
		Effective date. 01 <sup>st</sup> APRIL 2020

## SECTION 2. MATERIAL IDENTIFICATION

---

Material:  
**Marlex High Density Polyethylene Resin**

Product Type:  
**HHM 5502**

Material Manufacturer:  
**Chevron Phillips Singapore Chemical (Private) Limited**

Expiry date:  
**Not available**

Lot Number / Batch No:  
**BLL447717**

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.31	g/10min
Density @23°C	ASTM D1505	0.953	g/cm3
Production date		2020/12/31	

## SECTION 3. STORAGE CONDITIONS:

---

- A storage of products for longer than 12 months is not recommended. Within other effects, the Products may suffer degradation, resulting in bad processability. Therefore, all products shall be used within the period of 12 months based on the day of shipment.
- The Products must be protected from direct sunlight and high atmospheric humidity during storage.
- Products must not be stored in an environment in which the temperature exceeds 40°C.



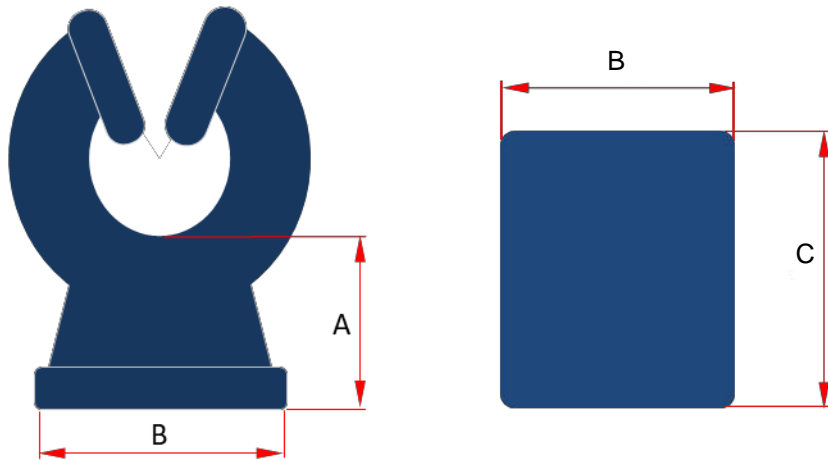
## PRODUCT DATA SHEET

Document No.  
AAP-PDS-05

Revision.  
0

Effective date.  
01<sup>st</sup> APRIL 2020

### SECTION 4. PRODUCT SPECIFICATION



NO	Description	Point A (+0.5)	Point B (+0.5)	Point C (+0.5)
		Unit (mm)	Unit (mm)	Unit (mm)
1	Plastic Spacer 15	15	22	25,7
2	Plastic Spacer 20	20	22	29,2
2	Plastic Spacer 30	30	22	26,7
3	Plastic Spacer 40	40	24,5	29,8
4	Plastic Spacer 45	45	25,6	29,5
5	Plastic Spacer 65	65	30,5	30,4

	<b>MATERIAL SAFETY DATA SHEET</b>	Document No. AAP-MSDS-05
		Revision. 0
		Effective date. 01 <sup>st</sup> APRIL 2020

## SECTION 1. PRODUCT AND MATERIAL IDENTIFICATION

---

**Product** : Plastic Spacer  
**Material** : High Density Poly Ethylene (HDPE)  
**Manufacture** : PT. Apollo Aneka Persada

## SECTION 2. HAZARDS IDENTIFICATION

---

### Emergency Overview:

Do not use this material in medical applications involving permanent implantation in the human body or permanent contact with internal body fluids or tissues fluids or tissues.

Do not use this material in medical applications involving brief or temporary implantation in the human body or contact with internal body fluids or tissues

### Classification of the substance or mixture:

Not a hazardous substance or mixture

## SECTION 3. FIRST AID MEASURES

---

### If inhaled:

Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. If symptoms persist, call a physician.

### In case of skin contact:


If the molten material gets on skin, quickly cool in water. Seek immediate medical attention. Do not try to peel the solidified material from the skin or use solvents or thinners to dissolve it.

### In case of eye contact:

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### If swallowed:

Do not induce vomiting without medical advice.

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## SECTION 4. FIREFIGHTING MEASURES

---

**Flash point:**

No data available

**Auto ignition temperature:**

No data available

**Suitable extinguishing media:**

Water. Water mist. Dry chemical. Carbon dioxide (CO<sub>2</sub>). Foam. If possible, water should be applied as a spray from a fogging nozzle since this is a surface burning material. The application of high velocity water will spread the burning surface layer. Avoid the use of straight streams that may create a dust cloud and the risk of a dust explosion. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Specific hazards during firefighting:**

Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.

**Special protective equipment for fire-fighters:**

Use personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary.

**Further information:**


This material will burn although it is not easily ignited.

**Fire and explosion protection:**

Treat as a solid that can burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Hazardous decomposition products:**

Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde.

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## SECTION 5. ACCIDENTAL RELEASE MEASURES

---

### Personal precautions:

Sweep up to prevent slipping hazard. Avoid breathing dust. Avoid dust formation.

### Environmental precautions:

Do not contaminate surface water. Prevent product from entering drains.

## SECTION 6. HANDLING AND STORAGE

---

### Advice on safe handling:

Use good housekeeping for safe handling of the product. Keep out of water sources and sewers. Spilled pellets and powders may create a slipping 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. At elevated temperatures (>350°F, >177°C), polyethylene can release vapors and gases, which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein. Based on animal data and limited epidemiological evidence, formaldehyde has been listed as a carcinogen. Following all recommendations within this SDS should minimize exposure to thermal processing emissions.

### Handling Continued:

Prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on .

### Storage:


Keep container in a cool place. Ground all equipment containing material. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

## SECTION 7. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Engineering measures:

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

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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.

#### **Respiratory protection:**

No respiratory protection is normally required. If heated material generates vapor or fumes that are not adequately controlled by ventilation, wear an appropriate respirator. Use the following elements for air-purifying respirators: Organic Vapor and Formaldehyde. Use a positive pressure, air supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection. Dust safety masks are recommended when the dust concentration is excessive.

#### **Eye protection:**

Use of safety glasses with side shields for solid handling is good industrial practice. If this material is heated, wear chemical goggles or safety glasses with side shields or a face shield. If there is potential for dust, use chemical goggles.

#### **Skin and body protection:**

At ambient temperatures use of clean and protective clothing is good industrial practice. If the material is heated or molten, wear thermally insulated, heat-resistant gloves that are able to withstand the temperature of the molten product. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate.

## **SECTION 8. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Form</b>	: Pellets
<b>Physical state</b>	: Solid
<b>Color</b>	: Various color
<b>Odor</b>	: Mild to no odor
<b>Odor Threshold</b>	: No data available
<b>Flash point</b>	: No data available
<b>Lower explosion limit</b>	: Not applicable
<b>Upper explosion limit</b>	: Not applicable
<b>Auto ignition temperature</b>	: No data available
<b>Thermal decomposition</b>	: Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.
<b>PH</b>	: Not applicable
<b>Melting point/range</b>	: 90 - 140 °C (194 - 284 °F)
<b>Freezing point</b>	: Not applicable



## MATERIAL SAFETY DATA SHEET

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01<sup>st</sup> APRIL 2020

<b>Initial boiling point and boiling range</b>	: Not applicable
<b>Vapor pressure</b>	: Not applicable
<b>Relative density</b>	: Not applicable
<b>Density</b>	: 0,91 - 0,97 g/cm <sup>3</sup> Please refer to the Technical Data Sheet (TDS) for more detailed information Relating to the nominal physical properties, Including density, of this polyethylene resin grade.
<b>Water solubility</b>	: Negligible
<b>Partition coefficient: noctanol / water</b>	: No data available
<b>Solubility in other solvents</b>	: No data available
<b>Viscosity, dynamic</b>	: Not applicable
<b>Viscosity, kinematic</b>	: Not applicable
<b>Relative vapor density</b>	: Not applicable
<b>Evaporation rate</b>	: Not applicable
<b>Reactivity</b>	: This material is considered non-reactive under normal ambient and anticipated storage and handling conditions of temperature and pressure.
<b>Chemical stability</b>	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
<b>Conditions to avoid</b>	: Avoid prolonged storage at elevated temperature.
<b>Materials to avoid</b>	: Avoid contact with strong oxidizing agents.
<b>Thermal decomposition</b>	: Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.
<b>Hazardous decomposition products</b>	: Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde.
<b>Other data</b>	: No decomposition if stored and applied as directed.

## SECTION 9. TOXICOLOGY INFORMATION

<b>Acute Toxicity</b>	: Not available
<b>Chronic Toxicity</b>	: There are no known health effects from the long term use or contact with Polyethylene; there are no known health effects from the long term long term use or contact associated with the resins used products

	<b>MATERIAL SAFETY DATA SHEET</b>	Document No. AAP-MSDS-05
		Revision. 0
		Effective date. 01 <sup>st</sup> APRIL 2020

## SECTION 10. ECOLOGICAL INFORMATION

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### **Eco toxicity:**

Avoid release to the environment. This product is not expected to bioaccumulate through food chains in the environment.

### **Biodegradable/OECD:**

Not readily biodegradable.

### **Mobility:**

Low mobility in soil predicted. This material floats on water

## SECTION 11. DISPOSAL CONSIDERATIONS

---

### **Waste Disposal:**

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.

## SECTION 12. ADDITIONAL INFORMATION

---

### **Label Requirements:**

Irritating vapors to respiratory system and eyes may form when polymer is processed at high temperatures. Molten or heated material in skin contact can cause severe burns.

### **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, 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.





# PT. KRISTAL JAYA RAYA

Packaging Industrial Material Product, Bolt Nut, Pipe, Fitting, Flange, Gasket, Bearing, Tool, Lifting, Rigging Product, Industrial Net, Rope, Yarn&PP Twine.

Address : Komp. Ruko Grand Orchid Block A1 No. 02, Batam - Indonesia  
Phone : 0778 416 2586 • Fax : 0778 416 2608 • Email : sales@kjr.co.id • Web : www.kjr.co.id

## MATERIAL SAFETY DATA SHEET

MATERIAL : **Polypropylene Twine.**

### (I) PRODUCT IDENTIFICATION

Product Group : Polypropylene Twine for general packing.  
Base Resin : Polypropylene Homopolymer.

### Hazardous Material Identification System Rating

Health Hazard : 0 Minimal  
Flammability Hazard : 1 Slight  
Reactivity Hazard : 0 Minimal

### (II) PHYSICAL DATE

Boiling point	: Not applicable	Solubility in water	: Negligible
Vapor pressure @ 20C	: Not applicable	Specific gravity	: 0.88 – 0.92
Vapor density	: Not applicable	pH	: Not applicable
% volatile(vol.)	: <0.4	Evaporation rate	: Not applicable
Melting point	: > 160C (320F)		

### (III) FIRE AND EXPLOSION HAZARDS

Autoignition temperature : >357C (675F)  
Flash point : > 329C (625F)  
Flammable limit : Not available  
Extinguishing media : Water spray, dry chemical, foam or carbon dioxide.  
Special fire-fighting procedures : Material will not burn unless preheated. Do not enter confined fire space without full bunker gear. Cool fire exposing container with water.  
Unusual fire & expolsion hazard : None  
Stability considerations : Stable

### (IV) HEALTH HAZARD DATA

Ingestion : Product is practically non-toxic.  
Inhalation : Product fines can cause mechanical irritation.  
Skin contact : Product is unlikely to cause irritation.  
Eye contact : Product fines can cause mechanical irritation.  
Sign & symptoms : Irritation as noted above.



# PT. KRISTAL JAYA RAYA

Packaging Industrial Material Product, Bolt Nut, Pipe, Fitting, Flange, Gasket, Bearing, Tool, Lifting, Rigging Product, Industrial Net, Rope, Yarn&PP Twine.

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## MATERIAL SAFETY DATA SHEET

MATERIAL : **Polypropylene Twine.**

\* As PT. KRISTAL JAYA RAYA interprets the Malaysia Occupational Safety and Health Act and Regulations, these product should NOT be considered hazardous materials.

Emergency and first AID procedures:

Molten material : If molten material comes into contact with skin, immerse skin under a running stream of water until cooled. DO NOT attempt to remove the resin from the skin. Removal can result in tissue damage. Get immediate medical attention.

### (V) REACTIVITY DATA

Stability : Stable  
Conditions to Avoid : Temperature above 357C  
Material to Avoid : Strong oxidizing agent  
Decomposition Products : Carbon Monoxide, Carbon Dioxide, Aldehydes and Organic vapors.  
Hazardous polymerization : Will not occur

### (VI) HANDLING AND STORAGE

Handling and storage precautions : Keep away from sparks and open flame. This product may react with strong oxidizing agents and should not be stored near such materials. Stored in sprinkled warehouse. Keep temperature below 60C(140F) for quality control. Avoid direct sunlight due to UV light will deteriorate the physical properties and therefore reduce the quality and performance. Eliminate ignition source.

### (VII) DISPOSAL

Avoid dispose under walking surface. Hanging, tying, paying-off should be avoided unless job requirement to do so. Keep walking surfaces free of tangle, inter-twined, confuse mass material to avoid slipping and trapping hazard.

Waste disposal material in a permitted facility in accordance to local, state, and federal regulation is the recommended disposal method.



# PT. KRISTAL JAYA RAYA

Packaging Industrial Material Product, Bolt Nut, Pipe, Fitting, Flange, Gasket, Bearing, Tool, Lifting, Rigging Product, Industrial Net, Rope, Yarn&PP Twine.

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## MATERIAL SAFETY DATA SHEET

MATERIAL : **Polypropylene Twine.**

### (VIII) OTHER INFORMATION

The information supplied has been based upon the current level of information available, for the purpose of specifying the requirements regarding environment, health and safety in conjunction with the product. They are not to be interpreted as a warranty for specific product characteristics.

Date of issued : 12 Oct, 2021



(Reg. No. 786308 K)  
(GST No. 000076615680)

1.03, BENTENG 8,  
NO. 439, JALAN KLANG LAMA,  
58000 KUALA LUMPUR  
MALAYSIA  
TEL: 03-77709586 FAX:03-74964800

**MILL TEST CERTIFICATE**

Customer's Name: **PT BREDERO SHAW INDONESIA**  
Product : **Hard Drawn Steel Wire**  
Specification : **ASTM A82/ASTM A1064M/EN 10080**

Certificate No: **17835/20**  
Invoice/DO ref: **TFS12123**  
Date of issue: **15.05.20**

Size/Dia. (mm)	Batch No.	Mechanical Properties				Reverse Bend Test (180 deg)	Chemical Properties (%)				
		G.L. (mm)	Proof Stress (N/mm2)	Tensile Strength (N/mm2)	R.A. (%)		C	Si	Mn	P	S
							x100			x1000	
5.00 packed in 250kg coils  (Coil no NL- B94-B98)	P1060693 15/05/2020	300	528	561	40	No Visible Defect	10	15	29	29	28

We hereby certify that the material described herein has been processed and tested in accordance with the above specification

- Note
1. To get Kg/mm2 divide by 9.81
  2. To get Lb/in2 multiply by 145
  3. 1 N/mm2 = 1MPa
  4. C : 0.10 to 0.15%      Mn : 0.30 to 0.60%
  5. P&S : 0.45% max
  6. Nomirial weight per m of 5mm : 0.154kg

\_\_\_\_\_  
Name: PS TAN  
Position: Director

Authorised signature

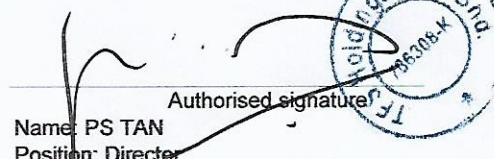


(Reg. No. 786308 K)  
(GST No. 000076615680)1.03, BENTENG 8,  
NO. 439, JALAN KLANG LAMA,  
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MALAYSIA  
TEL: 03-77709586 FAX:03-74964800**MILL TEST CERTIFICATE**Customer's Name: **PT BREDERO SHAW INDONESIA**  
Product : **Hard Drawn Steel Wire**  
Specification : **ASTM A82/ASTM A1064M/EN 10080**Certificate No: 17837/19  
Invoice/DO ref: TFS12123  
Date of issue: 15.05.20

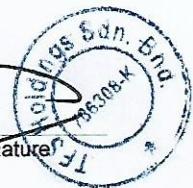
Size/Dia. (mm)	Batch No.	Mechanical Properties				Reverse Bend Test (180 deg)	Chemical Properties (%)				
		G.L. (mm)	Proof Stress (N/mm2)	Tensile Strength (N/mm2)	R.A. (%)		C	Si	Mn	P	S
							x100			x1000	
7.00 packed in 450kg coils  (Coil no D126-D139)	P1060693 15.05.20	300	630	569	42	No Visible Defect	12	15	30	29	27

We hereby certify that the material described herein has been processed and tested in accordance with the above specification

- Note
- To get Kg/mm2 divide by 9.81
  - To get Lb/in2 multiply by 145
  - 1 N/mm2 = 1MPa
  - C : 0.10 to 0.15% Mn : 0.30 to 0.60%
  - P&S : 0.45% max
  - Nominal weight per m of 6mm : 0.302kg



Authorised signature  
Name: PS TAN  
Position: Director



(Reg. No. 786308 K)  
(GST No. 000076615680)

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Product : **Hard Drawn Steel Wire**  
Specification : **ASTM A82/ASTM A1064M/EN 10080**

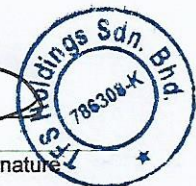
Certificate No: 17839/20  
Invoice/DO ref: TFS12123  
Date of issue: 15.05.20

Size/Dia. (mm)	Batch No.	Mechanical Properties				Reverse Bend Test (180 deg)	Chemical Properties (%)				
		G.L. (mm)	Proof Stress (N/mm2)	Tensile Strength (N/mm2)	R.A. (%)		C	Si	Mn	P	S
							x100			x1000	
8.00 packed in 450kg coils  (Coil no NL- E133 to E134)	P1060693 E-5	300	530	670	40	No Visible Defect	11	14	32	29	29

We hereby certify that the material described herein has been processed and tested in accordance with the above specification

- Note
- To get Kg/mm2 divide by 9.81
  - To get Lb/in2 multiply by 145
  - 1 N/mm2 = 1MPa
  - C : 0.10 to 0.15% Mn : 0.30 to 0.60%
  - P&S : 0.45% max
  - Nominal weight per m of 8mm : 0.395kg

Authorized signature  
Name: PS TAN  
Position: Director



# TOONG FONG BRAND

## COLD ROLLED/DRAWN STEEL WIRE FOR REINFORCING CONCRETE IN PIPE COATING

### Material Safety Sheet

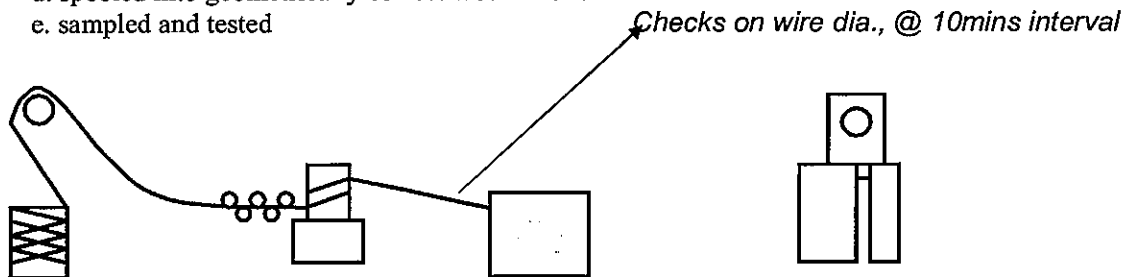
This material safety sheet covers the following aspects of safety in use of TOONG FONG Brand cold rolled/Drawn Steel Wire for Reinforcing Concrete in Pipe Coating.

#### 1. Method of Manufacture

Cold rolled / Drawn steel wire for reinforcing concrete is manufactured from Low Carbon Steel Wire Rods.

The Wire Rods are

- pay-off from coils
- mechanically descaled
- cold reduced required diameter
- spoiled into geometrically correct wound coils
- sampled and tested



Wire Pay-off

Mechanical  
Descaling

Spoiled to coils

Mechanical Testing

#### Schematics of Method of Manufacture

#### 2. Chemical Composition

The chemical composition cold reduced or drawn wire is determined by the grade of low carbon steel wire rods.

Normally, low carbon steel wire rods of grade SAE1010 to SAE1015 are used. The carbon content of these grade of rods should not exceed 0.15%. For other trace elements such as silicon, manganese, phosphorous are as listed under grade requirements of ASTM A510-82M

#### 3. Mechanical Properties

The "tensile" strength requirement of the steel wire is often expressed in terms of Characteristic Proof Stress of the steel wire. The requirement under most standards, such as ASTM, BS, Afnor, DIN, is that Characteristic Proof Stress is above 485Mpa.

Additionally, visual test for brittleness is material is required. On a 180degree bend, the wire should not exhibit any surface cracks.

#### 4. Appearance

The steel wire shall have no defect which is harmful to resistance welding. The surface should be sufficiently free from rust or oil residue which inhibits resistance welding.

#### 5. Diameter / Tolerance

The theoretical diameter of the wire is calculated by weighing and measuring a sample of not less than 1m in length.

Formula is

$$Wt (kg) = A (cm^2) \times 0.7854 \times L (m)$$

=  $3.142 \times d^2 \times 0.7854 \times L (m) / 4$  where d is theoretical diameter L is measured length, A = theoretical cross section area.

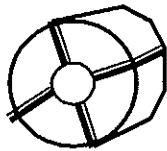
A tolerance of  $\pm 3\%$  in actual deviation from cross section area is allowed.

#### 6. Sampling and Testing

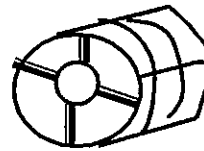
Unless agreed otherwise between seller and buyer, 1 sample for every 10M/ton of each size of wire delivered should be extracted for mechanical testing to conform with Tensile Strength and Brittleness requirements.

The chemical composition of the wire should be determined from Steel Mill Certification of the wire rods.

#### 7. Packing



Securement of Steel Wire in single coil



Securement of Steel Wire in coil Group

TOONG FONG Steel Wire are spooled into geometrically correct coils, and secured by 19mm wide steel banding in individual coils in 4 places.

For small coils of up to 250kgs, 4 individual coils are placed in a coil group and strapped tightly again in 4 places.

For coils of above 250kgs, coil groups are for 3 individual coils

The coil groups are then wrapped in polythene sheets and marked. The marking is in the form of sticker stating:

- a. Date of Manufacture
- b. Weight of Coil Group
- c. Diameter of Coil Group
- d. Name of Manufacturer
- e. Wire Diameter
- f. Customer



The coils are handled in coil groups and are sufficiently well secured to ensure not damage, dents and exposure to weather.

Customers are advised to store coils to a maximum height of 3 coil groups, one on top of the other.

Wooden wedge stoppers should be placed at ends of a line of coil group.

*If further information is required, please do not hesitate to contact:*

**TOONG FONG INDUSTRIAL CO.,**

58, 5 1/2 Mile Jalan Klang,  
58000 Kuala Lumpur, Malaysia

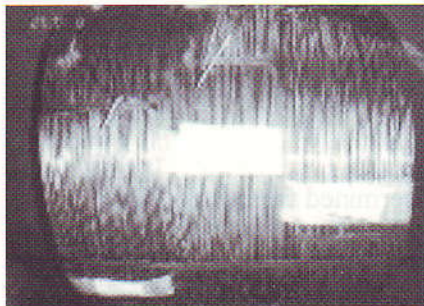
Tel: 603- 77828322 Fax: 603- 77815730 Email: [tfrss@pd.jaring.my](mailto:tfrss@pd.jaring.my)

# TOONG FONG

## ***Cold Rolled / Drawn Steel Wire For Reinforcing Concrete in Pipe Coating***

TOONG FONG cold rolled / drawn steel wire for reinforcing concrete is manufactured to meet the high standards required in weighted concrete coating of Steel Pipe for the Oil and Gas Industry.

The TOONG FONG steel wire is produced to conform to the requirements of major international Standards for Reinforcing Wire such as ASTM, British Standards, DIN, AFNOR and JIS



\*\* Standards conformed to -  
typically ASTM A82, BS4482

\*\* Diameter range -  
3.0mm to 12.0mm

\*\* Characteristic Design Strength  
*Proof Stress - Min. 485MPa*

\*\* Surface Finish -  
Clean and rust free for  
Resistance Welding

\*\* Coil Weight -  
available from 150 to 2,000kg

\*\* Coil Characteristics  
Compact, geometrically correct  
wound coils  
either 550mm Internal Diameter  
850mm Outer Diameter  
300mm Height or  
600mm Internal Diameter  
1,100mm Outer Diameter  
650mm Height

if you require further information,  
please call

## **TOONG FONG INDUSTRIAL CO.,**

58, 5 ½ Miles, Jalan Kelang Lama ,  
58000 Kuala Lumpur , Malaysia .

Tel : 603-7782 8322 Fax : 603-7781 5730

Email : [enquiry@toongfong.com](mailto:enquiry@toongfong.com) , [pstan@toongfong.com](mailto:pstan@toongfong.com)

#### 4. Appearance

The steel wire shall have no defect which is harmful to resistance welding. The surface should be sufficiently free from rust or oil residue which inhibits resistance welding.

#### 5. Diameter / Tolerance

The theoretical diameter of the wire is calculated by weighing and measuring a sample of not less than 1m in length.

Formula is

$$\begin{aligned} \text{Wt (kg)} &= A \text{ (cm}^2\text{)} \times 0.7854 \times L \text{ (m)} \\ &= 3.142 \times d^2 \times 0.7854 \times L \text{ (m)} / 4 \end{aligned}$$

L is measured length, A = theoretical cross section area.

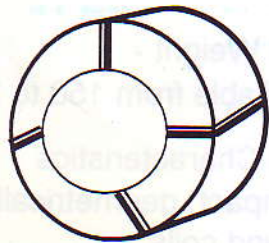
A tolerance of +/- 3% in actual deviation from cross section area is allowed.

#### 6. Sampling and Testing

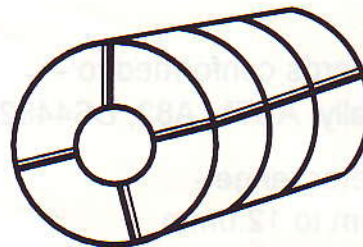
Unless agreed otherwise between seller and buyer, 1 sample for every 10M/ton of each size of wire delivered should be extracted for mechanical testing to conform with Tensile Strength and Brittleness requirements.

The chemical composition of the wire should be determined from Steel Mill Certification of the wire rods.

#### 7. Packing



Securement of Steel Wire  
in Individual Coils



Securement of Steel Wire  
in coil group

TOONG FONG Steel Wire are spooled into geometrically correct coils, and secured by 19mm wide steel banding in individual coils are 4 places.

For small coils of up to 250kgs, 4 individual coils are placed in a coil group and strapped tightly again in 4 places.

For coils of above 250kgs, coil groups are for 3 individual coils

The coil groups are then wrapped in polythene sheets and marked.

The marking is in the form of sticker stating:

- Date of Manufacture
- Weight of Coil Group
- Diameter of Coil Group
- Name of Manufacturer
- Wire Diameter
- Customer



## Safety Data Sheet

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<b>Document Group:</b>	10-2546-9	<b>Version Number:</b>	29.04
<b>Issue Date:</b>	02/15/22	<b>Supersedes Date:</b>	09/09/21

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Fusion Bonded Epoxy Coating 134

#### Product Identification Numbers

ID Number	UPC	ID Number	UPC
80-6101-5431-4		UU-0092-4998-6	

7100007283, 7100150274

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Fusion Bonded Epoxy Coating for Metal

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	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

Combustible Dust.

Serious Eye Damage/Irritation: Category 2B.

Skin Sensitizer: Category 1.

Carcinogenicity: Category 1A.

Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Exclamation mark | Health Hazard |

**Pictograms****Hazard Statements**

May form combustible dust concentrations in air.

Causes eye irritation.

May cause an allergic skin reaction.

May cause cancer.

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

**Precautionary Statements****Prevention:**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

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 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.

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

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

**SECTION 3: Composition/information on ingredients**

Ingredient	C.A.S. No.	% by Wt
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	25036-25-3	55 - 75 Trade Secret *
MICA-GROUP MINERALS	12001-26-2	25 - 35 Trade Secret *
QUARTZ SILICA	14808-60-7	< 15 Trade Secret *
C.I. PIGMENT GREEN 7	1328-53-6	1 - 5
CYANOQUANIDINE	461-58-5	1 - 5

FELDSPARS	68476-25-5	< 5
TITANIUM DIOXIDE	13463-67-7	1 - 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:**

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

Allergic skin reaction (redness, swelling, blistering, and itching). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

### 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

Powdered material may form explosive dust-air mixture. Avoid fire fighting methods that would cause powders to become airborne.

### Hazardous Decomposition or By-Products

**Substance**

Aldehydes  
Carbon monoxide  
Carbon dioxide  
Oxides of Nitrogen

**Condition**

During Combustion  
During Combustion  
During Combustion  
During Combustion

### 5.3. Special protective actions for fire-fighters

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. Eliminate all ignition sources if safe to do so. 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

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Vacuum to avoid dusting. **WARNING!** A motor could be an ignition source and cause combustible dust in the spill area to burn or explode. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

# SECTION 7: Handling and storage

## 7.1. Precautions for safe handling

For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. 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. Wash contaminated clothing before reuse. Use personal protective equipment (gloves, respirators, etc.) as required. Dust clouds of this material in sufficient concentration in combination with an ignition source may be explosive. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions. Routine housekeeping should be instituted to ensure that combustible dusts do not accumulate on surfaces. Solids can generate static electricity charges when transferred and in mixing operations sufficient to be an ignition source. Evaluate the need for precautions, such as grounding and bonding, low energy transfer of material (e.g. low speed, short distance), or inert atmospheres.

## 7.2. Conditions for safe storage including any incompatibilities

Store away from heat.

# 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
MICA-GROUP MINERALS	12001-26-2	ACGIH	TWA(respirable fraction):0.1 mg/m <sup>3</sup>	
MICA-GROUP MINERALS	12001-26-2	OSHA	TWA:20 millions of particles/cu. ft.	
COPPER COMPOUNDS	1328-53-6	ACGIH	TWA(as Cu, fume):0.2 mg/m <sup>3</sup> ;TWA(as Cu dust or mist):1 mg/m <sup>3</sup>	
TITANIUM DIOXIDE	13463-67-7	ACGIH	TWA:10 mg/m <sup>3</sup>	A4: Not class. as human carcin
TITANIUM DIOXIDE	13463-67-7	OSHA	TWA(as total dust):15 mg/m <sup>3</sup>	
QUARTZ SILICA	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m <sup>3</sup>	A2: Suspected human carcin.
QUARTZ SILICA	14808-60-7	OSHA	TWA Table Z-1(respirable):0.05 mg/m <sup>3</sup> ;TWA Table Z-3(respirable):0.1 mg/m <sup>3</sup> ;TWA	

			concentration(respirable):0.1 mg/m <sup>3</sup> (2.4 millions of particles/cu. ft.)	
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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 ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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. Provide local exhaust at process emission sources to control exposure near the source and to prevent the escape of dust into the work area. It is recommended that all dust control equipment (such as local exhaust ventilation), process equipment, and material transport systems involved in handling of this product be evaluated for the need for explosion-protection safeguards. Recognized safeguards include explosion relief vents, explosion suppression systems, and oxygen deficient process environments. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Evaluate the need for electrically classified 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: Nitrile Rubber

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Nitrile

#### 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**

<b>Appearance</b>	
Physical state	Solid
Color	Dark Green
<b>Specific Physical Form:</b>	Powder
<b>Odor</b>	Epoxy
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point</b>	<i>No Data Available</i>
<b>Boiling Point</b>	<i>Not Applicable</i>
<b>Flash Point</b>	No flash point
<b>Evaporation rate</b>	<i>Not Applicable</i>
<b>Flammability (solid, gas)</b>	Not Classified
<b>Flammable Limits(LEL)</b>	<i>No Data Available</i>
<b>Flammable Limits(UEL)</b>	<i>No Data Available</i>
<b>Vapor Pressure</b>	<i>Not Applicable</i>
<b>Vapor Density</b>	<i>Not Applicable</i>
<b>Density</b>	1.51 g/cm <sup>3</sup>
<b>Specific Gravity</b>	1.51 [Ref Std:WATER=1]
<b>Solubility In Water</b>	<i>No Data Available</i>
<b>Solubility- non-water</b>	<i>No Data Available</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>No Data Available</i>
<b>Autoignition temperature</b>	<i>No Data Available</i>
<b>Decomposition temperature</b>	<i>No Data Available</i>
<b>Viscosity</b>	<i>Not Applicable</i>
<b>Molecular weight</b>	<i>No Data Available</i>
<b>Volatile Organic Compounds</b>	0 %
<b>Percent volatile</b>	0 %
<b>VOC Less H<sub>2</sub>O &amp; Exempt Solvents</b>	0 %
<b>*Dust deflagration index (Kst)</b>	70 - 250 bar.m/s [Details:Typical Range]
<b>Flash Point as text</b>	No flash point
<b>*Min. explosible conc.(MEC)</b>	35 - 55 g/m <sup>3</sup> [Details:Typical Range]
<b>*Min. ignition energy (MIE)</b>	3 - 100 mJ [Details:Typical Range]
<b>*Min. ign temp(MIT)-dust cloud</b>	450 - 550 °C [Details:Typical Range]

\* The values noted with an asterisk (\*) in the above table are representative values based on testing of raw materials and selected products. Additionally, a material's characteristics may change depending upon the process and conditions of use at a facility, including further changes in particle size, or mixture with other materials. In order to obtain specific data for the material, we recommend the user conduct characterization testing based on the use factors at the specific facility.

**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**

Heat

Sparks and/or flames

**10.5. Incompatible materials**

None known.

**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:**

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:**

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

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Additional Health Effects:****Prolonged or repeated exposure may cause target organ effects:**

Prolonged or repeated exposure by inhalation may cause:

Silicosis: Signs/symptoms may include breathlessness, weakness, chest pain, persistent cough, increased amounts of sputum, and heart disease.

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

<b><u>Ingredient</u></b>	<b><u>CAS No.</u></b>	<b><u>Class Description</u></b>	<b><u>Regulation</u></b>
Silica, Crystalline (Respirable Size)	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens
Silica dust, crystalline, in the form of quartz	14808-60-7	Grp. I: Carcinogenic to humans	International Agency for Research on Cancer

or cristobalite			
Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

### 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	Ingestion		No data available; calculated ATE >5,000 mg/kg
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Dermal	Rat	LD50 > 1,600 mg/kg
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Ingestion	Rat	LD50 > 1,000 mg/kg
MICA-GROUP MINERALS	Dermal		LD50 estimated to be > 5,000 mg/kg
MICA-GROUP MINERALS	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
QUARTZ SILICA	Dermal		LD50 estimated to be > 5,000 mg/kg
QUARTZ SILICA	Ingestion		LD50 estimated to be > 5,000 mg/kg
FELDSPARS	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
FELDSPARS	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
TITANIUM DIOXIDE	Dermal	Rabbit	LD50 > 10,000 mg/kg
TITANIUM DIOXIDE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
TITANIUM DIOXIDE	Ingestion	Rat	LD50 > 10,000 mg/kg
CYANOQUANIDINE	Dermal	Rabbit	LD50 > 10,000 mg/kg
CYANOQUANIDINE	Ingestion	Rat	LD50 > 30,000 mg/kg
C.I. PIGMENT GREEN 7	Dermal		LD50 estimated to be > 5,000 mg/kg
C.I. PIGMENT GREEN 7	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

Name	Species	Value
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Rabbit	Mild irritant
QUARTZ SILICA	Professional judgement	No significant irritation
FELDSPARS	Professional judgement	No significant irritation
TITANIUM DIOXIDE	Rabbit	No significant irritation
CYANOQUANIDINE	Human and animal	Minimal irritation
C.I. PIGMENT GREEN 7	Rabbit	No significant irritation

### Serious Eye Damage/Irritation

Name	Species	Value
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Rabbit	Moderate irritant
TITANIUM DIOXIDE	Rabbit	No significant irritation
CYANOQUANIDINE	Professional	Mild irritant

	judgement	
C.I. PIGMENT GREEN 7	Rabbit	No significant irritation

### Skin Sensitization

Name	Species	Value
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Human and animal	Sensitizing
TITANIUM DIOXIDE	Human and animal	Not classified
CYANOQUANIDINE	Guinea pig	Not classified
C.I. PIGMENT GREEN 7	Guinea pig	Not classified

### Respiratory Sensitization

Name	Species	Value
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Human	Not classified

### Germ Cell Mutagenicity

Name	Route	Value
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	In vivo	Not mutagenic
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
QUARTZ SILICA	In Vitro	Some positive data exist, but the data are not sufficient for classification
QUARTZ SILICA	In vivo	Some positive data exist, but the data are not sufficient for classification
TITANIUM DIOXIDE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In vivo	Not mutagenic
CYANOQUANIDINE	In Vitro	Not mutagenic
C.I. PIGMENT GREEN 7	In Vitro	Some positive data exist, but the data are not sufficient for classification

### Carcinogenicity

Name	Route	Species	Value
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
QUARTZ SILICA	Inhalation	Human and animal	Carcinogenic
TITANIUM DIOXIDE	Ingestion	Multiple animal species	Not carcinogenic
TITANIUM DIOXIDE	Inhalation	Rat	Carcinogenic
CYANOQUANIDINE	Ingestion	Rat	Not carcinogenic

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation

DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesi s
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER-DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
CYANOQUANIDINE	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematin g & during gestation
CYANOQUANIDINE	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	44 days
CYANOQUANIDINE	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	prematin g & 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

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER- DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER- DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DI(4-HYDROXYPHENOL) ISOPROPYLIDENE DIGLYCIDYL ETHER- DI(4-HYDROXYPHENOL) ISOPROPYLIDENE COPOLYMER	Ingestion	auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
MICA-GROUP MINERALS	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
QUARTZ SILICA	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
TITANIUM DIOXIDE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
TITANIUM DIOXIDE	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
CYANOQUANIDINE	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 6,822 mg/kg/day	13 weeks

**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.

**EPCRA 311/312 Hazard Classifications:**

**Physical Hazards**

Combustible Dust

**Health Hazards**

Carcinogenicity

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Specific target organ toxicity (single or repeated exposure)

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

**Ingredient**

C.I. PIGMENT GREEN 7 (Copper compounds except copper phthalocyanine compounds substituted with only H and/or Cl and/or Br (C32R16CuN8, R=any combination of H,Cl,Br))

**C.A.S. No**

1328-53-6

**% by Wt**

1 - 5

**15.2. State Regulations**

Contact 3M for more information.

**15.3. Chemical Inventories**

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

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 provisions of the Korean Toxic Chemical Control Law. 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. All required components of this product are listed on the active portion of the TSCA Inventory.

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.

**HMIS Hazard Classification**

**Health:** \*2 **Flammability:** 1 **Physical Hazard:** 0 **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).

**Document Group:** 10-2546-9  
**Issue Date:** 02/15/22

**Version Number:** 29.04  
**Supersedes Date:** 09/09/21

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<b>Document Group:</b>	16-0158-2	<b>Version Number:</b>	16.00
<b>Issue Date:</b>	09/11/19	<b>Supersedes Date:</b>	02/20/16

### Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323

ID Number	UPC	ID Number	UPC
80-6300-0057-0	00-51135-17563-7	80-6300-0058-8	
80-6300-0066-1		80-6300-0164-4	
80-6300-0369-9			

7000031875, 7100009100, 7000133705, 7000058899, 7010351939

### Recommended use

Coating, Two part epoxy coating system

### Supplier's details

**MANUFACTURER:** 3M  
**DIVISION:** Electrical Markets Division

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000, USA  
**Telephone:** 1-888-3M HELPS (1-888-364-3577)

### Emergency telephone number

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

**This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:**

16-0702-7, 16-0684-7

### Reason for Reissue

Conversion to GHS format SDS.

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purpose and suitable for user's method of use or application.

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<b>Document Group:</b>	16-0702-7	<b>Version Number:</b>	23.00
<b>Issue Date:</b>	09/10/19	<b>Supersedes Date:</b>	03/29/19

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323 Part B

#### Product Identification Numbers

ID Number	UPC	ID Number	UPC
80-6116-1153-6		80-6116-1517-2	
80-6300-0060-4	00-51135-17566-8	80-6300-0062-0	00-51135-17568-2
80-6300-0248-5			

7010350483, 7010401275, 7010401497

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Part B of 2 Part Liquid Epoxy Coating System

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	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

Acute Toxicity (inhalation): Category 4.  
 Serious Eye Damage/Irritation: Category 1.  
 Skin Corrosion/Irritation: Category 1B.  
 Skin Sensitizer: Category 1.  
 Reproductive Toxicity: Category 2.  
 Specific Target Organ Toxicity (single exposure): Category 3.

#### 2.2. Label elements

**Signal word**

Danger

**Symbols**

Corrosion | Exclamation mark | Health Hazard |

**Pictograms****Hazard Statements**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Harmful if inhaled.

May cause respiratory irritation.

Suspected of damaging fertility or the unborn child.

**Precautionary Statements****Prevention:**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing, and eye/face protection.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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 doctor/physician.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

**Disposal:**

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

**2.3. Hazards not otherwise classified**

May cause chemical gastrointestinal burns.

**Supplemental Information:**

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

11% of the mixture consists of ingredients of unknown acute oral toxicity.

23% of the mixture consists of ingredients of unknown acute dermal toxicity.  
60% of the mixture consists of ingredients of unknown acute inhalation toxicity.

### SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
P-TERT-BUTYLPHENOL	98-54-4	10 - 30 Trade Secret *
HYDROUS MAGNESIUM SILICATE	14807-96-6	10 - 30 Trade Secret *
4-NONYL PHENOL, branched	84852-15-3	5 - 15 Trade Secret *
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	1477-55-0	5 - 15 Trade Secret *
TRIMETHYLHEXAMETHYLENEDIAMINE	25620-58-0	5 - 15 Trade Secret *
PHENOL FORMALDEHYDE AMINE POLYMER	104242-08-2	1 - 10 Trade Secret *
COLOR, APHA	Mixture	1 - 5 Trade Secret *
C.I. PIGMENT GREEN 7	1328-53-6	1 - 5 Trade Secret *
POLYAMIDE	Trade Secret*	0.1 - 1.5 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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

##### 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. Do not induce vomiting. Get immediate 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  
 Carbon dioxide  
 Oxides of Nitrogen

During Combustion  
 During Combustion  
 During Combustion

**5.3. Special protective actions for fire-fighters**

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. 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. 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 in accordance with applicable local/regional/national/international regulations.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. 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. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

**7.2. Conditions for safe storage including any incompatibilities**

Store in a well-ventilated place. Keep container tightly closed. Store away from acids. Store away from oxidizing agents.

**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
COPPER COMPOUNDS	1328-53-6	ACGIH	TWA(as Cu dust or mist):1	

			mg/m3;TWA(as Cu, fume):0.2 mg/m3	
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	1477-55-0	ACGIH	CEIL:0.018 ppm	SKIN
HYDROUS MAGNESIUM SILICATE	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m3	A4: Not class. as human carcin
HYDROUS MAGNESIUM SILICATE	14807-96-6	OSHA	TWA:2 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 ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity. Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

**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****Appearance****Physical state**

Liquid

**Color**

Green

**Odor**

Strong Amine

**Odor threshold***No Data Available***pH***No Data Available***Melting point***No Data Available***Boiling Point**

&gt; 200 °F

**Flash Point**> 200 °F [*Test Method*:Pensky-Martens Closed Cup]**Evaporation rate**< 1 [*Ref Std*:BUOAC=1]**Flammability (solid, gas)**

Not Applicable

**Flammable Limits(LEL)**

1 % volume

**Flammable Limits(UEL)**

7 % volume

**Vapor Pressure**0.05 mmHg [*Test Method*:Calculated] [*Details*:at 25C, Raoult's Law]**Vapor Density**> 1 [*Ref Std*:AIR=1]**Density**

1.2 g/ml

**Specific Gravity**1.2 [*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**13,000 - 20,000 centipoise [*@ 72 °F*] [*Test Method*:Brookfield]**Volatile Organic Compounds**12 g/l [*Details*:For coating mixture of Parts A and B]**Percent volatile**

1.28 % volume

**VOC Less H2O & Exempt Solvents***Not Applicable***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**

None known.

**10.5. Incompatible materials**

Strong oxidizing agents

Reducing agents

**10.6. Hazardous decomposition products****Substance**

Ammonia

**Condition**

During Storage

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:

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

#### Skin Contact:

May be harmful in contact with skin.

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

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 Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

May cause additional health effects (see below).

#### Additional Health Effects:

#### Prolonged or repeated exposure may cause target organ effects:

Dermal Effects: Signs/symptoms may include changes in skin pigmentation and/or coloration.

#### Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

#### Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Generic: CAS NO S14807966D	14807-96-6	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

#### Additional Information:

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

#### 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 ATE2,000 - 5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE1 - 5 mg/l
Overall product	Ingestion		No data available; calculated ATE2,000 - 5,000 mg/kg
P-TERT-BUTYLPHENOL	Dermal	Rabbit	LD50 2,318 mg/kg
P-TERT-BUTYLPHENOL	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.6 mg/l
P-TERT-BUTYLPHENOL	Ingestion	Rat	LD50 4,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Ingestion		LD50 estimated to be > 5,000 mg/kg
4-NONYL PHENOL, branched	Dermal	Rabbit	LD50 > 2,000 mg/kg
4-NONYL PHENOL, branched	Ingestion	Rat	LD50 1,531 mg/kg
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Dermal	Rabbit	LD50 > 2,000 mg/kg
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.2 mg/l
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Rat	LD50 980 mg/kg
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Rat	LD50 910 mg/kg
C.I. PIGMENT GREEN 7	Dermal		LD50 estimated to be > 5,000 mg/kg
C.I. PIGMENT GREEN 7	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

Name	Species	Value
P-TERT-BUTYLPHENOL	Rabbit	Irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
4-NONYL PHENOL, branched	Rabbit	Corrosive
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Rat	Corrosive
TRIMETHYLHEXAMETHYLENEDIAMINE	Not available	Corrosive
C.I. PIGMENT GREEN 7	Rabbit	No significant irritation

### Serious Eye Damage/Irritation

Name	Species	Value
P-TERT-BUTYLPHENOL	Rabbit	Corrosive
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
4-NONYL PHENOL, branched	Rabbit	Corrosive
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Rabbit	Corrosive
TRIMETHYLHEXAMETHYLENEDIAMINE	Rabbit	Corrosive
C.I. PIGMENT GREEN 7	Rabbit	No significant irritation

### Skin Sensitization

Name	Species	Value
P-TERT-BUTYLPHENOL	Human and animal	Not classified
4-NONYL PHENOL, branched	Guinea pig	Not classified
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Guinea pig	Sensitizing
TRIMETHYLHEXAMETHYLENEDIAMINE	Guinea pig	Sensitizing
C.I. PIGMENT GREEN 7	Guinea pig	Not classified

**Respiratory Sensitization**

Name	Species	Value
HYDROUS MAGNESIUM SILICATE	Human	Not classified

**Germ Cell Mutagenicity**

Name	Route	Value
P-TERT-BUTYLPHENOL	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In vivo	Not mutagenic
4-NONYL PHENOL, branched	In Vitro	Not mutagenic
4-NONYL PHENOL, branched	In vivo	Not mutagenic
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	In Vitro	Not mutagenic
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	In vivo	Not mutagenic
TRIMETHYLHEXAMETHYLENEDIAMINE	In vivo	Not mutagenic
C.I. PIGMENT GREEN 7	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
P-TERT-BUTYLPHENOL	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification

**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	Not classified for development	Rat	NOAEL 70 mg/kg/day	2 generation
HYDROUS MAGNESIUM SILICATE	Ingestion	Not classified for development	Rat	NOAEL 1,600 mg/kg	during organogenesis
4-NONYL PHENOL, branched	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	28 days
4-NONYL PHENOL, branched	Ingestion	Toxic to female reproduction	official classification	NOAEL Not available	
4-NONYL PHENOL, branched	Ingestion	Toxic to development	official classification	NOAEL Not available	
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Not classified for female reproduction	Rat	NOAEL 450 mg/kg/day	1 generation
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Not classified for male reproduction	Rat	NOAEL 450 mg/kg	1 generation
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Not classified for development	Rat	NOAEL 450 mg/kg/day	1 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not classified for male reproduction	Rat	NOAEL 120 mg/kg/day	2 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not classified for development	Rat	NOAEL 120 mg/kg/day	2 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not classified for female reproduction	Rat	NOAEL 10 mg/kg/day	2 generation

**Lactation**

Name	Route	Species	Value
4-NONYL PHENOL, branched	Ingestion	Rat	Not classified for effects on or via lactation

**Target Organ(s)****Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 5.6 mg/l	4 hours
M-XYLENE-.ALPHA.ALPH A.'-DIAMINE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Not available	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Ingestion	endocrine system   liver   kidney and/or bladder	Not classified	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	blood	Not classified	Rat	NOAEL 200 mg/kg	6 weeks
HYDROUS MAGNESIUM SILICATE	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
HYDROUS MAGNESIUM SILICATE	Inhalation	pulmonary fibrosis   respiratory system	Not classified	Rat	NOAEL 18 mg/m3	113 weeks
4-NONYL PHENOL, branched	Ingestion	endocrine system   hematopoietic system   liver	Not classified	Rat	NOAEL 400 mg/kg/day	28 days
4-NONYL PHENOL, branched	Ingestion	kidney and/or bladder   heart   bone, teeth, nails, and/or hair   immune system   muscles   nervous system   respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	90 days
M-XYLENE-.ALPHA.ALPH A.'-DIAMINE	Ingestion	endocrine system   blood   bone marrow	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
TRIMETHYLHEXAMET HYLENEDIAMINE	Ingestion	hematopoietic system   liver	Not classified	Rat	NOAEL 180 mg/kg/day	13 weeks

**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. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. 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): D032 (Hexachlorobenzene)

## 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.

#### EPCRA 311/312 Hazard Classifications:

##### Physical Hazards

Not applicable

##### Health Hazards

Acute toxicity

Hazard Not Otherwise Classified (HNOC)

Reproductive toxicity

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

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

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
4-NONYL PHENOL, branched	84852-15-3	Trade Secret 5 - 15
4-NONYL PHENOL, branched (NONYLPHENOL AND ITS ETHOXYLATES (NPE))	84852-15-3	5 - 15
4-NONYL PHENOL, branched (Phenol, 4-nonyl-, branched)	84852-15-3	5 - 15
4-NONYL PHENOL, branched (Phenol, nonyl-)	84852-15-3	5 - 15
4-NONYL PHENOL, branched (p-Isononylphenol)	84852-15-3	5 - 15

This material contains a chemical which requires export notification under TSCA Section 12[b]:

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
4-NONYL PHENOL, branched (Phenol, 4-nonyl-, branched)	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed
4-NONYL PHENOL, branched (Phenol, nonyl-)	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed
4-NONYL PHENOL, branched	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed

This material contains a chemical subject to a proposed EPA Significant New Use Rule (TSCA Section 5)

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Reference</u>
4-NONYL PHENOL, branched	84852-15-3	79 FR 59186

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

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 product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

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:** 0 **Special Hazards:** None  
**Corrosive:** Yes

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:** \*3 **Flammability:** 1 **Physical Hazard:** 0 **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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**Product Safety Information Sheet**

Printing date 30.07.2018

Version number 3

Revision: 30.07.2018

**1 Identification of the substance/mixture and of the company/undertaking**

· **Product identifier** Covalence Heat Shrinkable Products

· **Trade name:** Covalence Heat Shrinkable Products

· **Article number:**

APPM, BLOT, BLUE-60, CASEAL, CCS-DHEC, CCS-FLAP, CMS, CPSM, CSEM, CSEM-F, DHEC, DIRAX, DUALSEAL, EASYSEAL, FCTS, FCWS, FCWS-F, FLANGESEAL, FLEXCLAD, FOPS, HEPS, HTLP60, HTLP80, HTLP-HT, HTLP-PP, HTLP-W, HTTE, IPEC, IPPS, KR6, MEPS, MPSM, MWTM, PERP, PERP60E, PERP80, PERP-MELTSTICK, PP-MELTSTICK, PPRP, PPS120, RAYCLAD, RAYJOINT, RFS, RJS-E, ROCS, S1052, S1080, S1113, S1135, S1137, S1138, S1182, S1238, SHEET, TISK, TISKW-F, TISW-F, TPS, TPSM, WATERWRAP, WPC60, WPC65M, WPC100M, WPC120, WPC-C30, WPC-C50, WPCP-IV, WPCT, WPSM, XCSM

· **Relevant identified uses of the substance or mixture and uses advised against**

· **Sector of Use**

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

· **Article category** AC13 Plastic articles

· **Application of the substance / the mixture**

Sealing

Coating

· **Uses advised against** -

· **Details of the supplier**

· **Manufacturer/Supplier:** Seal For Life Industries - Covalence <sup>TM</sup>

· **Contact details:**

Seal For Life Industries BVBA, Nijverheidsstraat 13, B-2260 Westerlo, Belgium  
Tel. +32 14 72 25 00, Fax. +32 14 72 25 70, Email: [belgium@sealforlife.com](mailto:belgium@sealforlife.com)

· **Further information obtainable from:** Occupational product safety department of Seal For Life Industries

**2 Hazards identification**

· **Classification of the substance or mixture**

The product is not classified, according to the Globally Harmonised System (GHS).

· **Label elements**

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not available.

· **vPvB:** Not available.



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**Trade name: Covalence Heat Shrinkable Products**

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### 3 Composition/information on ingredients

· **Chemical characterisation: Mixtures**

· **Description:** Mixture of nonhazardous substances.

· **Dangerous components:** Void

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

### 4 First aid measures

· **Description of first aid measures**

· **General information:**

Take affected persons out of danger area and lay down.  
No special measures required.

· **After inhalation:** Take affected persons into fresh air and keep quiet.

· **After skin contact:**

If skin irritation continues, consult a doctor.  
After contact with the molten product, cool rapidly with cold water.  
Seek immediate medical advice.  
Do not pull solidified product off the skin.  
Cover wound with a sterile dressing.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed**

Breathing difficulty  
Coughing  
Headache  
Dizziness  
Nausea

· **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  
ABC powder  
Carbon dioxide  
Use fire extinguishing methods suitable to surrounding conditions.

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide (CO)  
Nitrogen oxides (NO<sub>x</sub>)

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

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Wear fully protective suit.

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**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:** Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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** No special measures required.
  - **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:** No special requirements.
    - **Information about storage in one common storage facility:** Store away from oxidising agents.
    - **Further information about storage conditions:** Store in dry conditions.
- **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:**

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.
- **Exposure controls**
  - **Personal protective equipment:**
    - **General protective and hygienic measures:**

Do not eat, drink, smoke or sniff while working.  
Be sure to clean skin thoroughly after work and before breaks.
    - **Respiratory protection:**

Not necessary if room is well-ventilated.  
Filter A
    - **Protection of hands:** Heat resistant gloves
    - **Eye protection:** Not required.

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 · **Body protection:** Protective work clothing

**9 Physical and chemical properties**

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
· <b>Form:</b>	Solid in various forms
· <b>Colour:</b>	Various colours
· <b>Odour:</b>	Light
· <b>Odour threshold:</b>	Not determined.
· <b>pH-value:</b>	Not applicable.
· <b>Change in condition</b>	
· <b>Melting point/freezing point:</b>	65-160 °C
· <b>Initial boiling point and boiling range:</b>	Undetermined.
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gas):</b>	Not determined.
· <b>Ignition temperature:</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Product is not selfigniting.
· <b>Explosive properties:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.
· <b>Vapour pressure:</b>	Not applicable.
· <b>Density at 20 °C:</b>	0.9-1.8 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	
· <b>water:</b>	Insoluble.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
· <b>Dynamic:</b>	Not applicable.
· <b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
· <b>VOC (EC)</b>	0.00 %
· <b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

III/EN

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**Trade name: Covalence Heat Shrinkable Products**

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**10 Stability and reactivity**

- **Reactivity** No further relevant information available.
  - **Chemical stability**
    - **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
  - Reacts with strong acids.
  - Reacts with oxidising agents.
- **Hazardous decomposition products:** Danger of forming toxic pyrolysis products.

**11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity**
    - **LD/LC50 values relevant for classification:** No further relevant information available
    - **Primary irritant effect:**
      - **Skin corrosion/irritation** No irritant effect.
      - **Serious eye damage/irritation** No irritating effect.
    - **Respiratory or skin sensitisation** No sensitising effects known.
  - **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

**12 Ecological information**

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
  - **PBT:** Not available.
  - **vPvB:** Not available.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
  - **Recommendation** Smaller quantities can be disposed of with household waste.

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· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b> · ADR, ADN, IMDG, IATA	Void
· <b>UN proper shipping name</b> · ADR, ADN, IMDG, IATA	Void
· <b>Transport hazard class(es)</b> · ADR, ADN, IMDG, IATA · Class	Void
· <b>Packing group</b> · ADR, IMDG, IATA	Void
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	Void

**15 Regulatory information**

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

- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **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.

· **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.

(Contd. on page 7)

**Product Safety Information Sheet**

Printing date 30.07.2018

Version number 3

Revision: 30.07.2018

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**Trade name: Covalence Heat Shrinkable Products**

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(Contd. of page 6)

· **Department issuing document:** Occupational product safety department of Seal For Life Industries

· **Contact:**

Seal For Life Industries

Gasselterstraat 20, 9503JB Stadskanaal, the Netherlands

Tel: +31 599 696 170; Fax: +31 599 696 177; Email: [info@sealforlife.com](mailto:info@sealforlife.com)

· **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)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## Borcoat™ BB127E

Version 6.1

Revision Date: 30.04.2020

Former date: 28.04.2020

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

#### 1.1 Product identifier

Trade name : Borcoat BB127E

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

Use of the Substance/Mixture : Raw material for plastics industry

#### 1.3 Details of the supplier of the safety data sheet

Supplier : Borealis AG  
Wagramer Strasse 17-19, 1220 Vienna, Austria  
Telephone: +43 1 22400 0

E-mail address : [sds@borealisgroup.com](mailto:sds@borealisgroup.com)

#### 1.4 Emergency telephone number

+44 (0) 1235 239 670 (NCEC Carechem 24)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1A H317: May cause an allergic skin reaction.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**  
P261 Avoid breathing dust/ fume/ gas/ mist/

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P272	vapours/ spray. Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves.
<b>Response:</b>	
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
<b>Disposal:</b>	
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:  
maleic anhydride

### 2.3 Other hazards

The product burns, but is not classified as flammable.  
Dust from the product gives a potential risk for dust explosion.

Results of PBT and vPvB 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.

## SECTION 3: Composition/information on ingredients

The product is a polypropylene polymer.

### 3.2 Mixtures

Chemical nature : Raw material for plastics industry

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
maleic anhydride	108-31-6 203-571-6 607-096-00-9	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1A; H317 STOT RE 1; H372	>= 0,001 - < 0,1

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For explanation of abbreviations see section 16.

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- |                         |   |
|-------------------------|---|
| If inhaled              | : Move to fresh air.<br>If symptoms persist, call a physician.  |
| In case of skin contact | : Wash off with soap and plenty of water.<br>Call a physician if irritation develops or persists.<br>If molten material comes in contact with the skin, cool with plenty of water. DO NOT remove solidified product, as removal could result in severe tissue damage. |
| In case of eye contact  | : Flush eyes with water as a precaution.<br>Get medical attention if irritation develops and persists.  |
| If swallowed            | : Rinse mouth with water.<br>Consult a physician if necessary.  |

#### 4.2 Most important symptoms and effects, both acute and delayed

- |          |  |
|----------|--|
| Symptoms | : Inhalation of dust may irritate the respiratory tract.<br>Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.<br><br>Skin contact may provoke the following symptoms:<br>Irritation |
| Risks    | : May cause an allergic skin reaction.   |

#### 4.3 Indication of any immediate medical attention and special treatment needed

- |           |  |
|-----------|--|
| Treatment | : Treat symptomatically.<br>No specific instructions needed. |
|-----------|--|

---

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

- |                              |   |
|------------------------------|---|
| Suitable extinguishing media | : Water in spread jet, dry chemicals, foam or carbon dioxide. |
|------------------------------|---|

#### 5.2 Special hazards arising from the substance or mixture

- |                                      |   |
|--------------------------------------|---|
| Specific hazards during firefighting | : Principal toxicant in the smoke is carbon monoxide. |
|--------------------------------------|---|

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### 5.3 Advice for firefighters

Special protective equipment : Wear self-contained breathing apparatus and protective suit.  
for firefighters

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
Use personal protective equipment.

### 6.2 Environmental precautions

Prevent product from entering environment and drains.

### 6.3 Methods and material for containment and cleaning up

Vacuum or sweep up spill.  
All spill of material must be removed immediately to prevent slipping accidents.

### 6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.  
Provide adequate ventilation.  
Local exhaust ventilation may be necessary.  
Avoid inhalation of dust and decomposition fumes.  
Avoid contact with skin and eyes.

May cause sensitisation of susceptible persons.  
Personnel sensitised to this substance should not be allowed to handle the product.

Advice on protection against fire and explosion : Dust from the product gives a potential risk for dust explosion.  
All equipment shall be grounded. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Hygiene measures : When using do not eat, drink or smoke. Wash hands before

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breaks and at the end of workday.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Safety aspects do not require any special precautions in terms of storage.

Other data : Keep in a dry place.

### 7.3 Specific end use(s)

Specific use(s) : Raw material for pipe applications.

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

For national exposure limit (OEL) values, check country specific safety data sheets.

### 8.2 Exposure controls

#### Engineering measures

Provide adequate ventilation.

Local exhaust ventilation may be necessary.

#### Personal protective equipment

Eye protection : Safety glasses

Use eye protection according to EN 166.

#### Hand protection

Material : polyvinyl alcohol (PVA, PVAL)

Material : PVC or other plastic material gloves

#### Remarks

: Protective gloves complying with EN 374.  
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Skin and body protection : Protective clothing

Respiratory protection : In case of insufficient ventilation: Respirator with ABEK-P3 filter or self-contained breathing apparatus.

Protective measures : Appropriate personal protective equipment (PPE) shall be

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worn in accordance with Regulation (EU) 2016/425.

### Environmental exposure controls

General advice : Prevent product from entering environment and drains.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	: pellets
Colour	: natural colour
Odour	: odourless
Odour Threshold	: Not applicable
pH	: Not applicable insoluble
Melting range	: 130 - 170 °C
Boiling range	: Decomposes on heating.
Flash point	: Not applicable, (solid)
Evaporation rate	: Not applicable (solid)
Flammability (solid, gas)	: The product is not flammable.
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable (solid)
Density	: 0,9 - 1,0 g/cm <sup>3</sup>
Bulk density	: 500 - 600 kg/m <sup>3</sup>
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: Not applicable insoluble

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Auto-ignition temperature : > 300 °C

### Viscosity

Viscosity, dynamic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

## 9.2 Other information

No data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

The product is a stable thermoplastic.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

### 10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

Under fire conditions:, Carbon monoxide

During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

Not classified based on available information.

##### Skin corrosion/irritation

Not classified based on available information.

##### Serious eye damage/eye irritation

Not classified based on available information.

##### Respiratory or skin sensitisation

Skin sensitisation: May cause an allergic skin reaction.

Respiratory sensitisation: Not classified based on available information.

##### Germ cell mutagenicity

Not classified based on available information.

##### Carcinogenicity

Not classified based on available information.

##### Reproductive toxicity

Not classified based on available information.

##### STOT - single exposure

Not classified based on available information.

##### STOT - repeated exposure

Not classified based on available information.

##### Aspiration toxicity

Not classified based on available information.

##### Further information

##### Product:

Remarks: Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

### SECTION 12: Ecological information

#### 12.1 Toxicity

No data available

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### 12.2 Persistence and degradability

**Product:**

Biodegradability : Remarks: Not readily biodegradable.

### 12.3 Bioaccumulative potential

**Product:**

Bioaccumulation : Remarks: Does not accumulate in organisms.

### 12.4 Mobility in soil

**Product:**

Mobility : Remarks: Not expected to adsorb on soil.

Remarks: The product is insoluble and floats on water.

### 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 : Remarks: Should not be released into the environment.

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of contents/ container to an approved waste disposal plant.  
Check with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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### SECTION 14: Transport information

#### 14.1 UN number

Not regulated as a dangerous good

#### 14.2 UN proper shipping name

Not regulated as a dangerous good

#### 14.3 Transport hazard class(es)

Not regulated as a dangerous good

#### 14.4 Packing group

Not regulated as a dangerous good

#### 14.5 Environmental hazards

Not regulated as a dangerous good

#### 14.6 Special precautions for user

Remarks : Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR

#### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.  
Not applicable

#### 15.2 Chemical safety assessment

no

### SECTION 16: Other information

#### Full text of H-Statements

H302 : Harmful if swallowed.  
H314 : Causes severe skin burns and eye damage.



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- H317 : May cause an allergic skin reaction.  
H318 : Causes serious eye damage.  
H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H372 : Causes damage to organs through prolonged or repeated exposure if inhaled.

### Full text of other abbreviations

- Acute Tox. : Acute toxicity  
Eye Dam. : Serious eye damage  
Resp. Sens. : Respiratory sensitisation  
Skin Corr. : Skin corrosion  
Skin Sens. : Skin sensitisation  
STOT RE : Specific target organ toxicity - repeated exposure

### Further information

Other information :

Issued according to Regulation (EC) No 1907/2006, Annex II, and its amendments.  
Changes since the last version are highlighted in the margin.  
This version replaces all previous versions.

Issuer : Borealis, Group Product Stewardship / Niina Kerttula

Sources of key data used to compile the Safety Data Sheet :

The classification information of components is based on raw material supplier data.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## Borcoat BB127E

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### Disclaimer

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however we do not assume any liability whatsoever for the accuracy and completeness of such information.

**Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.**

**It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.**

No liability can be accepted in respect of the use of Borealis' products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.



# Polypropylene Borcoat™ BB127E

Grafted Polypropylene adhesive for Steel Pipe Coating

## Description

**Borcoat BB127E** is a maleic anhydride grafted polypropylene adhesive.

The product is supplied as pellets for melt extrusion.

The product is non-pigmented.

## Applications

**Borcoat BB127E** is recommended as an adhesive for multi-layer PP systems used in Steel Pipe Coating

## Specifications

**Borcoat BB127E** is intended to fulfil following National and International standards, when appropriate industrial manufacturing standard procedures are applied and a continuous quality system is implemented and when used in combination with BB108E-1199 and a compatible Fusion Bonded Epoxy (FBE) powder.

EN ISO 21809-1  
DIN 30678

NF A49-711  
ABNT NBR 15221-2

## Special Features

**Borcoat BB127E** The product is intended to be used as an adhesive for PP three layer or multi-layer thermal insulation systems at design temperatures up to 110°C for onshore and 140°C for offshore applications.

## Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density	900 kg/m <sup>3</sup>	ISO 1183-1, Method A
Melt Flow Rate (230 °C/2,16 kg)	7,5 g/10min	ISO 1133-1, Method B
Tensile Strain at Break (50 mm/min) (23 °C)	>= 400 %	ISO 527-2
Tensile Stress at Yield (50 mm/min) (23 °C)	20 MPa	ISO 527-2
Melting temperature (DSC)	165 °C	ISO 11357-3
Vicat softening temperature A50 (10 N)	145 °C	ISO 306
Charpy Impact Strength, notched (-20 °C)	4 kJ/m <sup>2</sup>	ISO 179/1eA
Moisture <sup>1</sup>	< 300 ppm	ISO 15512
Peel strength (3 layer) (23 °C)	> 250 N/cm	ISO 21809-1
Peel strength (3 layer) (80 °C)	> 100 N/cm	ISO 21809-1
Peel strength (3 layer) (110 °C)	> 60 N/cm	ISO 21809-1
Peel strength (3 layer) (140 °C)	> 30 N/cm	ISO 21809-1

<sup>1</sup> Karl Fischer-titration

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**Polypropylene**

# Borcoat BB127E

## Processing Techniques

The product can be applied by flat die or crosshead extrusion. The actual conditions will depend on the type of equipment used.

### Extrusion

Head	210 - 240 °C
Die	210 - 240 °C
PP outer layer Melt temperature	< 250 °C
Steel pipe temperature	180 - 210 °C

Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Please contact your local Borealis representative for such particulars.

## Packaging

Package: Pellets 25 kg Bags on 1375 kg pallet

## Storage

**Borcoat BB127E** shall be stored indoors below 50°C in unopened original packaging in clean and dry environment. It is recommended to ensure proper stock rotation by using first in – first out principle. Following afore-mentioned conditions the material can be stored for a period of up to 36 months after production. However, caution shall be taken regarding the moisture level. It is recommended to measure the moisture after longer storage periods prior to processing.

## Safety

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the product. For more information, contact your Borealis representative.

## Recycling

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

## Related Documents

For general and grade specific compliance documents please see Borealis' homepage [www.borealisgroup.com](http://www.borealisgroup.com) or ask your Borealis representative.



**Polypropylene**  
**Borcoat BB127E**

**Issuer:**

Product Management / Albin Mariacher  
Marketing Oil & Gas / Thomas Stark

**Disclaimer**

**The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.**

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**It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.**

No liability can be accepted in respect of the use of any Borealis product in conjunction with any other products and/or materials. The information contained herein relates exclusively to our products when not used in conjunction with any other material unless as specifically provided for in the test methods stated above.

**PRODUCT DESCRIPTION**

A solvent free, two component polyclamine cured girth weld coating system utilising advanced epoxy novolac technology.

**INTENDED USES**

Enviroline 124 is a new generation system providing improved performance benefits:

- Abrasion and impact resistance
- Excellent chemical resistance
- Rapid return to service
- Ultra low VOC
- Single coat application

Applications include pit filling and repair of buried steel pipelines, underground and aboveground storage tanks, as a field joint coating and repair material for external fusion bond epoxy pipeline coatings.

Enviroline 124 is also suitable as a single coat, high film thickness, external lining for pipes where high performance and rapid return to service is required.

**PRACTICAL INFORMATION FOR ENVIROLINE 124**

<b>Colour</b>	Green
<b>Gloss Level</b>	Not applicable
<b>Volume Solids</b>	100%
<b>Typical Thickness</b>	1000-2000 microns (40-80 mils) dry equivalent to 1000-2000 microns (40-80 mils) wet
<b>Theoretical Coverage</b>	0.50 m <sup>2</sup> /litre at 2000 microns and stated volume solids 3.81 sq.ft/US quart at 80 mils d.f.t. and stated volume solids
<b>Practical Coverage</b>	Allow appropriate loss factors
<b>Method of Application</b>	Plural Component Airless Spray, Brush, Knife, Trowel

**Drying Time**

<b>Temperature</b>	<b>Touch Dry</b>	<b>Hard Dry</b>	Overcoating Interval with recommended topcoats	
			<i>Minimum</i>	<i>Maximum</i>
25°C (77°F)	40 minutes	3 hours <sup>1</sup>	40 minutes	55 minutes

<sup>1</sup> Sufficient coating film strength has developed to permit the handling and movement of coated steelwork. A Shore D hardness reading of 70-80 is a recommended guideline to indicate suitability for return to service.

See Product Characteristics section for further details

**REGULATORY DATA**

<b>Flash Point (Typical)</b>	Part A 93°C (199°F); Part B 93°C (199°F); Mixed 93°C (199°F)		
<b>Product Weight</b>	1.26 kg/l (10.5 lb/gal)		
<b>VOC</b>	0.08 lb/gal (10 g/lt)	EPA Method 24	

See Product Characteristics section for further details

**SURFACE  
PREPARATION**

All surfaces to be coated should be clean, dry and free from contamination. Prior to application all surfaces should be assessed and treated in accordance with ISO 8504:2000

Where necessary, remove weld spatter and where required smooth weld seams and sharp edges.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

**Steel Substrates**

Best performance will always be achieved when Enviroline 124 is applied to surfaces prepared by abrasive blast cleaning to Sa3 (ISO 8501-1:2007) or SSPC-SP5. A sharp, angular profile of 75-125 microns (3-5 mils) is recommended.

For immersion service the minimum acceptable standard of surface preparation is St3 (ISO 8501-1:2007) or SSPC-SP3; for atmospheric service the minimum standard is St2 (ISO 8501-1:2007) or SSPC-SP2.

**Concrete Substrates**

Refer to International Protective Coatings for specific recommendations.

**APPLICATION**

<b>Mixing</b>	Material is supplied in two containers as a unit. Complete units should be stored, mixed and applied in accordance with the Enviroline Application Guidelines.	
<b>Mix Ratio</b>	2 part(s) : 1 part(s) by volume	
<b>Working Pot Life</b>	25°C (77°F)	40°C (104°F)
	10 minutes	7 minutes
<b>Plural Component Airless Spray</b>	Suitable	Refer to Enviroline Application Guidelines for more details.
<b>Airless Spray</b>	Not suitable	
<b>Brush</b>	Suitable	Refer to Enviroline Application Guidelines for more details.
<b>Trowel</b>	Recommended	Refer to Enviroline Application Guidelines for more details.
<b>Thinner</b>	<b>DO NOT THIN</b>	
<b>Cleaner</b>	Enviroline 71C	
<b>Work Stoppages</b>	Thoroughly clean all equipment with Enviroline 71C. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.	
<b>Clean Up</b>	Clean all equipment immediately after use with Enviroline 71C.  All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.	

**PRODUCT CHARACTERISTICS**

The detailed Enviroline Application Guidelines should be consulted prior to use.

This datasheet provides general guidance on the use of Enviroline 124. Specific project requirements will be dependent upon the service end use and operating conditions of the tank or vessel. Always consult International Protective Coatings to confirm that Enviroline 124 is suitable for contact with the product to be stored.

The detailed project coating specification provided by International Protective Coatings must be followed at all times.

Surface temperature must always be a minimum of 3°C (5°F) above dew point.

Use the following chart for preferred temperature conditions. These conditions plus adequate ventilation must be maintained throughout the curing cycle.

	<u>Coating Temperature</u>	<u>Substrate Temperature</u>	<u>Air Temperature</u>
<b>Preferred</b>	18-41°C (65-105°F)	21-49°C (70-120°F)	21-38°C (70-100°F)
<b>Minimum</b>	18°C (65°F)	-7°C (20°F)	-7°C (20°F)

Maximum continuous dry temperature resistance for Enviroline 124 is 149°C (300°F).

**Alternative Cure**

Two additional versions of Enviroline 124 are available for choice of cure and overcoating properties: Enviroline 124SL (slow cure) and Enviroline 124 Fast (fast cure).

	<u>Temperature</u>	<u>Touch Dry</u>	<u>Hard Dry</u>	<u>Overcoating Interval with recommended topcoats</u>	
				<u>Minimum</u>	<u>Maximum</u>
<b>124SL</b>	25°C (77°F)	1 hour	7 hours	1 hour	2 hours
<b>124 Fast</b>	25°C (77°F)	7 minutes	35 minutes	5 minutes	20 minutes
<u>Working Pot Life</u>	<u>25°C (77°F)</u>	<u>40°C (104°F)</u>			
<b>124SL</b>	25 minutes	10 minutes			
<b>124 Fast</b>	12 minutes	4 minutes			

Enviroline 124 can be used as a holiday repair coating for Enviroline 376F series, Enviroline 125 series and Enviroline 375.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in colour and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

**SYSTEMS COMPATIBILITY**

Enviroline 124 is designed for application to correctly prepared substrates.

For information regarding suitable topcoats for Enviroline 124, please consult International Protective Coatings.



**ADDITIONAL INFORMATION**

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at [www.international-pc.com](http://www.international-pc.com):

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage
- Enviroline Application Guidelines

Individual copies of these information sections are available upon request.

**SAFETY PRECAUTIONS**

This product is intended for use only by professional applicators in industrial situations. All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety and Environmental standards, regulations and legislation.

Proper ventilation must be provided during application and afterwards during curing (refer to product datasheets for typical curing times) to ensure safe limits and prevent fires and explosions. Forced extraction will be required in confined spaces. Ventilation and/or respiratory personal protective equipment (airfed hoods or appropriate cartridge masks) must be provided during application and curing. Take precautions to avoid skin and eye contact (overalls, gloves, goggles, masks, barrier cream, etc).

Before use, obtain, read and then follow the advice given on the Material Safety Data Sheets (Parts A and B if two-pack) and the Health and Safety section of the Coatings Applications Procedures for this product.

In the event that welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

The detailed safety measures are dependent on application methods and the work environment. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product and consult International Protective Coatings.

**Warning: This product contains liquid epoxies and modified polyamines and may cause skin sensitisation if not used correctly.**


PACK SIZE	Unit Size	Part A		Part B	
		Weight	Pack	Weight	Pack
	2 lb	1.25 lb	0.25 US gal	0.75 lb	0.13 US gal
	0.6 litre	0.42 litre	0.95 litre	0.19 litre	0.47 litre
Enviroline 124 is supplied in cases; in the USA, one case contains nine kits. In Europe, the Middle East and Africa, one case contains six kits.					
SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A		Part B	
	0.25 US gal	1.5 lb		0.9 lb	
	0.6 litre	0.68 kg		0.4 kg	
STORAGE	Shelf Life	24 months minimum at 25°C (77°F) in original, unopened containers. Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.			

**Important Note**

*The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.*

*This Technical Data Sheet is available on our website at [www.international-marine.com](http://www.international-marine.com) or [www.international-pc.com](http://www.international-pc.com), and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.*

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[www.envirolinegroup.com](http://www.envirolinegroup.com)

[www.international-pc.com](http://www.international-pc.com)

Conforms to Model Code of Practice - Preparation of Safety Data Sheets for Hazardous Chemicals - Australia

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

#### 1.1 Product identifier

Product name : Hempel's Curing Agent 95870  
Product identity : 9587000000  
Product type : Curing agent

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

Field of application : used only as part of two- or multi component products.  
Identified uses : Industrial applications, Professional applications, Used by spraying.

#### 1.3 Details of the supplier of the safety data sheet

Company details : Hempel (Wattyl) Australia Pty Ltd.  
2-44 Graingers Road  
West Footscray VIC 3012  
Australia  
Tel: (03) 8369 4900  
Email: sales.au@hempel.com  
Date of issue : 17 November 2021  
Date of previous issue : 15 October 2021.

#### 1.4 Emergency telephone number

Emergency telephone number (with hours of operation)  
  
Poisons Information Centre.  
Tel.: 13 11 26 (24 hour)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Product definition : Mixture

##### GHS Classification

FLAMMABLE LIQUIDS - Category 3  
SKIN CORROSION/IRRITATION - Category 1C  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
SKIN SENSITIZATION - Category 1

See Section 11 for more detailed information on health effects and symptoms.

#### 2.2 Label elements

Hazard pictograms :



Signal word : Danger  
Hazard statements : H226 - Flammable liquid and vapor.  
H314 - Causes severe skin burns and eye damage.  
H317 - May cause an allergic skin reaction.

Precautionary statements :

Prevention : Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing vapor.

Response : IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or 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 doctor.

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.

Hazardous ingredients : butan-1-ol  
2,4,6-tris(dimethylaminomethyl)phenol  
bis[(dimethylamino)methyl]phenol

### SECTION 2: Hazards identification

#### 2.3 Other hazards

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

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Product/ingredient name	Identifiers	%	GHS Classification
butan-1-ol	71-36-3	≥10 - <20	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) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
2,4,6-tris(dimethylaminomethyl) phenol	90-72-2	≥5 - ≤10	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
xylene	1330-20-7	≥5 - ≤10	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
benzyl alcohol	100-51-6	≥1 - ≤3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
bis[(dimethylamino)methyl]phenol	71074-89-0	≥1 - ≤3	SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1B
ethylbenzene	100-41-4	≥1 - ≤3	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ethylenediamine	107-15-3	<1	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 RESPIRATORY SENSITIZATION - Category 1B
m-Xylylene-diamine	1477-55-0	≤0.3	SKIN SENSITIZATION - Category 1 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1B

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

#### 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 112 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.

### SECTION 4: First aid measures

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.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### Potential acute health effects

Eye contact : Causes serious eye damage.  
Inhalation : No known significant effects or critical hazards.  
Skin contact : Causes severe burns. May cause an allergic skin reaction.  
Ingestion : No known significant effects or critical hazards.

##### 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

#### 4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. 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

Extinguishing media : Recommended: alcohol resistant foam, CO<sub>2</sub>, 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. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.  
Hazardous combustion products : Decomposition products may include the following materials: carbon oxides nitrogen 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. 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.

Hazchem code : 3Y 2X

### 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

**SECTION 6: Accidental release measures**

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).

**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**

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.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

Product/ingredient name	Exposure limit values
Butan-1-ol	<b>Safe Work Australia (Australia, 12/2019). Absorbed through skin.</b> PEAK: 50 ppm PEAK: 152 mg/m <sup>3</sup>
xylene	<b>Safe Work Australia (Australia, 12/2019).</b> STEL: 655 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 350 mg/m <sup>3</sup> 8 hours. TWA: 80 ppm 8 hours.
benzyl alcohol	<b>DFG MAC-values list (Germany, 8/2020). Absorbed through skin.</b> PEAK: 44 mg/m <sup>3</sup> , 4 times per shift, 15 minutes. PEAK: 10 ppm, 4 times per shift, 15 minutes. TWA: 22 mg/m <sup>3</sup> 8 hours. TWA: 5 ppm 8 hours.
ethylbenzene	<b>Safe Work Australia (Australia, 12/2019).</b> STEL: 543 mg/m <sup>3</sup> 15 minutes. STEL: 125 ppm 15 minutes. TWA: 434 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.

**Recommended monitoring procedures**

### SECTION 8: Exposure controls/personal protection

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.

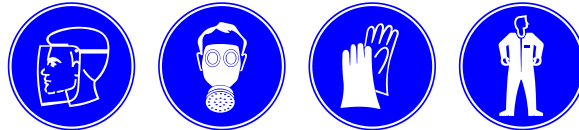
#### 8.2 Exposure controls

##### Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.

##### 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection : Wear chemical-resistant gloves (tested to EN374) 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 / Barrier / 4H gloves, polyvinyl alcohol (PVA), Viton®  
May be used: nitrile rubber, neoprene rubber, butyl rubber  
Short term exposure: 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 : 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. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. When the product is applied by spraying and for continuous or prolonged work always wear an air-fed respirator e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter. Be sure to use an approved/certified respirator or equivalent.

##### 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.
Color :	Clear.
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: 47°C (116.6°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.
Lower and upper explosive (flammable) limits :	0.8 - 13 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.
Specific gravity :	0.968 g/cm <sup>3</sup>
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 :	Lowest known value: 355°C (671°F) (butan-1-ol).
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 :	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 :	Weighted average: 22 %
Water % by weight :	Weighted average: 0 %
VOC content :	194.4 g/l
TOC Content :	Weighted average: 141 g/l
Solvent Gas :	Weighted average: 0.061 m <sup>3</sup> /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:

### SECTION 10: Stability and reactivity

Decomposition products may include the following materials: carbon oxides nitrogen 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.

Direct contact with the eyes can cause irreversible damage, including blindness.

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butan-1-ol	LC50 Inhalation Vapor	Rat	24000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
2,4,6-tris(dimethylaminomethyl) phenol	LD50 Dermal	Rabbit	1465 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-
xylene	LD50 Oral	Rat	2169 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6350 ppm	4 hours
	LD50 Dermal	Rabbit	>4200 mg/kg	-
benzyl alcohol	LD50 Oral	Rat	3523 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m <sup>3</sup>	4 hours
ethylbenzene	LD50 Oral	Rat	1230 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
ethylenediamine	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapor	Rat	14.7 mg/l	4 hours
m-Xylylene-diamine	LD50 Dermal	Rabbit	730 mg/kg	-
	LD50 Oral	Rat	866 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	1.34 mg/l	4 hours
	LD50 Dermal	Rabbit	>3100 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-

#### Acute toxicity estimates

Route	ATE value
Oral	4415.43 mg/kg
Dermal	19800.18 mg/kg
Inhalation (gases)	106251 ppm
Inhalation (vapors)	376.48 mg/l

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
butan-1-ol	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams
2,4,6-tris(dimethylaminomethyl) phenol	Eyes - Severe irritant	Rabbit	-	24 hours 50 Micrograms
	Skin - Severe irritant	Rabbit	-	24 hours 2 milligrams
xylene	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
	Skin - Irritant	Rabbit	-	-
benzyl alcohol	Eyes - Visible necrosis	Rabbit	-	-
	Skin - Mild irritant	Rabbit	-	-
ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams
	Respiratory - Mild irritant	Rabbit	-	-
ethylenediamine	Eyes - Mild irritant	Rabbit	-	-
	Eyes - Severe irritant	Rabbit	-	24 hours 750 Micrograms
m-Xylylene-diamine	Skin - Severe irritant	Rabbit	-	24 hours 10 milligrams
	Eyes - Severe irritant	Rabbit	-	24 hours 50 Micrograms
	Skin - Severe irritant	Rabbit	-	24 hours 750 Micrograms
	Respiratory - Severe irritant	Rabbit	-	-

#### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
butan-1-ol	Category 3 Category 3		Respiratory tract irritation Narcotic effects



### SECTION 11: Toxicological information

#### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs

#### 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 ethylenediamine, m-Xylylene-diamine. 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.

Product/ingredient name	Result	Species	Exposure
butan-1-ol	Acute EC50 1328 mg/l	Daphnia	96 hours
	Acute LC50 1.376 mg/l	Fish	96 hours
2,4,6-tris(dimethylaminomethyl) phenol	Acute EC50 84 mg/l	Algae	72 hours
	Acute LC50 175 mg/l	Fish	96 hours
benzyl alcohol	Acute EC50 230 mg/l	Daphnia	48 hours
	Acute IC50 770 mg/l	Algae	72 hours
	Acute LC50 460 mg/l	Fish	96 hours
ethylbenzene	Chronic NOEC <1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
ethylenediamine	Chronic NOEC 160 µg/l Fresh water	Daphnia - Daphnia magna	21 days
m-Xylylene-diamine	Acute EC50 20.3 mg/l	Algae	72 hours
	Acute EC50 15.2 mg/l	Daphnia - Daphnia	48 hours
	Acute LC50 87.6 mg/l	Fish - Leuciscus idus	96 hours
	Acute NOEC 4.7 mg/l	Daphnia	21 days

#### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
butan-1-ol	OECD 301D Ready	92 % - 20 days	-	-
	Biodegradability - Closed Bottle Test			
2,4,6-tris(dimethylaminomethyl) phenol	OECD 301D 301D Ready	4 % - Not readily - 28 days	-	-
	Biodegradability - Closed Bottle Test			
xylene	OECD 301F Ready	90 - 98 % - Readily - 28 days	-	-
	Biodegradability - Manometric Respirometry Test			
	-	>60 % - Readily - 28 days	-	-
benzyl alcohol	OECD 301A 301A Ready	95 - 97 % - Readily - 21 days	-	-
	Biodegradability - DOC Die-Away Test			
	OECD 301C 301C Ready	92 - 96 % - Readily - 14 days	-	-
	Biodegradability - Modified MITI Test (I)			
ethylbenzene	-	>70 % - Readily - 28 days	-	-
m-Xylylene-diamine	OECD 301B 301B Ready	49 % - Inherent - 28 days	-	-
	Biodegradability - CO <sub>2</sub> Evolution Test			

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
butan-1-ol	-	-	Readily
2,4,6-tris(dimethylaminomethyl) phenol	-	-	Not readily
xylene	-	-	Readily
benzyl alcohol	-	-	Readily
ethylbenzene	-	-	Readily
m-Xylylene-diamine	-	-	Inherent

### SECTION 12: Ecological information

#### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
butan-1-ol	1	3.16	low
2,4,6-tris(dimethylaminomethyl)phenol	0.219	-	low
xylene	3.12	8.1 - 25.9	low
benzyl alcohol	0.87	1.37	low
ethylbenzene	3.6	-	low
ethylenediamine	-7.02	-	low
m-Xylylene-diamine	0.18	2.69	low

#### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>): No known data available in our database.

Mobility: No known data available in our database.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods







The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

#### Packaging

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

### SECTION 14: Transport information

Transport may take place according to national regulation or ADG for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env* Additional information
<b>ADG Class</b>	UN3469	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	3 8  	III	No. <u>Hazchem code</u> 3Y 2X
<b>IMDG Class</b>	UN3469	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	3 8  	III	No. <u>Emergency schedules</u> F-E, S-C
<b>IATA Class</b>	UN3469	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	3 8  	III	No. -

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 IMO instruments

Not applicable.

### SECTION 15: Regulatory information

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

Standard for the Uniform Scheduling of Medicines and Poisons : Not regulated.

### SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
DNEL = Derived No Effect Level  
PNEC = Predicted No Effect Concentration  
RRN = REACH Registration Number

#### GHS Classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1	On basis of test data Calculation method Calculation method Calculation method

#### Notice to reader

✔ Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

### 87831: BASE 87838: CURING AGENT 95830

<b>Description:</b>	HEMPEL'S HS GAS PIPE COATING 87831 is a two-component epoxy polyamine cured coating. Formulated according to the requirements in AMERICAN PETROLEUM INSTITUTE'S STANDARD RP 5L2.
<b>Recommended use:</b>	As a one-coat system for internal coating of gas pipes designed for carrying of dry, sweet gas. The coating is designed to reduce the drag resistance in the pipeline by making the pipe walls smoother.
<b>Availability:</b>	Part of Group Assortment. Local availability subject to confirmation.
<b>PHYSICAL CONSTANTS:</b>	
Shade nos/Colours:	50890* / Reddish brown
Finish:	Glossy
Volume solids, %:	82 ± 1
Theoretical spreading rate:	11.7 m <sup>2</sup> /l [469.2 sq.ft./US gallon] - 70 micron/2.8 mils
Flash point:	28 °C [82.4 °F]
Specific gravity:	1.4 kg/litre [11.7 lbs/US gallon]
Dry to touch:	4.5 hour(s) , 20°C/68°F 2 hour(s) , 30°C/86°F 1 hour, 40°C/105°F
Fully cured:	7 day(s) , 20°C/68°F 4 day(s) , 30°C/86°F 2 day(s) , 40°C/105°F
VOC content:	155 g/l [1.3 lbs/US gallon]
Shelf life:	12 months for BASE and 3 years for CURING AGENT (stored in closed container) , 25°C/77°F. 6 months for BASE and 1.5 years for CURING AGENT (stored in closed container) , 35°C/95°F. Mechanical stirring may be necessary before usage. Shelf life is dependent on storage temperature. Shelf life is reduced at storage temperatures above: 25°C/77°F. Do not store above the following temperature: 40°C/105°F. <i>*other shades according to assortment list.</i>

*The physical constants stated are nominal data according to the HEMPEL Group's approved formulas.*

### APPLICATION DETAILS:

<b>Version, mixed product:</b>	<b>87831</b>
Mixing ratio:	BASE 87838: CURING AGENT 95830 4 : 1 by volume 6 : 1 by weight (Mixing tolerance 5%)
Application method:	Dual-feed, hot airless spray equipment. (see REMARKS overleaf)
Thinner (max.vol.):	No thinning
Pot life:	60 minute(s) , 20°C/68°F 9 minute(s) , 60°C/140°F
Nozzle orifice:	0.017 - 0.027 "
Nozzle pressure:	Minimum: 150 bar [2175 psi] (Airless spray data are indicative and subject to adjustment)
Cleaning of tools:	HEMPEL'S THINNER 08450
Indicated film thickness, dry:	70 micron [2.8 mils]
Indicated film thickness, wet:	100 micron [4 mils]
Overcoat interval, min:	According to specification.
Overcoat interval, max:	According to specification.

**Safety:** Handle with care. Before and during use, observe all safety labels on packaging and paint containers, consult HEMPEL Safety Data Sheets and follow all local or national safety regulations.

# Product Data

## HEMPEL'S HS GAS PIPE COATING 87831



SURFACE PREPARATION:	Remove oil and grease etc. thoroughly with suitable detergent. Remove salts and other contaminants by high pressure fresh water cleaning. Abrasive blasting to Sa 2½ (ISO 8501-1) with a surface profile of Rz (ISO 4288) 25 – 50 µm/1 – 2 mils corresponding to ISO Comparator Fine (G), Keane-Tator Comparator 2S or 2.0 G/S or Rugotest No.3 BN 8-9a.
APPLICATION CONDITIONS:	Use only where application and curing can proceed at temperatures above: 10°C/50°F. In order to prevent gloss reduction, initial curing must take place at temperatures above: 20°C/68°F. Apply only on a dry and clean surface with a temperature above the dew point to avoid condensation. Maximum relative humidity: 85%. In confined spaces provide adequate ventilation during application and drying.
SUBSEQUENT COAT:	None.
REMARKS:	
Application equipment:	Application by dual feed hot airless spray equipment is recommended. Atomization and film formation may be improved by preheating the Curing Agent and the Base in heating caps up to: maximum 60°C/140°F. The optimum temperature will depend on the intended DFT, the nozzle size and the spraying pressure. See separate APPLICATION INSTRUCTIONS. Note the short pot life at 60°C/140°F: approximately 9 minutes.
Overcoating note:	Overcoating will normally only apply in connection with touch-up.
Note:	<b>HEMPEL'S HS GAS PIPE COATING 87831 For professional use only.</b>
ISSUED BY:	HEMPEL A/S

8783150890

This Product Data Sheet supersedes those previously issued.

For explanations, definitions and scope, see "Explanatory Notes" available on [www.hempel.com](http://www.hempel.com). Data, specifications, directions and recommendations given in this data sheet represent only test results or experience obtained under controlled or specially defined circumstances. Their accuracy, completeness or appropriateness under the actual conditions of any intended use of the Products herein must be determined exclusively by the Buyer and/or User.

The Products are supplied and all technical assistance is given subject to HEMPEL's GENERAL CONDITIONS OF SALES, DELIVERY AND SERVICE, unless otherwise expressly agreed in writing. The Manufacturer and Seller disclaim, and Buyer and/or User waive all claims involving, any liability, including but not limited to negligence, except as expressed in said GENERAL CONDITIONS for all results, injury or direct or consequential losses or damages arising from the use of the Products as recommended above, on the overleaf or otherwise. Product data are subject to change without notice and become void five years from the date of issue.

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830 - Europe

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

#### 1.1 Product identifier

Product name : HEMPEL'S HS GAS PIPE COATING 87838  
Product identity : 8783850890  
Product type : epoxy paint (base for 2-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 : 87838 4 Li / 95830 1 Li  
Identified uses : Industrial applications, Used by spraying.

#### 1.3 Details of the supplier of the safety data sheet

Company details : HEMPEL A/S  
Lundtoftegårdsvej 91  
DK-2800 Kgs. Lyngby  
Denmark  
Tel.: + 45 45 93 38 00  
hempel@hempel.com  
Date of issue : 16 June 2017  
Date of previous issue : 13 January 2017.

#### 1.4 Emergency telephone number

Emergency telephone number (with hours of operation)  
  
+45 45 93 38 00 (08.00 - 17.00)  
See section 4 First aid measures.

### 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]

Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3  
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2  
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1  
Aquatic Chronic 2, H411 AQUATIC HAZARD (LONG-TERM) - Category 2

See Section 11 for more detailed information on health effects and symptoms.

#### 2.2 Label elements

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.  
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention : Avoid breathing vapors, spray or mists. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical attention.

Storage : Keep cool.

Hazardous ingredients : Bisphenol A-(epichlorhydrin) epoxy resin MW =< 700  
middle molecular epoxy resin MMW 700-1200  
cashew, nutshell liq., polymer with epichlorohydrin

Supplemental label elements : Contains epoxy constituents. May produce an allergic reaction.

#### Special packaging requirements

### SECTION 2: Hazards identification

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

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
 Bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	REACH #: 01-2119456619-26 EC: 500-033-5 CAS: 25068-38-6 Index: 603-074-00-8	≥25 - ≤50	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411	- [1]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥5 - ≤10	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411	C [1] [2]
middle molecular epoxy resin MMW 700-1200	EC: 500-033-5 CAS: 25068-38-6 Index: 603-074-00-8	≥5 - ≤10	Skin Irrit. 2, H315 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411	- [1]
cashew, nutshell liq., polymer with epichlorohydrin	EC: 500-210-7 CAS: 68413-24-1	≥3 - ≤5	Skin Sens. 1, H317	- [1]
n-butanol	REACH #: 01-2119484630-38 EC: 200-751-6 CAS: 71-36-3 Index: 603-004-00-6	≥1 - <3	Flam. Liq. 3, H226 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	- [1]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≥1 - ≤3	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 See Section 16 for the full text of the H statements declared above.	- [1] [2]

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

-  Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit, see section 8.
- [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
- [6] Additional disclosure due to company policy

### 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 112 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 unconscious, place in recovery position and seek medical advice.
- 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.

### SECTION 4: First aid measures

#### 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 :	No known significant effects or critical hazards.

##### 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 :	No specific treatment.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

Extinguishing media :	Recommended: alcohol resistant foam, CO <sub>2</sub> , powders, water spray. Not to be used: waterjet.
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#### 5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	 Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. 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 combustion products :	Decomposition products may include the following materials: carbon 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. 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

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



**SECTION 6: Accidental release measures**

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.

**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.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

Product/ingredient name	Exposure limit values
xylene	<b>EU OEL (Europe, 12/2009). Absorbed through skin.</b> TWA: 50 ppm 8 hours. TWA: 221 mg/m <sup>3</sup> 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m <sup>3</sup> 15 minutes.
ethylbenzene	<b>EU OEL (Europe, 12/2009). Absorbed through skin.</b> STEL: 884 mg/m <sup>3</sup> 15 minutes. STEL: 200 ppm 15 minutes. TWA: 442 mg/m <sup>3</sup> 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 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 DNELs/DMELs available.

**Predicted effect concentrations**

No PNECs available.

**8.2 Exposure controls**

### SECTION 8: Exposure controls/personal protection

#### Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

#### 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 (tested to EN374) 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

Short term exposure: 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 : 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. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use an approved/certified respirator or equivalent.

#### 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 :	-16°C This is based on data for the following ingredient: bisphenol A-(epichlorhydrin) epoxy resin MW = < 700
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 28°C (82.4°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.
Lower and upper explosive (flammable) limits :	0.8 - 11.3 vol %
Vapor pressure :	☑ kPa This is based on data for the following ingredient: bisphenol A-(epichlorhydrin) epoxy resin MW = < 700
Vapor density :	Testing not relevant or not possible due to nature of the product.
Relative density :	1.501 g/cm <sup>3</sup>

### SECTION 9: Physical and chemical properties

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 :	Lowest known value: 355°C (671°F) (n-butanol).
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Aspiration hazard (H304) Not classified. Testing not relevant due to nature of the product.
Explosive properties :	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 :	Weighted average: 13 %
Water % by weight :	Weighted average: 0 %
VOC content :	194.1 g/l
VOC content, Ready-for-use mixture :	155 g/l
TOC Content :	Weighted average: 165 g/l
Solvent Gas :	Weighted average: 0.049 m <sup>3</sup> /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 and acids.  
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 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

**SECTION 11: Toxicological information**

Product/ingredient name	Result	Species	Dose	Exposure
Bisphenol A-(epichlorhydrin) epoxy resin MW =< 700  xylene  middle molecular epoxy resin MMW 700-1200 n-butanol  ethylbenzene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6350 ppm	4 hours
	LD50 Dermal	Rabbit	>4200 mg/kg	-
	LD50 Oral	Rat	3523 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LC50 Inhalation Vapor	Rat	24000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
LD50 Oral	Rat	790 mg/kg	-	
LD50 Dermal	Rabbit	>5000 mg/kg	-	
LD50 Oral	Rat	3500 mg/kg	-	

**Acute toxicity estimates**

Route	ATE value
Oral Dermal Inhalation (gases) Inhalation (vapors)	31669.1 mg/kg 13326.1 mg/kg 48651.4 ppm 604.2 mg/l

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure
Bisphenol A-(epichlorhydrin) epoxy resin MW =< 700  xylene  n-butanol  ethylbenzene	Eyes - Mild irritant	Rabbit	-	-
	Skin - Mild irritant	Rabbit	-	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams
	Respiratory - Mild irritant	Rabbit	-	-
	Eyes - Mild irritant	Rabbit	-	-

**Sensitizer**

Product/ingredient name	Route of exposure	Species	Result
Bisphenol A-(epichlorhydrin) epoxy resin MW =< 700 middle molecular epoxy resin MMW 700-1200	skin	Guinea pig	Sensitizing
	skin	Guinea pig	Sensitizing

**Mutagenic effects**

No known significant effects or critical hazards.

**Carcinogenicity**

No known significant effects or critical hazards.

**Reproductive toxicity**

No known significant effects or critical hazards.

**Teratogenic effects**

No known significant effects or critical hazards.

**Specific target organ toxicity (single exposure)**

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	hearing organs

**Aspiration hazard**

**SECTION 11: Toxicological information**

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, cashew, nutshell liq., polymer with epichlorohydrin. 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. Toxic to aquatic life with long lasting effects.

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 Acute LC50 3.1 mg/l	Daphnia - Daphnia magna Fish - fathead minnow (Pimephales promelas)	48 hours 96 hours
middle molecular epoxy resin MMW 700-1200	Acute EC50 >100 mg/l	Daphnia	48 hours
n-butanol	Acute LC50 >100 mg/l Acute EC50 1328 mg/l Acute LC50 1.376 mg/l	Fish Daphnia Fish	96 hours 96 hours 96 hours
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
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	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Bisphenol A-(epichlorhydrin) epoxy resin MW =< 700	-	-	Not readily
xylene	-	-	Readily
n-butanol	-	-	Readily
ethylbenzene	-	-	Readily

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	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

**12.4 Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>) : No known data available in our database.

Mobility : No known data available in our database.

**12.5 Results of PBT and vPvB assessment**

PBT : Not applicable.

vPvB : Not applicable.

### SECTION 12: Ecological information

#### 12.6 Other adverse effects

No known significant effects or critical hazards.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

European waste catalogue no. (EWC) is given below.






European waste catalogue (EWC) : 08 01 11\*

#### Packaging

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

### SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
<b>ADR/RID Class</b>	UN1263	PAINT	3  	III	Yes.	<input checked="" type="checkbox"/> The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Tunnel code</b> (D/E)
<b>IMDG Class</b>	UN1263	PAINT. (bisphenol A-(epichlorhydrin) epoxy resin MW =< 700)	3  	III	Yes.	<input checked="" type="checkbox"/> The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Emergency schedules</b> F-E, S-E
<b>IATA Class</b>	UN1263	PAINT	3 	III	<input checked="" type="checkbox"/> Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

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 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) Annex XIV - List of substances subject to authorization - Substances of very high concern

##### 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

##### Seveso category

This product is controlled under the Seveso III Directive.

### SECTION 15: Regulatory information

#### Seveso category

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b  
 E2: Hazardous to the aquatic environment - Chronic 2  
 6: Flammable (R10)  
 9ii: Toxic for the environment

### 15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

### SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 EUH statement = CLP-specific Hazard statement  
 RRN = REACH Registration Number  
 DNEL = Derived No Effect Level  
 PNEC = Predicted No Effect Concentration

Full text of abbreviated H statements :

H225 Highly flammable liquid and vapor.  
 H226 Flammable liquid and vapor.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful in contact with skin.  
 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.  
 H335 May cause respiratory irritation.  
 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.

Full text of classifications [CLP/GHS] :

Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4  
 Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4  
 Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4  
 Aquatic Chronic 2, H411 AQUATIC HAZARD (LONG-TERM) - Category 2  
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1  
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2  
 Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3  
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2  
 Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1  
 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
 STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

#### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2	On basis of test data Calculation method Calculation method Calculation method Calculation method

#### Notice to reader

Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

Conforms to Model Code of Practice - Preparation of Safety Data Sheets for Hazardous Chemicals - Australia

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

#### 1.1 Product identifier

Product name : Hempel's Thinner 08450  
Product identity : 0845000000  
Product type : thinner

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

Field of application : yacht, ships and shipyards. buildings and metal industry.  
Identified uses : Consumer applications, Industrial applications, Professional applications.

#### 1.3 Details of the supplier of the safety data sheet

Company details : Hempel (Wattyl) Australia Pty Ltd.  
2-44 Graingers Road  
West Footscray VIC 3012  
Australia  
Tel: (03) 8369 4900  
Email: sales.au@hempel.com  
Date of issue : 17 November 2021  
Date of previous issue : 15 October 2021.

#### 1.4 Emergency telephone number

Emergency telephone number (with hours of operation)  
  
Poisons Information Centre.  
Tel.: 13 11 26 (24 hour)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Product definition : Mixture

##### GHS Classification

FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (dermal) - Category 4  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN CORROSION/IRRITATION - Category 2  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
ASPIRATION HAZARD - Category 1

See Section 11 for more detailed information on health effects and symptoms.

#### 2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 - Flammable liquid and vapor.  
H304 - May be fatal if swallowed and enters airways.  
H312 + H332 - Harmful in contact with skin or if inhaled.  
H315 - Causes skin irritation.  
H318 - Causes serious eye damage.  
H335 - May cause respiratory irritation.  
H336 - May cause drowsiness or dizziness.  
H373 - May cause damage to organs through prolonged or repeated exposure. (hearing organs)

Precautionary statements :

General : Keep out of reach of children. If medical advice is needed, have product container or label at hand.  
Prevention : Wear protective gloves and protective clothing. 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 or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Do not breathe vapor, mist or spray. Wash thoroughly after handling.



### SECTION 2: Hazards identification

Response :	IF INHALED: Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Call a POISON CENTER or 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. Immediately call a POISON CENTER or doctor.
Storage :	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal :	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients :	xylene butan-1-ol ethylbenzene Solvent naphtha (petroleum), light arom.

#### 2.3 Other hazards

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

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Product/ingredient name	Identifiers	%	GHS Classification
xylene	1330-20-7	≥50 - ≤75	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
butan-1-ol	71-36-3	≥10 - ≤25	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) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ethylbenzene	100-41-4	≥10 - ≤19	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Solvent naphtha (petroleum), light arom.	64742-95-6	≥3 - ≤5	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
1,2,4-trimethylbenzene	95-63-6	≥3 - ≤4.9	ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2 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
toluene	108-88-3	<1	AQUATIC HAZARD (LONG-TERM) - Category 2 FLAMMABLE LIQUIDS - Category 2 SKIN CORROSION/IRRITATION - Category 2 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 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.

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

### 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 112 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 5 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. 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.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### Potential acute health effects

Eye contact :	Causes serious eye damage.
Inhalation :	Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
Skin contact :	Harmful in contact with skin. Causes skin irritation.
Ingestion :	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

##### Over-exposure signs/symptoms

Eye contact :	Adverse symptoms may include the following: pain watering redness
Inhalation :	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact :	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion :	Adverse symptoms may include the following: stomach pains nausea or vomiting

#### 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

Extinguishing media : Recommended: alcohol resistant foam, CO<sub>2</sub>, 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. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. 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

### 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. 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.

Hazchem code : 3Y

## 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

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)

### SECTION 7: Handling and storage

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Product/ingredient name	Exposure limit values
xylene	<b>Safe Work Australia (Australia, 12/2019).</b> STEL: 655 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 350 mg/m <sup>3</sup> 8 hours. TWA: 80 ppm 8 hours.
butan-1-ol	<b>Safe Work Australia (Australia, 12/2019). Absorbed through skin.</b> PEAK: 50 ppm PEAK: 152 mg/m <sup>3</sup>
ethylbenzene	<b>Safe Work Australia (Australia, 12/2019).</b> STEL: 543 mg/m <sup>3</sup> 15 minutes. STEL: 125 ppm 15 minutes. TWA: 434 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
Solvent naphtha (petroleum), light arom.	<b>ACGIH TLV (United States).</b> TWA Tentative: 25 ppm 8 hours.
1,2,4-trimethylbenzene	<b>Safe Work Australia (Australia, 12/2019).</b> TWA: 123 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours.
1,2,3-trimethylbenzene	<b>Safe Work Australia (Australia, 12/2019).</b> TWA: 123 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours.
toluene	<b>Safe Work Australia (Australia, 12/2019). Absorbed through skin.</b> STEL: 574 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 191 mg/m <sup>3</sup> 8 hours. TWA: 50 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 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.

#### 8.2 Exposure controls

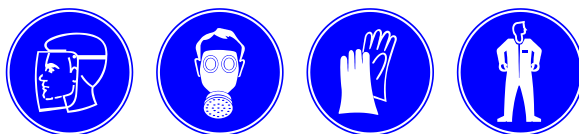
##### Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.

##### 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

### SECTION 8: Exposure controls/personal protection

Hand protection :	<p>Wear chemical-resistant gloves (tested to EN374) 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.</p> <p>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:</p> <p>Recommended: Silver Shield / Barrier / 4H gloves, polyvinyl alcohol (PVA), Viton® May be used: nitrile rubber Short term exposure: neoprene rubber, butyl rubber, natural rubber (latex), polyvinyl chloride (PVC)</p>
Body protection :	Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.
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. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use an approved/certified respirator or equivalent.

### 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.
Color :	Clear.
Odor :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	-94.96°C This is based on data for the following ingredient: xylene
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 25°C (77°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.
Lower and upper explosive (flammable) limits :	0.8 - 11.3 vol %
Vapor pressure :	0.893 kPa This is based on data for the following ingredient: xylene
Vapor density :	Testing not relevant or not possible due to nature of the product.
Specific gravity :	0.857 g/cm <sup>3</sup>
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 :	Lowest known value: 355°C (671°F) (butan-1-ol).
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	<7 x 10 <sup>-6</sup> m <sup>2</sup> /s Kinematic viscosity at 40°C
Explosive properties :	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 :	Weighted average: 100 %
Water % by weight :	Weighted average: 0 %
VOC content :	856.8 g/l
TOC Content :	Weighted average: 720 g/l
Solvent Gas :	Weighted average: 0.209 m <sup>3</sup> /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

**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.

Aspiration hazard if swallowed. Can enter lungs and cause damage.  
 Direct contact with the eyes can cause irreversible damage, including blindness.

**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 Dermal	Rabbit	>4200 mg/kg	-
butan-1-ol	LD50 Oral	Rat	3523 mg/kg	-
	LC50 Inhalation Vapor	Rat	24000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
ethylbenzene	LD50 Oral	Rat	790 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
solvent naphtha (petroleum), light arom.	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapor	Rat	6193 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	3160 mg/kg	-
toluene	LD50 Oral	Rat	8400 mg/kg	-
	LC50 Inhalation Vapor	Rat	>20 mg/l	4 hours
	LD50 Oral	Rat	636 mg/kg	-

**Acute toxicity estimates**

Route	ATE value
Oral	3953.95 mg/kg
Dermal	1942.41 mg/kg
Inhalation (gases)	8829.13 ppm
Inhalation (vapors)	87.3 mg/l

**Irritation/Corrosion**

## SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure
xylene	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
	Skin - Irritant	Rabbit	-	-
butan-1-ol	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	-	-
solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 microliters
	Eyes - Mild irritant	Rabbit	-	-
toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
butan-1-ol	Category 3		Respiratory tract irritation
Solvent naphtha (petroleum), light arom.	Category 3		Narcotic effects
	Category 3		Respiratory tract irritation
1,2,4-trimethylbenzene	Category 3		Narcotic effects
	Category 3		Respiratory tract irritation
toluene	Category 3		Narcotic effects

### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs
toluene	Category 2	-	-

### Aspiration hazard

Product/ingredient name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1
toluene	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. Harmful to aquatic life with long lasting effects.

Product/ingredient name	Result	Species	Exposure
butan-1-ol	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
	Acute EC50 19 mg/l	Algae - Pseudokirchneriella subcapitata (green algae)	96 hours
solvent naphtha (petroleum), light arom.	Acute EC50 6.14 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.22 mg/l	Fish - Oncorhynchus mykiss (rainbow trout)	96 hours
toluene	Chronic NOEC <500000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days

### 12.2 Persistence and degradability

**SECTION 12: Ecological information**

Product/ingredient name	Test	Result	Dose	Inoculum
xylylene	OECD 301F Ready Biodegradability - Manometric Respirometry Test	90 - 98 % - Readily - 28 days	-	-
butan-1-ol	-	>60 % - Readily - 28 days	-	-
ethylbenzene	OECD 301D Ready Biodegradability - Closed Bottle Test	92 % - 20 days	-	-
solvent naphtha (petroleum), light arom.	-	>70 % - Readily - 28 days	-	-
toluene	-	>70 % - Readily - 28 days	-	-
		100 % - Readily - 14 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylylene	-	-	Readily
butan-1-ol	-	-	Readily
ethylbenzene	-	-	Readily
solvent naphtha (petroleum), light arom.	-	-	Readily
toluene	-	-	Readily

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
xylylene	3.12	8.1 - 25.9	low
butan-1-ol	1	3.16	low
ethylbenzene	3.6	-	low
solvent naphtha (petroleum), light arom.	-	10 - 2500	high
toluene	2.73	90	low

**12.4 Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>) : No known data available in our database.

Mobility : No known data available in our database.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**




The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

**Packaging**

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**SECTION 14: Transport information**

Transport may take place according to national regulation or ADG for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env* Additional information
<b>ADG Class</b>	UN1263	PAINT RELATED MATERIAL	3 	III	No. <u>Hazchem code</u> 3Y
<b>IMDG Class</b>	UN1263	PAINT RELATED MATERIAL	3 	III	No. <u>Emergency schedules</u> F-E, S-E
<b>IATA Class</b>	UN1263	PAINT RELATED MATERIAL	3 	III	No. -

PG\* : Packing group

Env.\* : Environmental hazards



### SECTION 14: Transport information

#### 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 IMO instruments

Not applicable.

### SECTION 15: Regulatory information

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

Standard for the Uniform Scheduling of Medicines and Poisons : 5

### SECTION 16: Other information

Abbreviations and acronyms :  
 ATE = Acute Toxicity Estimate  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 DNEL = Derived No Effect Level  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

#### GHS Classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
ACUTE TOXICITY (dermal) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

#### Notice to reader

📌 Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

# Safety Data Sheet

## 1. IDENTIFICATION

Trade Name (Product Identifier): TASETO SILVER


Supplier's Name: TASETO Co., Ltd. Chemical Department  
 Address : 100-1, Miyamae, Fujisawa, Kanagawa prefecture, JAPAN 251-0014  
 Telephone No. : 0081-466-29-5638  
 Products Use: Groove face anticorrosive agents  
 Package: Aerosol, 4Lcan, 18Lcan

## 2. HAZARDS IDENTIFICATION

GHS classification

Physical Hazards:	Aerosols	: Category 1
	Flammable liquids	: Category 2
*Except the above physical hazards, classification results is not applicable or classification not possible.		
Health Hazards:	Acute toxicity (Oral)	: Not classified
	Acute toxicity (Dermal)	: Category 5
	Acute toxicity (inhalation: Gas)	: Not applicable
	Acute toxicity (inhalation: Vapor)	: Category 4
	Acute toxicity (inhalation: Dust ) (inhalation: mist)	: Classification not possible : Classification not possible
	Skin corrosion/irritation	: Category 2
	Serious eye damage/eye irritation	: Category 2
	Respiratory sensitization	: Classification not possible
	Skin sensitization	: Category 1
	Germ cell mutagenicity	: Classification not possible
	Carcinogenicity	: Category 2
	Toxic to reproduction	: Category 1A
	Specific target organ toxicity-Single exposure	: Category 1, Category 3
	Specific target organ toxicity-Repeated exposure	: Category 1
Aspiration hazard	: Category 1	
Environmental Hazards:	Acute hazards to the aquatic environment	: Category 2
	Long-term hazards to the aquatic environment	: Category 2
	Hazards to the ozone layer	: Not classified

GHS label elements

Hazard pictograms:		
Signal word:	Danger	
Hazard statements:	Extremely flammable aerosol      Pressurized container: may burst if heated Highly flammable liquid and vapour May be harmful in contact with skin(Dermal)      Harmful if inhaled (Vapour) Causes skin irritation      Causes serious eye irritation May cause an allergic skin reaction      Suspected of causing cancer May damage fertility or the unborn child Causes damage to organs (nervous system, respiratory system, blood, kidneys, liver, visual organs, systemic toxicity) May cause respiratory irritation / May cause drowsiness or dizziness Cause damage to organs (nervous system, respiratory system, visual organs, blood, kidneys, liver, eye, nose) through prolonged or repeated exposure May be fatal if swallowed and enters airways Toxic to aquatic life      Toxic to aquatic life with long lasting effects	

Precautionary statements:	<p>Do not handle until all safety precautions have been read and understood.</p> <p>Do not breathe dust, mist and vapor.</p> <p>Do not get in eyes, on skin, or on clothing.</p> <p>Wash hand thoroughly after handling.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Use only outdoors or in a well-ventilated area.</p> <p>In case of inadequate ventilation wear respiratory protection.</p> <p>Avoid release to the environment.</p> <p>Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>Contaminated work clothing should not be allowed out of the workplace.</p> <p>Keep cool. Protect from sunlight.</p> <p>Keep container tightly closed and store in a well-ventilated area. Store locked up.</p>
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Extremely flammable silver color liquid and aerosol. First evaporating vapors can reach hazardous levels quickly in unventilated spaces.

### 3. COMPOSITION / INFORMATION on INGREDIENTS

Ingredients	wt%	CAS No.	ACGIH (TLV-TMA)
Aluminum (Mineral oil)	5~10 (1~2)	7429-90-5 64742-88-7	Aluminum: 1mg/m <sup>3</sup> Mineral oil: 5mg/m <sup>3</sup>
Alkyd Resin	15~25	—	—
Xylene	10	1330-20-7	100ppm
Ethylbenzene	10	100-41-4	20 ppm
Toluene	33	108-88-3	20 ppm
Ethyl Acetate	5~10	—	400 ppm
Alcohols	<5	—	50 ppm
Ethylene glycol monobutylether	<5	111-76-2	20 ppm

Propellant\*

Di methyl ether	106/100 bulk (wt)	115-10-6	not avail.
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\* Aerosol Package Only

### 4. FIRST-AID MEASURES

**General advice:** Wash off immediately with soap and plenty of water. In case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

If ingested, material may be aspirated into the lungs and cause chemical pneumonia.

Skin contact: Immediately wash skin with soap and water.

If in eyes: Rinse cautiously with water for several minutes.

If inhaled: Remove to fresh air and get medical advice / attention.

If swallowed: Do not induce vomiting and get medical advice / attention.

Protection of the person who takes measures emergency: The fire is noted. It is worn if there is a hazard mask for an organic solvent.

### 5. FIRE-FIGHTING MEASURES

Extinguishing media A small fire: Carbon dioxide, Powder, Watering, Alcohol-resistant-related fire foam

An inferno: Watering, Water spray, Alcohol-resistant-related fire foam

Do not use to extinction medicine: Cylinder shape pouring water.

A fire might extend oppositely by watering, use appropriate extinction medicines other than watering among the extinction medicines shown in the above-mentioned.

Special danger hazardous property: Highly Flammable liquid and vapour.

It ignites easily by heat, the spark, and the flame. The container might explode by heating.

Special fire fight procedures: The flash point is extremely low. If it is not dangerous, the container is moved from the fire district.

After the fire, cooling the vessel thoroughly using a large amount of water.

### 6. ACCIDENT RELEASE MEASURES

Personal precautions: Ventilation the area, In case of insufficient ventilation.

Wear suitable respiratory equipment, Avoid contact with skin and eyes.

Environmental precautions: Prevent spills from entering sewers, watercourses or low areas.

Methods for clean up: Don't touch spilled material without suitable protection.

Take up spilled material with ashes or other incombustible absorbents and dilute it with plenty of water and neutralize with soda ash or lime,

## 7. HANDLING AND STORAGE

Handling: Wear the protection goods. Avoid breathing spray mist. Do not spray around arcs or flames.

Storage: Store away from heat, sunshine in a cool well-ventilated dry place. Keep container tightly closed.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Well ventilate for carrying spray mist away from the area.

Wear safety glasses to protect eyes, wear rubber gloves and respirator with filter if necessary

## 9. PHSICAL AND CHEMICAL PROPERTIES

Appearance: Silver color liquid

Density/sp. gravity: 0.94

Odor: aromatic & ester odor

Vapor density: 3.0 (as air=1)

Flash point(Bulk) : -1°C

Flammable limit in air: 1.3~10.0 vol%

Boiling point (Bulk) : 70~150°C

pH: None

## 10. STABILITY AND REACTIVITY

Reactivity: None

Condition to avoid: Heat

Incompatibility: Strong oxidizer

Hazardous polymerization : will not occur

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral)	: Not classified
Acute toxicity (Dermal)	: Category 5
Acute toxicity (inhalation: Gas)	: Not applicable
Acute toxicity (inhalation: Vapor)	: Category 4
Acute toxicity (inhalation: Dust , mist)	: Classification not possible
Skin corrosion/irritation	: Category 2
Serious eye damage/eye irritation	: Category 2
Respiratory sensitization	: Classification not possible
Skin sensitization	: Category 1
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Category 2
Toxic to reproduction	: Category 1A
Specific target organ toxicity-Single exposure	: Category 1 , Category 3
Specific target organ toxicity-Repeated exposure	: Category 1
Aspiration hazard	: Category 1

### ○ Health Hazards of Ingredients

n	Ingredients	Acute toxicity			
		Oral	Dermal	inhalation: Vapor	inhalation: Dust , mist
1	Aluminum (Mineral oil)	Classification not possible	Classification not possible	Classification not possible	Classification not possible
2	Alkyd Resin /Xylene/Ethylbenzene	Not classified	Not classified	Category 5	Classification not possible
3	Toluene	Category 5	Not classified	Category 4	Classification not possible
4	Alcohols	Category 4	Category 5	Not classified	Classification not possible
5	Ethyl Acetate	Not classified	Not classified	Category 5	Classification not possible
6	Ethyleneglycolmonobutylether	Category 4	Category 2	Category 2	Classification not possible
n	Ingredients	Skin corosion /irritation	Serious eye damage /eye irritation	Respiratory sensitization	Skin sensitization
1	Aluminum (Mineral oil)	Category 2	Category 2A	Not possible	Category 1
2	Alkyd Resin /Xylene/Ethylbenzene	Category 2	Category 2A	Not possible	Not possible
3	Toluene	Category 2	Category 2B	Not possible	Not classified

4	Alcohols	Category 2	Category 2A-2B	Not possible	Not possible
5	Ethyl Acetate	Category 3	Category 2B	Not possible	Not classified
6	Ethyleneglycolmonobutylether	Category 2	Category 2A	Not possible	Not classified
n	Ingredients	Germ cell mutagenicity	Carcinogenicity	Toxic to reproduction	
1	Aluminum (Mineral oil)	Classification not possible	Classification not possible	Classification not possible	
2	Alkyd Resin / Xylene / Ethylbenzene	Not classified	Category 2	Category 1B	
3	Toluene	Not classified	Not classified	Category 1A	
4	Alcohols	Not classified	Classification not possible	Category 1B	
5	Ethyl Acetate	Classification not possible	Classification not possible	Classification not possible	
6	Ethyleneglycolmonobutylether	Not classified	Not classified	Category 2	
n	Ingredients	Specific target organ toxicity -Single exposure	Specific target organ toxicity -Repeated exposure	Aspiration hazard	
1	Aluminum (Mineral oil)	Category 1 (blood), Category 2 (eye) Category 3	Category 1 (blood, eye, nose) Category 2 (liver)	Category 1	
2	Alkyd Resin / Xylene / Ethylbenzene	Category 1 (liver, nervous, kidneys, nervous), Category 3	Category 1 (respiratory system, nervous system)	Not classified	
3	Toluene	Category 1 (nervous) Category 3	Category 1 (nervous system, kidneys, liver)	Category 1	
4	Alcohols	Category 1 (nervous, visual organs, systemic toxicity), Category 3	Category 1 (nervous system, visual organs)	Category 2	
5	Ethyl Acetate	Category 1 (respiratory system) Category 3	Classification not possible	Classification not possible	
6	Ethyleneglycolmonobutylether	Category 1 (nervous system, blood, kidneys, liver), Category 3	Category 2 (blood)	Classification not possible	

## 12. ECOLOGY INFORMATION

Acute hazards to the aquatic environment : Category 2  
 Long-term hazards to the aquatic environment : Category 2  
 Hazards to the ozone layer : Not classified

### ○ Environmental Hazards of Ingredients

Ingredients	Acute hazards	Long-term hazards
Aluminum (Mineral oil)	Category 1	Category 1
Alkyd Resin	—	—
Xylene/ Ethylbenzene	Category 2	Category 3
Toluene	Category 2	Not classified
Ethyl Acetate	Not classified	Not classified
Alcohols	Not classified	Not classified
Ethylene glycol monobutylether	Category 2	Not classified

## 13. DISPOSAL CONSIDERATION

Transfer to licensed waste treatment or disposal site for disposition under applicable local regulation.  
 Any disposal practice must be in compliance with country, local, state and federal laws and regulations.  
 Empty aerosol can before disposal.

## 14. TRANSPORT INFORMATION

IMDG: General Index	Bulk	Aerosol
Proper shipping name:	Paint Related Material	Aerosols
Hazard class or division:	3	2.1
Identification No.:	UN 1263	UN1950
Packing Group:	II	—

**15. REGULATORY INFORMATION**

Follow all regulations in your country.

**16. OTHER INFORMATION**

Safety data sheets are provided as reference information on the safe handling of hazardous or harmful materials to companies using such materials.

When referring to this data sheet, companies should remember that they must take responsibility for implementing the proper measures for their own particular situations.

This data sheet is not a guarantee of safety and is prepared to provide all the information that we understand now.

It may have other dangers that are not written in this sheet.

# Oil Spill Response / Firefighting

Safety data sheet  
According to WHS Regulations (2020)

## RE-HEALING RF3

### SECTION 1: IDENTIFICATION

- 1.1 Product identifier:** RE-HEALING RF3
- Other means of identification:**  
Non-applicable
- 1.2 Recommended use of the chemical and restrictions on use:**  
Relevant uses: Fire-extinguishing. For professional user only.  
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Details of manufacturer or importer:**
- PERIMETER SOLUTIONS  
Pol.Industrial de Baiña, Parc.23  
33682 Baiña-Mieres - Asturias - Spain  
Phone.: +34 985 242945. 24HR: +44 01202864796  
sds@perimeter-solutions.com
- PERIMETER SOLUTIONS  
1520 Brookfield Ave  
Green Bay, WI 54313-USA  
Tel: +1 920 593 9445
- PERIMETER SOLUTIONS  
3060 Airport Rd.  
Kamloops B.C. V2B 7X2-Canada  
Tel: +1-250-554-3530
- PERIMETER SOLUTIONS  
3 Charles Street  
St Marys NSW 0276-Australia  
Tel: +61 2 9673 5300
- 1.4 Emergency phone number:** + 61294306396

### SECTION 2: HAZARD(S) IDENTIFICATION

- The product has been classified in accordance with the information contained in the suppliers' SDS and the additional information from tests carried out by said suppliers
- 2.1 Classification of the hazardous chemical:**
- WHS:**  
The product is not classified as dangerous according to Model Work Health and Safety Regulations(Hazardous Chemicals) Amendment 2020
- 2.2 Label elements, including precautionary statements:**
- WHS:**
- Hazard statements:**  
Non-applicable
- Precautionary statements:**  
P273: Avoid release to the environment.  
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
- 2.3 Other hazards which do not result in classification:**  
Non-applicable

### SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

- 3.1 Substances:**  
Non-applicable
- 3.2 Mixtures:**
- Chemical description:** Aqueous solution of tensoactives

- CONTINUED ON NEXT PAGE -



Safety data sheet  
 According to WHS Regulations (2020)

**RE-HEALING RF3**

**SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8 (continued)**

**Components:**

In accordance with Schedule 8 (WHS Regulations), the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 57-50-1	<b>Sucrose</b>	10 - <30 %
CAS: 112-34-5	<b>2-(2-butoxyethoxy)ethanol</b> Eye Irrit. 2A: H319; Flam. Liq. 4: H227 - Warning	10 - <30 %
CAS: 90583-18-9	<b>Sulfuric acid, mono-C12-14-alkyl esters, compds. with triethanolamine</b> Acute Tox. 4: H302; Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	<10 %
CAS: 68139-30-0	<b>1-Propanaminium, N-(3-aminopropyl)-2-hydroxy-N,N-dimethyl-3-sulfo-, N-coco acyl derivs., hydroxides, inner salts</b> Eye Irrit. 2A: H319 - Warning	<10 %
CAS: 61789-40-0	<b>1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts</b> Eye Dam. 1: H318 - Danger	<10 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

**SECTION 4: FIRST AID MEASURES**

**4.1 Description of necessary first aid measures:**

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

**By inhalation:**

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

**By skin contact:**

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

**By eye contact:**

Rinse eyes thoroughly with water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

**By ingestion/aspiration:**

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

**4.2 Symptoms caused by exposure:**

Acute and delayed effects are indicated in sections 2 and 11.

**4.3 Medical attention and special treatment:**

Non-applicable

**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Suitable extinguishing equipment:**

**Suitable extinguishing media:**

Product is non-flammable under normal conditions of storage, manipulation and use, but the product contains flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

**Unsuitable extinguishing media:**

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

**5.2 Specific hazards arising from the chemical:**

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

- CONTINUED ON NEXT PAGE -

**RE-HEALING RF3****SECTION 5: FIREFIGHTING MEASURES (continued)****5.3 Special protective equipment and precautions for fire fighters:**

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

**Additional provisions:**

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures:**

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

**6.2 Environmental precautions:**

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

**6.3 Methods and materials for containment and cleaning up:**

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

**6.4 Reference to other sections:**

See sections 8 and 13.

**SECTION 7: HANDLING AND STORAGE****7.1 Precautions for safe handling:**

A.- Precautions for safe manipulation

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

**7.2 Conditions for safe storage, including any incompatibilities:**

A.- Technical measures for storage

Minimum Temp.: -5 °C

Maximum Temp.: 50 °C

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

**7.3 Specific end use(s):**

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**

- CONTINUED ON NEXT PAGE -

Safety data sheet  
According to WHS Regulations (2020)

**RE-HEALING RF3**

**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION (continued)**

**8.1 Exposure control measures:**

Substances whose occupational exposure limits have to be monitored in the workplace:

Workplace Exposure Standards for Airborne Contaminants 16/12/2019:

Identification	Occupational exposure limits		
Sucrose CAS: 57-50-1	TWA		10 mg/m <sup>3</sup>
	STEL		

**8.2 Engineering controls:**

A.- Individual protection measures, for example personal protective equipment (PPE)


As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection


The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using chemical protection gloves

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.



D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer 's instructions. Use if there is a risk of splashing.

E.- Bodily protection

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration.
	Anti-slip work shoes	Replace before any evidence of deterioration.

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

**Environmental exposure controls:**

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

\*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

**RE-HEALING RF3**
**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)**
**9.1 Information on basic physical and chemical properties:**

For complete information see the product datasheet.

**Appearance:**

Physical state at 20 °C:	Liquid
Appearance:	Viscous
Color:	Brown
Odor:	Characteristic
Odour threshold:	Non-applicable *

**Volatility:**

Boiling point at atmospheric pressure:	Non-applicable *
Vapour pressure at 20 °C:	Non-applicable *
Vapour pressure at 50 °C:	Non-applicable *
Evaporation rate at 20 °C:	Non-applicable *

**Product description:**

Density at 20 °C:	1070 - 1100 kg/m <sup>3</sup>
Relative density at 20 °C:	Non-applicable *
Dynamic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 40 °C:	>20.5 cSt
Concentration:	Non-applicable *
pH:	6.5 - 7.5
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	
Solubility properties:	Highly water-soluble
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *

**Flammability:**

Flash Point:	Non Flammable (>93 °C)
Heat of combustion:	Non-applicable *
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *

**Explosive:**

Lower explosive limit:	Non-applicable *
Upper explosive limit:	Non-applicable *

**9.2 Other information:**

Surface tension at 20 °C:	Non-applicable *
Refraction index:	1.385

\*Not relevant due to the nature of the product, not providing information property of its hazards.

**SECTION 10: STABILITY AND REACTIVITY**

- CONTINUED ON NEXT PAGE -

Safety data sheet  
According to WHS Regulations (2020)

**RE-HEALING RF3**

**SECTION 10: STABILITY AND REACTIVITY (continued)**

**10.1 Reactivity:**

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

**10.2 Chemical stability:**

Chemically stable under the conditions of storage, handling and use.

**10.3 Possibility of hazardous reactions:**

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

**10.4 Conditions to avoid:**

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Precaution	Precaution	Not applicable

**10.5 Incompatible materials:**

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

**10.6 Hazardous decomposition products:**

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects:**

Contains glycols. With possibility of effects that are hazardous to the health, it is recommended not to breathe the vapours for long periods of time.

**Dangerous health implications:**

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.  
IARC: 2,2',2''-nitrotriethanol (3); 2,2'-iminodiethanol (2B)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

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Safety data sheet  
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**RE-HEALING RF3**

**SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

**F- Specific target organ toxicity (STOT) - single exposure:**

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**G- Specific target organ toxicity (STOT)-repeated exposure:**

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**H- Aspiration hazard:**

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**Other information:**

Non-applicable

**Product-specific toxicological information:**

Acute toxicity		Genus
LD50 oral	2001 mg/kg	Rat

**Specific toxicology information on the substances:**

Identification	Acute toxicity		Genus
Sucrose CAS: 57-50-1	LD50 oral	29700 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Ecotoxicity:**

**Product-specific aquatic toxicity:**

Acute toxicity		Species	Genus
LC50	23 mg/L (96 h)	Leuciscus idus	Fish
EC50	50 mg/L (48 h)	Daphnia magna	Crustacean
EC50	150 mg/L (72 h)	Scenedesmus subspicatus	Algae

**Substance-specific aquatic toxicity:**

Identification	Acute toxicity		Species	Genus
2-(2-butoxyethoxy)ethanol CAS: 112-34-5	LC50	1300 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	2850 mg/L (24 h)	Daphnia magna	Crustacean
	EC50	53 mg/L (192 h)	Microcystis aeruginosa	Algae

Other ecotoxicity tests for Re-Healing RF3:

Toxicity soil macro-organisms LC50=5500 mg/kg soil, Eisenia fetida.

Toxicity terrestrial plants EC50=800 mg/kg soil (14 days), Lepidium sativum.

**12.2 Persistence and degradability:**

Identification	Degradability		Biodegradability	
2-(2-butoxyethoxy)ethanol CAS: 112-34-5	BOD5	0.25 g O2/g	Concentration	100 mg/L
	COD	2.08 g O2/g	Period	28 days
	BOD5/COD	0.12	% Biodegradable	92 %

**12.3 Bioaccumulative potential:**

Identification	Bioaccumulation potential	
2-(2-butoxyethoxy)ethanol CAS: 112-34-5	BCF	0.46
	Pow Log	0.56
	Potential	Low

**12.4 Mobility in soil:**

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Safety data sheet  
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**RE-HEALING RF3**

**SECTION 12: ECOLOGICAL INFORMATION (continued)**

Identification	Absorption/desorption		Volatility	
2-(2-butoxyethoxy)ethanol CAS: 112-34-5	Koc	48	Henry	7.2E-9 Pa·m <sup>3</sup> /mol
	Conclusion	Very High	Dry soil	No
	Surface tension	3.395E-2 N/m (25 °C)	Moist soil	No

**12.5 Results of PBT and vPvB assessment:**

Non-applicable

**12.6 Other adverse effects:**

Not described

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Disposal methods:**

**Waste management (disposal and evaluation):**

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

**Regulations related to waste management:**

Legislation related to waste management:

Basel Convention (Hazardous Waste)

Hazardous Waste (Regulation of Exports and Imports) Act 1989 and Amendments

**SECTION 14: TRANSPORT INFORMATION**

This product is not regulated for transport.

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations:**

**Specific provisions in terms of protecting people or the environment:**

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

**Industrial Chemicals Act 2019:**

Industrial Chemicals (Notification and Assessment) Act 1989

**SECTION 16: OTHER INFORMATION**

**Legislation related to safety data sheets:**

This safety data sheet has been designed in accordance with WHS regulations and Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals.

**Texts of the legislative phrases mentioned in section 3:**

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

**WHS:**

Acute Tox. 4: H302 - Harmful if swallowed.

Eye Dam. 1: H318 - Causes serious eye damage.

Eye Irrit. 2A: H319 - Causes serious eye irritation.

Flam. Liq. 4: H227 - Combustible liquid.

Skin Irrit. 2: H315 - Causes skin irritation.

**Advice related to training:**

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

**Principal bibliographical sources:**

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Safety data sheet  
According to WHS Regulations (2020)

**RE-HEALING RF3**

**SECTION 16: OTHER INFORMATION (continued)**

<http://www.safeworkaustralia.gov.au/>

**Abbreviations and acronyms:**

ADG: Australian Code for the Transport of Dangerous Goods by Road and Rail

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand

BOD5: 5-day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

CL50: Lethal Concentration 50

EC50: Effective concentration 50

Log-POW: Octanol-water partition coefficient

Koc: Partition coefficient of organic carbon

The information contained in this safety data sheet is based on sources, technical knowledge and current Australian legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET



## SEACARE OSD 2

### Wilhelmsen Ships Service Pty Ltd

Part Number: 764420 (25 liter), 764422 (210 liter)

Version No: 6.10

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: 13/09/2022

Print Date: 13/09/2022

L.GHS.AUS.EN

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

##### Product Identifier

<b>Product name</b>	SEACARE OSD 2
<b>Chemical Name</b>	Not Applicable
<b>Synonyms</b>	Not Available
<b>Chemical formula</b>	Not Applicable
<b>Other means of identification</b>	764420 (25 liter), 764422 (210 liter), 764420, 774422

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

<b>Relevant identified uses</b>	Oil Spill Dispersant
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##### Details of the manufacturer or supplier of the safety data sheet

<b>Registered company name</b>	Wilhelmsen Ships Service Pty Ltd	Wilhelmsen Ships Service AS* Central Warehouse	<b>Outback (M)SDS portal:</b> <a href="http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen">http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen</a>
<b>Address</b>	Suite 2, Level 17/636 St Kilda Road Melbourne ViC 3004 Australia	Willem Barentszstraat 50 Rotterdam Netherlands	-----Use our Outback portal to obtain our (M)SDSs in other languages and/or format.----- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com ----- Norway
<b>Telephone</b>	+61 3 9630 0900	+31 10 4877 777	Not Available
<b>Fax</b>	Not Available	Not Available	Not Available
<b>Website</b>	<a href="http://www.wilhelmsen.com/">http://www.wilhelmsen.com/</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
<b>Email</b>	wss.melbourne@wilhelmsen.com	wss.rotterdam@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com

<b>Registered company name</b>	Wilhelmsen Ships Service AS* Central Warehouse
<b>Address</b>	Willem Barentszstraat 50 Rotterdam Netherlands
<b>Telephone</b>	+31 10 4877 777
<b>Fax</b>	Not Available
<b>Website</b>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
<b>Email</b>	wss.rotterdam@wilhelmsen.com

##### Emergency telephone number

<b>Association / Organisation</b>	Wilhelmsen Ships Service, Melbourne, AUSTRALIA	Dutch nat. poison centre	24hrs - Chemwatch
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Emergency telephone numbers	+61 3 9630 0998	+ 31 88 7558561	+31-10-4877700
Other emergency telephone numbers	+31-10-4877700	+ 31 10 4877700	+31-10-4877700
Association / Organisation	Dutch nat. poison centre	CHEMWATCH EMERGENCY RESPONSE	
Emergency telephone numbers	+ 31 30 274 88 88	+61 1800 951 288	
Other emergency telephone numbers	+ 31-10-4877700	+61 3 9573 3188	

Once connected and if the message is not in your preferred language then please dial 01


## SECTION 2 Hazards identification

### Classification of the substance or mixture

COMBUSTIBLE LIQUID, regulated for storage purposes only

Poisons Schedule	Not Applicable
Classification [1]	Serious Eye Damage/Eye Irritation Category 2A, Flammable Liquids Category 4, Aspiration Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)	
Signal word	<b>Danger</b>

### Hazard statement(s)

H319	Causes serious eye irritation.
AUH066	Repeated exposure may cause skin dryness and cracking.
H227	Combustible liquid.
H304	May be fatal if swallowed and enters airways.

### Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

### Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.

### Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use water spray/fog to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

### Precautionary statement(s) Storage

P403	Store in a well-ventilated place.
P405	Store locked up.

### Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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## SECTION 3 Composition / information on ingredients

### Substances

See section below for composition of Mixtures

### Mixtures

CAS No	%[weight]	Name
Not Available	60-100	<u>Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, &lt;2% aromatics</u>
26264-05-1*	1-3	<u>Dodecylbenzene sulphonate isopropylamine salt</u>

**Legend:** 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; \* EU IOELVs available

## SECTION 4 First aid measures

### Description of first aid measures

<b>Eye Contact</b>	If this product comes in contact with the eyes: <ul style="list-style-type: none"><li>▶ Wash out immediately with fresh running water.</li><li>▶ 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.</li><li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li><li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li></ul>
<b>Skin Contact</b>	If skin contact occurs: <ul style="list-style-type: none"><li>▶ Immediately remove all contaminated clothing, including footwear.</li><li>▶ Flush skin and hair with running water (and soap if available).</li><li>▶ Seek medical attention in event of irritation.</li></ul>
<b>Inhalation</b>	<ul style="list-style-type: none"><li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li><li>▶ Other measures are usually unnecessary.</li></ul>
<b>Ingestion</b>	<ul style="list-style-type: none"><li>▶ Immediately give a glass of water.</li><li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li><li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li></ul>

### Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

## SECTION 5 Firefighting measures

### Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"><li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li><li>▶ Wear full body protective clothing with breathing apparatus.</li><li>▶ Prevent, by any means available, spillage from entering drains or water course.</li></ul>
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	<ul style="list-style-type: none"> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit irritating/ toxic fumes.</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>May emit poisonous fumes. May emit corrosive fumes.</p>
<b>HAZCHEM</b>	Not Applicable

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	None known



X — Must not be stored together

O — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Not Available

#### Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
SEACARE OSD 2	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	Not Available	Not Available
Dodecylbenzene sulphonate isopropylamine salt	Not Available	Not Available

#### Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Dodecylbenzene sulphonate isopropylamine salt	E	≤ 0.01 mg/m <sup>3</sup>

#### Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

#### MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

### Exposure controls

<b>Appropriate engineering controls</b>	<p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p>
<b>Personal protection</b>	

<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▸ Safety glasses with side shields.</li> <li>▸ Chemical goggles.</li> <li>▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses 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.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▸ Wear chemical protective gloves, e.g. PVC.</li> <li>▸ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>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 moisturiser is recommended.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▸ Overalls.</li> <li>▸ P.V.C apron.</li> <li>▸ Barrier cream.</li> <li>▸ Skin cleansing cream.</li> <li>▸ Eye wash unit.</li> </ul>

### Respiratory protection

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

Class P2 particulate filters are used for protection against mechanically and thermally generated particulates or both.

P2 is a respiratory filter rating under various international standards, Filters at least 94% of airborne particles

Suitable for:

- Relatively small particles generated by mechanical processes eg. grinding, cutting, sanding, drilling, sawing.
- Sub-micron thermally generated particles e.g. welding fumes, fertilizer and bushfire smoke.
- Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	:ight brown		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	0.8
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	225
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	195-245	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	73	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available BuAC = 1	<b>Explosive properties</b>	Not Available

<b>Flammability</b>	Combustible.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	5.5	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	0.6	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (Not Available%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▸ Unstable in the presence of incompatible materials.</li> <li>▸ Product is considered stable.</li> <li>▸ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

### Information on toxicological effects

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	<p>Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result.</p> <p>Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis).</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.</p>
<b>Skin Contact</b>	<p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
<b>Eye</b>	<p>Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.</p> <p>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.</p>
<b>Chronic</b>	<p>Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.</p> <p>Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.</p>

<b>SEACARE OSD 2</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available

Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
Dodecylbenzene sulphonate isopropylamine salt	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (Rat) LD50; >2000 mg/kg <sup>[1]</sup>	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

### Toxicity

SEACARE OSD 2	Endpoint	Test Duration (hr)	Species	Value	Source
		Not Available	Not Available	Not Available	Not Available
Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Dodecylbenzene sulphonate isopropylamine salt	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	EC50	48h	Crustacea	6.7mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	3.2mg/l	2
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350.

Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases.

Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids. Cationic surfactants are strongly sorbed by solids, particularly clays. Significant sorption of anionic and non-ionic surfactants has been observed in activated sludge and organic river sediments. Surfactants have been shown to improve water infiltration into soils with moderate to severe hydrophobic or water-repellent properties.

**DO NOT discharge into sewer or waterways.**

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

### Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients



## SECTION 13 Disposal considerations

### Waste treatment methods

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▸ Reduction</li> <li>▸ Reuse</li> <li>▸ Recycling</li> <li>▸ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▸ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▸ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▸ Where in doubt contact the responsible authority.</li> <li>▸ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▸ Consult State Land Waste Management Authority for disposal.</li> <li>▸ Bury residue in an authorised landfill.</li> <li>▸ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
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## SECTION 14 Transport information

### Labels Required

<b>COMBUSTIBLE LIQUID</b>	COMBUSTIBLE LIQUID, regulated for storage purposes only
<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	Not Available
Dodecylbenzene sulphonate isopropylamine salt	Not Available

**Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	Not Available
Dodecylbenzene sulphonate isopropylamine salt	Not Available

## SECTION 15 Regulatory information

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

Hydrocarbones, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics is found on the following regulatory lists

Not Applicable

Dodecylbenzene sulphonate isopropylamine salt is found on the following regulatory lists

## Australian Inventory of Industrial Chemicals (AIIC)

## National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Dodecylbenzene sulphonate isopropylamine salt)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (Dodecylbenzene sulphonate isopropylamine salt)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (Dodecylbenzene sulphonate isopropylamine salt)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 Other information

<b>Revision Date</b>	13/09/2022
<b>Initial Date</b>	10/04/2018

## CONTACT POINT

- For quotations contact your local Customer Services - <http://wssdirectory.wilhelmsen.com/#/customerservices> - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Product HSE Manager, - Email: Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com - Telephone: Tel.: +31 10 4877775

## SDS Version Summary

Version	Date of Update	Sections Updated
5.10	13/09/2022	Acute Health (skin), Chronic Health, Ingredients, Personal Protection (Respirator)

## 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.

The 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. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
 PC—STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit,  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value

BCF: BioConcentration Factors  
BEI: Biological Exposure Index  
AII: Australian Inventory of Industrial Chemicals  
DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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