



SAFETY DATA SHEET OPT5031-1 HARDENER

According to Regulation (EC) No 1907/2006, Annex II, as amended. COMMISSION REGULATION (EU) 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name OPT5031-1 HARDENER

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

Identified uses Curing agent.

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Intertronics
Unit 12a
Station Field Industrial Estate
Banbury Road
Kidlington
Oxfordshire, OX5 1JD
+44 (0)1865842842

1.4. Emergency telephone number

Emergency telephone +44 (0)1285 712755 (Monday-Friday 8am-4.30pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317

Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

Hazard pictograms



Signal word Danger

Hazard statements
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

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Precautionary statements	P264 Wash contaminated skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 Dispose of contents/ container in accordance with national regulations.
Supplemental label information	EUH210 Safety data sheet available on request.
Contains	Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide, benzyldimethylamine
Supplementary precautionary statements	P260 Do not breathe vapour/ spray. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P310 Immediately call a POISON CENTER/ doctor. P321 Specific treatment (see medical advice on this label). P363 Wash contaminated clothing before reuse. P405 Store locked up.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide			70-100%
CAS number: —	EC number: 701-196-7	REACH registration number: 01-2120118957-46-XXXX	
Classification Skin Sens. 1B - H317 Aquatic Chronic 3 - H412			

benzyldimethylamine			10-30%
CAS number: 103-83-3	EC number: 203-149-1		
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Aquatic Chronic 3 - H412			

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

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General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel. Chemical burns must be treated by a physician.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. Rinse nose and mouth with water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms are severe or persist.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting unless under the direction of medical personnel. Get medical attention.
Skin contact	It is important to remove the substance from the skin immediately. Wash skin thoroughly with soap and water. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Chemical burns must be treated by a physician.
Eye contact	Rinse immediately with plenty of water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.
Protection of first aiders	It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	A single exposure may cause the following adverse effects: Severe irritation of nose and throat. Symptoms following overexposure may include the following: Corrosive to the respiratory tract.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
Skin contact	Causes burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	May cause serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up. Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours. Oxides of carbon. Nitrous gases (NO _x). Hydrogen sulphide (H ₂ S). Oxides of sulphur.

5.3. Advice for firefighters

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Protective actions during firefighting	Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of vapours and spray/mists. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.
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6.2. Environmental precautions

Environmental precautions	Avoid discharge to the aquatic environment. Do not empty into drains.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. This product is corrosive. Small Spillages: Collect spillage. Large Spillages: Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.
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6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Read and follow manufacturer's recommendations. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. This product is corrosive. Immediate first aid is imperative. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.
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7.2. Conditions for safe storage, including any incompatibilities

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Storage precautions Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

Storage class Corrosive storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

As supplied, the material does not present a health hazard.

No exposure scenario required.

benzyltrimethylamine

No exposure limits known for ingredient(s).

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. Gloves made from the following material may provide suitable chemical protection: Butyl rubber. Neoprene. Nitrile rubber. Rubber (natural, latex). Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact. Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Provide eyewash station. Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection

Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

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Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Clear, yellowish liquid.
Colour	Colourless to pale yellow.
Odour	Pungent.
Initial boiling point and range	180°C Estimated value.
Flash point	≥ 80°C Cleveland open cup. Estimated value.
Relative density	1.12
Solubility(ies)	Slightly soluble in water.

9.2. Other information

Other information	No information required.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	See the other subsections of this section for further details.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No potentially hazardous reactions known.
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10.4. Conditions to avoid

Conditions to avoid	Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time.
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10.5. Incompatible materials

Materials to avoid	Amines. Acids. Oxidising agents.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Hydrogen sulphide (H ₂ S). Oxides of sulphur. Oxides of carbon. Nitrous gases (NO _x).
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD ₅₀)	Based on available data the classification criteria are not met.
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ATE oral (mg/kg)	5,000.0
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Acute toxicity - dermal

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Notes (dermal LD₅₀)	Based on available data the classification criteria are not met.
ATE dermal (mg/kg)	11,000.0
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	Based on available data the classification criteria are not met.
ATE inhalation (vapours mg/l)	110.0
<u>Skin corrosion/irritation</u>	
Animal data	Skin Corr. 1B - H314 Causes severe burns.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	Based on available data the classification criteria are not met.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.
<u>General information</u>	
General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
Skin contact	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
Route of exposure	Ingestion Inhalation Skin and/or eye contact

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Target organs	No specific target organs known.
Medical symptoms	May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
Medical considerations	The following pre-existing or historic medical conditions of the worker may lead to an increased risk of adverse health effects following exposure to this product: Skin disorders and allergies. Chronic respiratory and obstructive airway diseases.

Toxicological information on ingredients.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

Toxicological effects	No information available.
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benzyltrimethylamine

Acute toxicity - oral

Notes (oral LD₅₀)	265 mg/kg, Oral, Rat
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ATE oral (mg/kg)	500.0
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Acute toxicity - dermal

Notes (dermal LD₅₀)	1,660 mg/kg, Dermal, Rabbit
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ATE dermal (mg/kg)	1,100.0
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Acute toxicity - inhalation

Notes (inhalation LC₅₀)	2.05 mg/l, 4 hours, Rat
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ATE inhalation (vapours mg/l)	11.0
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SECTION 12: Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects.
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12.1. Toxicity

Toxicity	Based on available data the classification criteria are not met.
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Ecological information on ingredients.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

Toxicity	No data available.
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benzyltrimethylamine

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 37.8 mg/l, Pimephales promelas (Fat-head Minnow)
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Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >100 mg/l, Daphnia magna
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Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 1.34 mg/l, Desmodesmus subspicatus NOEC, 72 hours: 0.24 mg/l, Desmodesmus subspicatus
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Acute toxicity - microorganisms	EC ₅₀ , 17 hours: 749.6 mg/l, Pseudomonas putida EC ₅₀ , 17 hours: 530 mg/l, Bacteria
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12.2. Persistence and degradability

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Persistence and degradability Not readily biodegradable.

Ecological information on ingredients.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

Persistence and degradability Not expected to be readily biodegradable.

benzyl dimethylamine

Persistence and degradability Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Ecological information on ingredients.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

Bioaccumulative potential No information available.

benzyl dimethylamine

Bioaccumulative potential 2.1-6.4 (conc. 500 ug/L)

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

Mobility No data available.

benzyl dimethylamine

Mobility log Pow 1.91

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2, 3-epoxypropane with hydrogen sulfide

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

benzyl dimethylamine

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods

Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	2735
UN No. (IMDG)	2735
UN No. (ICAO)	2735
UN No. (ADN)	2735

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	AMINES, LIQUID, CORROSIVE, N.O.S. (Benzylidimethylamine solution)
Proper shipping name (IMDG)	AMINES, LIQUID, CORROSIVE, N.O.S. (Benzylidimethylamine solution)
Proper shipping name (ICAO)	AMINES, LIQUID, CORROSIVE, N.O.S. (Benzylidimethylamine solution)
Proper shipping name (ADN)	AMINES, LIQUID, CORROSIVE, N.O.S. (Benzylidimethylamine solution)

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C7
ADR/RID label	8
IMDG class	8
ICAO class/division	8
ADN class	8

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III

OPT5031-1 HARDENER**ADN packing group** III**14.5. Environmental hazards****Environmentally hazardous substance/marine pollutant**

No.

14.6. Special precautions for user**IMDG Code segregation group** 18. Alkalis**EmS** F-A, S-B**ADR transport category** 3**Emergency Action Code** 2X**Hazard Identification Number (ADR/RID)** 80**Tunnel restriction code** (E)**14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code****Transport in bulk according to** Not applicable.**Annex II of MARPOL 73/78 and the IBC Code****SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). COMMISSION REGULATION (EU) 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories**EU - EINECS/ELINCS**

None of the ingredients are listed or exempt.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 IATA: International Air Transport Association.
 ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
 IMDG: International Maritime Dangerous Goods.
 CAS: Chemical Abstracts Service.
 ATE: Acute Toxicity Estimate.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 EC₅₀: 50% of maximal Effective Concentration.
 PBT: Persistent, Bioaccumulative and Toxic substance.
 vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms

Eye Dam. = Serious eye damage
 Skin Corr. = Skin corrosion

Classification procedures according to Regulation (EC) 1272/2008

Eye Dam. 1 - H318: Skin Corr. 1B - H314: : Calculation method.

Training advice

Only trained personnel should use this material.

Revision date

29/04/2021

Revision

1

SDS number

5319

Hazard statements in full

H226 Flammable liquid and vapour.
 H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H332 Harmful if inhaled.
 H412 Harmful to aquatic life with long lasting effects.

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.