



SAFETY DATA SHEET

5500 High Build Epoxy

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

1.1 Product identifier

Product name : 5500 High Build Epoxy
Product description : Paint
Protective coatings for industrial buildings and castings.
Product type : Liquid.
UFI : 0XE0-40CC-100J-0KG9

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

| Identified uses | |
|------------------------------------|---|
| Industrial use Professional use | |
| Uses advised against | Reason |
| Consumer use | Product is not intended for consumer use. |

1.3 Details of the supplier of the safety data sheet

RUST-OLEUM EUROPE
Martin Mathys NV, Kolenbergstraat 23, B-3545 Zelem, Belgium
Telephone no.: +32 (0) 13 460 200
Fax no.: +32 (0) 13 460 201

Tor Coatings Limited
Unit 21, White Rose Way, Follingsby Park, Gateshead, Tyne & Wear, NE10 8YX United Kingdom
Telephone no.: +44 (0) 191 4106611
Fax no.: +44 (0) 191 4920125
enquiries@tor-coatings.com

e-mail address of person responsible for this SDS : rpmeurohas@rustoleum.eu

1.4 Emergency telephone number

National advisory body/Poison Centre

Supplier

Telephone number United Kingdom: : +44 870 8200418 / +44 2038073798
Great Britain

Hours of operation : 24 / 7

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Irrit. 2, H315

Eye Irrit. 2, H319

Skin Sens. 1, H317

Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : P280 - Wear protective gloves. Wear eye or face protection.
P273 - Avoid release to the environment.

Response : P391 - Collect spillage.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol
Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives
maleic anhydride

Supplemental label elements : EUH205 - Contains epoxy constituents. May produce an allergic reaction.
EUH211 - Warning! Hazardous respirable droplets may be formed when sprayed.
Do not breathe spray or mist.

Supplemental label elements : Detergents - Regulation (EC) No 907/2006 : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

5500 Epoxy System (Base)

SECTION 2: Hazards identification

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

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 : Mixture

United Kingdom: Great Britain

| Product/ingredient name | Identifiers | % | Classification | Specific Conc. Limits, M-factors and ATEs | Type |
|--|--|-----------|--|---|---------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | REACH #: 01-2119456619-26 EC: 216-823-5 CAS: 1675-54-3 Index: 603-073-00-2 | ≥25 - ≤50 | Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411 | Skin Irrit. 2, H315: C ≥ 5% Eye Irrit. 2, H319: C ≥ 5% | [1] |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | REACH #: 01-2119454392-40 EC: 500-006-8 CAS: 9003-36-5 | ≥10 - ≤25 | Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411 | - | [1] |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | REACH #: 01-2119485289-22 EC: 271-846-8 CAS: 68609-97-2 Index: 603-103-00-4 | ≤10 | Skin Irrit. 2, H315 Skin Sens. 1, H317 | - | [1] |
| maleic anhydride | REACH #: 01-2119472428-31 EC: 203-571-6 CAS: 108-31-6 Index: 607-096-00-9 | ≤0,1 | Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372 (inhalation) EUH071 See Section 16 for the full text of the H statements declared above. | ATE [Oral] = 400 mg/kg Skin Sens. 1, H317: C ≥ 0,001% | [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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

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

Type

[1] Substance classified with a health or environmental hazard

This mixture contains ≥ 1% of titanium dioxide. The Annex VI classification of titanium dioxide does not apply to this mixture according to Note 10.

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

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

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

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

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

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
halogenated compounds
metal oxide/oxides

5.3 Advice for firefighters

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

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Additional information : No unusual hazard if involved in a fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

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

6.2 Environmental precautions

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

6.3 Methods and 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance.

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

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

Seveso Directive - Reporting thresholds

Danger criteria

| Category | Notification and MAPP threshold | Safety report threshold |
|----------|---------------------------------|-------------------------|
| E2 | 200 tonne | 500 tonne |

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits / Biological exposure indices

- Recommended monitoring procedures** : 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.

DNELs/DMELs

SECTION 8: Exposure controls/personal protection

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|--|----------------------|------------------------|--------------------------------|--------------------------------|----------|
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | DNEL | Short term Dermal | 83 mg/cm ² | Workers | Local |
| | DNEL | Long term Dermal | 104,15 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 29,39 mg/m ³ | Workers | Systemic |
| | DNEL | Long term Dermal | 62,5 mg/kg bw/day | General population [Consumers] | Systemic |
| | DNEL | Long term Inhalation | 8,7 mg/m ³ | General population [Consumers] | Systemic |
| | DNEL | Long term Oral | 6,25 mg/kg bw/day | General population [Consumers] | Systemic |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | DNEL | Short term Dermal | 17 mg/kg bw/day | Workers | Systemic |
| | DNEL | Short term Dermal | 68 mg/cm ² | Workers | Local |
| | DNEL | Short term Inhalation | 29 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Inhalation | 9,8 mg/m ³ | Workers | Local |
| | DNEL | Long term Dermal | 3,9 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 13,8 mg/m ³ | Workers | Systemic |
| | DNEL | Long term Dermal | 1,7 mg/cm ² | Workers | Local |
| | DNEL | Long term Inhalation | 0,98 mg/m ³ | Workers | Local |
| | DNEL | Short term Dermal | 10 mg/kg bw/day | General population [Consumers] | Systemic |
| | DNEL | Short term Inhalation | 7,6 mg/m ³ | General population [Consumers] | Systemic |
| | DNEL | Short term Oral | 1219 mg/kg bw/day | General population [Consumers] | Systemic |
| | DNEL | Short term Dermal | 40 mg/cm ² | General population [Consumers] | Local |
| | DNEL | Short term Inhalation | 2,9 mg/m ³ | General population [Consumers] | Local |
| | DNEL | Long term Dermal | 2,35 mg/kg bw/day | General population [Consumers] | Systemic |
| | DNEL | Long term Inhalation | 4,1 mg/m ³ | General population [Consumers] | Systemic |
| | DNEL | Long term Oral | 1 mg/kg bw/day | General population [Consumers] | Systemic |
| DNEL | Long term Dermal | 1 mg/cm ² | General population [Consumers] | Local | |
| DNEL | Long term Inhalation | 1,46 mg/m ³ | General population [Consumers] | Local | |

SECTION 8: Exposure controls/personal protection

| | | | | | |
|------------------|------|--------------------------|-----------------------|---------|----------|
| maleic anhydride | DNEL | Short term Inhalation | 0,8 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Dermal | 0,04 mg/kg | Workers | Systemic |
| | DNEL | Long term Inhalation | 0,4 mg/m ³ | Workers | Systemic |

PNECs

| Product/ingredient name | Compartment Detail | Value | Method Detail |
|--|--|------------------|---------------|
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | Fresh water | 0,003 mg/l | - |
| | Marine water | 0,0003 mg/l | - |
| | Sewage Treatment Plant | 10 mg/l | - |
| | Fresh water sediment | 0,294 mg/kg dwt | - |
| | Marine water sediment | 0,0294 mg/kg dwt | - |
| | Soil | 0,237 mg/kg dwt | - |
| | Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | Fresh water | 0,0072 mg/l |
| Marine | | 0,00072 mg/l | - |
| Sewage Treatment Plant | | 10 mg/l | - |
| Fresh water sediment | | 66,77 mg/kg dwt | - |
| Marine water sediment | | 6,677 mg/kg dwt | - |
| Soil | | 80,12 mg/kg dwt | - |
| maleic anhydride | | Fresh water | 0,04281 mg/l |
| | Marine water | 0,004281 mg/l | - |
| | Soil | 0,0415 mg/l | - |
| | Fresh water sediment | 0,334 mg/kg | - |
| | Marine water sediment | 0,0334 mg/kg | - |
| | Sewage Treatment Plant | 44,6 mg/l | - |
| | | | |

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

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

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Use eye protection according to EN 166. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

SECTION 8: Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): neoprene (0.65mm)
The recommendation for the type or types of glove to use when handling this product is based on information from the following source: EN374. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear overalls or long sleeved shirt. (EN 467)
- 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: A respirator is not needed under normal and intended conditions of product use.
- 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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

- Physical state** : Liquid.
- Colour** : Various
- Odour** : Odourless.
- Odour threshold** : Not available.
- Melting point/freezing point** : -10°C [Literature]
- Initial boiling point and boiling range** : >200°C (>392°F) [Literature]
- Flammability (solid, gas)** : Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
This material will not burn or burns with difficulty.
- Lower and upper explosion limit** : Not available.
- Flash point** : Closed cup: >130°C (>266°F) [Literature]
- Auto-ignition temperature** : >400°C (>752°F) [Literature]
- Decomposition temperature** : >200°C
- pH** : Not applicable.
- pH : Justification** : Product is non-soluble (in water).
- Viscosity** : Dynamic (room temperature): >5000 mPa·s [ISO EN BS DIN 3219]
Kinematic (room temperature): 3226 to 3650 mm²/s [calculated.]
Kinematic (40°C): >20,5 mm²/s

SECTION 9: Physical and chemical properties

Solubility(ies) :

| Media | Result |
|------------|-------------|
| cold water | Not soluble |
| hot water | Not soluble |

Solubility in water : Not available.

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

Vapour pressure : <0,067 kPa (<0,5 mm Hg) [calculated.]

Evaporation rate : <0,1 (Butyl acetate. = 1)

Relative density : Not available.

Density : 1,37 to 1,55 g/cm³ [20°C (68°F)] [DIN 53217]

Vapour density : >1 [Air = 1]

Explosive properties : No unusual hazard if involved in a fire.

Oxidising properties : Not available.

Particle characteristics

Median particle size : Not applicable.

SECTION 10: Stability and reactivity

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

10.2 Chemical stability : The product is stable.

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

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : No specific data.

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

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|---------------------------------|---------|------------------------|----------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | LD50 Dermal | Rabbit | 20 g/kg | - |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | LC50 Inhalation Dusts and mists | Rat | >150 mg/m ³ | 7 hours |
| maleic anhydride | LD50 Oral | Rat | 17100 mg/kg | - |
| | LD50 Dermal | Rabbit | 2620 mg/kg | - |
| | LD50 Oral | Rat | 400 mg/kg | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

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) |
|---|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | N/A | 20000 | N/A | N/A | N/A |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | 17100 | N/A | N/A | N/A | N/A |
| maleic anhydride | 400 | 2620 | N/A | N/A | N/A |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--|---|---------|-------|--------------------------|-------------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | Eyes - Severe irritant | Rabbit | - | 24 hours 2 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 500 milligrams | - |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | Skin - Erythema/Eschar | Rabbit | 0,7 | 4 hours | 72 hours |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | Eyes - Mild irritant | Rabbit | - | - | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 microliters | - |
| | Skin - Primary dermal irritation index (PDII) | Rabbit | 4,1 | 24 hours | - |
| maleic anhydride | Skin - Primary dermal irritation index (PDII) | Rabbit | 5,75 | 24 hours | - |
| | Eyes - Severe irritant | Rabbit | - | 1 Percent | - |

Conclusion/Summary

- Skin** : Causes skin irritation.
- Eyes** : Causes serious eye irritation.
- Respiratory** : Based on available data, the classification criteria are not met.

Sensitisation

| Product/ingredient name | Route of exposure | Species | Result |
|--|-------------------|------------|-------------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | skin | Guinea pig | Sensitising |
| | skin | Mouse | Sensitising |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | skin | Guinea pig | Sensitising |
| | skin | Guinea pig | Sensitising |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | skin | Guinea pig | Sensitising |

Conclusion/Summary

- Skin** : May cause an allergic skin reaction.
- Respiratory** : Based on available data, the classification criteria are not met.

Mutagenicity

SECTION 11: Toxicological information

| Product/ingredient name | Test | Experiment | Result |
|--|----------|---|----------|
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | OECD 476 | Experiment: In vitro Subject: Mammalian-Animal | Positive |
| | OECD 471 | Subject: Bacteria | Positive |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | OECD 474 | Subject: Mammalian-Animal | Negative |
| | OECD 476 | Experiment: In vitro Subject: Mammalian-Animal | Negative |
| | OECD 474 | Experiment: In vivo Subject: Mammalian-Animal | Negative |
| | OECD 475 | Experiment: In vivo Subject: Mammalian-Animal | Negative |
| | OECD 471 | Subject: Bacteria Metabolic activation: with and without S9 metabolic activation | Positive |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

It has been observed that the carcinogenic hazard of this product arises when respirable dust is inhaled in quantities leading to significant impairment of particle clearance mechanisms in the lung.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Developmental toxin | Species | Dose | Exposure |
|--|-------------------|-----------|---------------------|---------|-----------------|----------|
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | Negative | - | - | Rat | Oral: 540 mg/kg | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|---|-----------------|------------|--------------------------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | Positive - Dermal | Rabbit | 300 mg/kg | 1 days per week |
| | Positive - Oral | Rabbit | 180 mg/kg | 1 days per week |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | Positive - Oral | Rat | 180 mg/kg | 1 days per week |
| | Negative - Route of exposure unreported | Rabbit - Female | >300 mg/kg | - |
| | Positive - Dermal | Rabbit | 300 mg/kg | 6 hours; 7 days per week |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | Positive - Dermal | Rabbit | 100 mg/kg | 6 hours; 7 days per week |
| | Negative - Route of exposure unreported | Rat - Female | >200 mg/kg | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

SECTION 11: Toxicological information

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|---------------|
| maleic anhydride | Category 1 | inhalation | - |

Aspiration hazard

Not available.

Information on likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Eyes.
Routes of entry not anticipated: Inhalation.

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.

Symptoms related to the physical, chemical and toxicological characteristics

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

Inhalation : No specific data.

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

Ingestion : No specific data.

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.

Conclusion/Summary : Based on available data, the classification criteria are not met.

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

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

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure | |
|--|--|--|---------------|----------|
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | Acute EC50 1,8 mg/l | Algae | 72 hours | |
| | Acute EC50 2 mg/l | Daphnia spec. | 24 hours | |
| | Acute EC50 1,6 mg/l | Daphnia spec. | 48 hours | |
| | Acute IC50 >100 mg/l | Bacteria | 3 hours | |
| | Acute LC50 0,55 mg/l | Fish | 96 hours | |
| | Acute LC50 2 mg/l | Fish | 96 hours | |
| | Chronic NOEC 0,3 mg/l | Daphnia spec. | 21 days | |
| | Acute EC50 >100 mg/l | Bacteria | 3 hours | |
| | Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | Acute EC50 7,2 mg/l | Daphnia spec. | 48 hours |
| | | Acute IC50 844 mg/l | Algae | 72 hours |
| Acute LC50 1800 mg/l | | Fish | 96 hours | |
| Acute LC50 5000 mg/l | | Fish | 96 hours | |
| Acute LC50 230000 µg/l Fresh water | | Fish - <i>Gambusia affinis</i> - Adult | 96 hours | |
| maleic anhydride | | | | |

Conclusion/Summary : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|--|-----------|-----------------------------------|------|----------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | OECD 301B | 6 to 12 % - Not readily - 28 days | - | - |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | OECD 301B | 16 % - Not readily - 28 days | - | - |
| | - | 0 % - Not readily - 28 days | - | - |

Conclusion/Summary : This product is estimated to have a very slow rate of biodegradation of less than 30% degradation over a test period of more than 28 days.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | - | - | Not readily |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | - | - | Not readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--|--------------------|------------|-----------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane | 3,84 | 3 to 31 | Low |
| Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol | 2,7 | 150 | Low |
| Oxirane, mono [(C12-C14-alkyloxy)methyl] derivatives | 3,77 | 160 to 263 | Low |

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SECTION 12: Ecological information

| | | | |
|------------------|-------|---|-----|
| maleic anhydride | -2,78 | - | Low |
|------------------|-------|---|-----|

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Non-volatile.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance.

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.









Hazardous waste : Yes.

European waste catalogue (EWC)

| Waste code | Waste designation |
|------------|---|
| 08 01 11* | waste paint and varnish containing organic solvents or other hazardous substances |

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|--|--|--|---|--|
| 14.1 UN number or ID number | UN3082 | UN3082 | UN3082 | UN3082 |
| 14.2 UN proper shipping name | Environmentally hazardous substance, liquid, n.o.s. (PAINT) | Environmentally hazardous substance, liquid, n.o.s. (PAINT) | Environmentally hazardous substance, liquid, n.o.s. (PAINT) | Environmentally hazardous substance, liquid, n.o.s. (PAINT) |
| 14.3 Transport hazard class(es) | 9   | 9   | 9   | 9   |

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SECTION 14: Transport information

| | | | | |
|--------------------------------------|--|--|--|---|
| 14.4 Packing group | III | III | III | III |
| 14.5 Environmental hazards | Yes. | Yes. | Yes. | Yes. |
| <u>Additional information</u> | <p>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.</p> <p>Limited quantity 5L Special provisions 274, 335, 375, 601 Tunnel code (-)</p> | <p>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.</p> <p>Special provisions 274, 335, 375, 601 Remarks : ≤ 5L: Limited Quantity</p> | <p>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.</p> <p>Emergency schedules F-A ; S-F Special provisions 274, 335, 969 Remarks : ≤ 5L: Limited Quantity - IMDG 3.4</p> | <p>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.</p> <p>Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964. Special provisions A97, A158, A197, A215</p> |

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 available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
[Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles](#)

No listed substance

Labelling

Other EU regulations

VOC :

VOC for Ready-for-Use Mixture : 2004/42/EC - IIA/j: 500g/l (2010). ≤ 155g/l VOC.

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

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SECTION 15: Regulatory information

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Explosive precursors : Not applicable.

United Kingdom: Great Britain

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Aerosol dispensers :

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

E2

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

International regulations

Stockholm Convention on Persistent Organic Pollutants

| List name | Ingredient name | Status |
|-------------|-----------------|--------|
| Not listed. | | |

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

| List name | Ingredient name | Status |
|-------------|-----------------|--------|
| Not listed. | | |

CN code : 3824 99 70 00

Inventory list

Australia : Not determined.

Canada : Not determined.

China : Not determined.

Eurasian Economic Union : **Russian Federation inventory**: Not determined.

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SECTION 15: Regulatory information

| | |
|--------------------------|--|
| Japan | : Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined. |
| New Zealand | : Not determined. |
| Philippines | : Not determined. |
| Republic of Korea | : Not determined. |
| Taiwan | : Not determined. |
| Thailand | : Not determined. |
| Turkey | : Not determined. |
| United States | : Not determined. |
| Viet Nam | : Not determined. |

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

| | |
|-----------------------------------|--|
| Abbreviations and acronyms | : ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number SGG = Segregation Group vPvB = Very Persistent and Very Bioaccumulative |
|-----------------------------------|--|

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|-------------------------|-----------------|
| Skin Irrit. 2, H315 | Expert judgment |
| Eye Irrit. 2, H319 | Expert judgment |
| Skin Sens. 1, H317 | Expert judgment |
| Aquatic Chronic 2, H411 | Expert judgment |

Full text of abbreviated H statements

United Kingdom: Great Britain

| | |
|--|--|
| Full text of abbreviated H statements | : H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H372 Causes damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects. EUH071 Corrosive to the respiratory tract. |
|--|--|

5500 Epoxy System (Base)

SECTION 16: Other information

| | | |
|--|-------------------|---|
| Full text of classifications [CLP/GHS] | Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| | Aquatic Chronic 2 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 |
| | Eye Dam. 1 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 |
| | Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| | Resp. Sens. 1 | RESPIRATORY SENSITISATION - Category 1 |
| | Skin Corr. 1B | SKIN CORROSION/IRRITATION - Category 1B |
| | Skin Irrit. 2 | SKIN CORROSION/IRRITATION - Category 2 |
| | Skin Sens. 1 | SKIN SENSITISATION - Category 1 |
| | Skin Sens. 1A | SKIN SENSITISATION - Category 1A |
| | STOT RE 1 | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1 |

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Notice to reader

IMPORTANT NOTE: The information in this Safety Data Sheet is based on the present state of knowledge and current legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The information contained in this data sheet (as may be amended from time to time) is not intended to be exhaustive and is presented in good faith and believed to be correct as of the date on which it is prepared. It is the user's responsibility to verify that this data sheet is current prior to using the product to which it relates. Persons using the information must make their own determinations as to the suitability of the relevant product for their purposes prior to use. Where those purposes are other than as specifically recommended in this safety data sheet, then the user uses the product at their own risk.

MANUFACTURER'S DISCLAIMER: the conditions, methods and factors affecting the handling, storage, application, use and disposal of the product are not under the control and knowledge of the manufacturer. Therefore the manufacturer does not assume responsibility for any adverse events which may occur in the handling, storage, application, use, misuse or disposal of the product and, so far as permitted by applicable law, the manufacturer expressly disclaims liability for any and all loss, damages and/or expenses arising out of or in any way connected to the storage, handling, use or disposal of the product. Safe handling, storage, use and disposal are the responsibility of the users. Users must comply with all applicable health and safety laws.

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.