

Epoxy

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

SAFETY DATA SHEET

FOR PROFESSIONAL and/or INDUSTRIAL USE ONLY

EPIKOTE™ RESIN MGS LR 635

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

1.1 Product identifier

Product name : EPIKOTE™ RESIN MGS LR 635
SDS Number : 300000030631
Product type : Epoxy Resin
Other means of identification : UFI: H049-UJ5M-730W-R8G4

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

Product use : Epoxy Resin Systems

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier/Importer : Westlake Epoxy B.V.
Seattleweg 17
3195 ND Pernis - Rotterdam
The Netherlands

Contact person : epoxy@westlake.com

Telephone : General information
+31 (0)10 295 4000

1.4

Emergency telephone number

Supplier : CARECHEM 24
Telephone number : +44 (0) 1235 239 670

National advisory body/Poison Center : NVIC +31 (0)30-2748888, 'Uitsluitend bestemd om professionele hulpverleners te informeren bij acute vergiftigingen'.
(‘Only for the purpose of informing medical personnel in cases of acute intoxications’)

SECTION 2: Hazards identification


2.1 Classification of the substance or mixture

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

Eye Dam./Irrit. 2 H319
Skin Sens. 1 H317
Aquatic Chronic 2 H411
Skin Corr./Irrit. 2 H315

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

2.2 Label elements

Hazard pictograms : 

Signal word : Warning

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

Precautionary statements

Prevention : Wear protective gloves.
Wear eye or face protection.
Avoid release to the environment.
Avoid breathing vapor.
Wash thoroughly after handling.

Response : Collect spillage.
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.
If eye irritation persists:
Get medical advice or attention.

Storage : Not applicable.

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

Hazardous ingredients : bis-[4-(2,3-epoxipropoxy)phenyl]propane
Bisphenol F diglycidyl ether, reaction mass of isomers
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

Supplemental label elements : **UFI:** H049-UJ5M-730W-R8G4

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Other hazards which do not result in classification :

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

| Product/ingredient name | Identifiers | % | Regulation (EC) No. 1272/2008 [CLP] | Type |
|--|--|---------------|--|------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | RRN : 01-2119456619-26 EC : 216-823-5 CAS : 1675-54-3 Index : 603-073-00-2 | >= 75 - <= 90 | Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411 | [1] |
| Bisphenol F diglycidyl ether, reaction mass of isomers | RRN : 01-2119454392-40-0000 EC : 701-263-0 | >= 10 - <= 25 | Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411 | [1] |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | RRN : 01-2119485289-22 EC : 271-846-8 CAS : 68609-97-2 Index : 603-103-00-4 | >= 5 - <= 10 | Skin Irrit. 2, H315 Skin Sens. 1, H317 | [1] |

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

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

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, 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.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to

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

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation. May cause an allergic skin reaction.
Ingestion : 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

- Suitable extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds

5.3 Advice for firefighters

- 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** : Not available

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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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

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 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 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

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

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 of SDS) 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.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

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.

DNELs/DMELs

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|--|------|--------------------------|-------------------------|--------------------|----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Short term Dermal | 8,3 mg/kg bw/day | Workers | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Short term Inhalation | 12,3 mg/m ³ | Workers | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Long term Dermal | 8,3 mg/kg bw/day | Workers | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Long term Inhalation | 12,3 mg/m ³ | Workers | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Short term Dermal | 3,6 mg/kg bw/day | General population | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Short term Inhalation | 0,75 mg/m ³ | General population | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Short term Oral | 0,75 mg/kg bw/day | General population | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Long term Dermal | 3,6 mg/kg bw/day | General population | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Long term Inhalation | 0,75 mg/m ³ | General population | Systemic |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | DNEL | Long term Oral | 0,75 mg/kg bw/day | General population | Systemic |
| Bisphenol F diglycidyl ether, reaction mass of isomers | DNEL | Short term Dermal | 8,3 µg/cm ² | Workers | Local |
| Bisphenol F diglycidyl ether, reaction mass of isomers | DNEL | Long term Dermal | 104,15 mg/kg bw/day | Workers | Systemic |
| Bisphenol F | DNEL | Long term | 29,39 mg/m ³ | Workers | Systemic |

| | | | | | |
|--|------|----------------------|------------------------|--------------------|----------|
| diglycidyl ether, reaction mass of isomers | | Inhalation | | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | DNEL | Long term Dermal | 62,5 mg/kg bw/day | General population | Systemic |
| Bisphenol F diglycidyl ether, reaction mass of isomers | DNEL | Long term Inhalation | 8,7 mg/m ³ | General population | Systemic |
| Bisphenol F diglycidyl ether, reaction mass of isomers | DNEL | Long term Oral | 6,25 mg/kg bw/day | General population | Systemic |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | DNEL | Long term Inhalation | 3,6 mg/m ³ | Workers | Systemic |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | DNEL | Long term Inhalation | 0,87 mg/m ³ | General population | Systemic |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | DNEL | Long term Dermal | 1,0 mg/kg bw/day | Workers | Systemic |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | DNEL | Long term Dermal | 0,5 mg/kg bw/day | General population | Systemic |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | DNEL | Long term Oral | 0,5 mg/kg bw/day | General population | Systemic |

DNEL/DMEL Summary : Not available

PNECs

| Product/ingredient name | Type | Compartment Detail | Value | Method Detail |
|---|------|------------------------|----------------|---------------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | PNEC | Fresh water | 6 µg/l | |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | PNEC | Marine | 1 µg/l | |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | PNEC | Sewage Treatment Plant | 10 mg/l | |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | PNEC | Fresh water sediment | 0,996 mg/kg dw | |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | PNEC | Marine water sediment | 0,1 mg/kg dwt | |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | PNEC | Soil | 0,196 mg/kg dw | |
| Bisphenol F diglycidyl | PNEC | Fresh water | 0,003 mg/l | |

| | | | | |
|--|------|------------------------|-----------------|--|
| ether, reaction mass of isomers | | | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | PNEC | Marine | 0,0003 mg/l | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | PNEC | Sewage Treatment Plant | 10 mg/l | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | PNEC | Fresh water sediment | 0,294 mg/kg dw | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | PNEC | Marine water sediment | 0,0294 mg/kg dw | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | PNEC | Soil | 0,237 mg/kg dw | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | PNEC | Intermittent Releases | 0,0254 mg/l | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | PNEC | Fresh water | 0,0072 mg/l | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | PNEC | Marine | 0,72 µg/l | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | PNEC | Sewage Treatment Plant | 10 mg/l | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | PNEC | Fresh water sediment | 307,16 mg/kg dw | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | PNEC | Marine water sediment | 30,716 mg/kg dw | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | PNEC | Soil | 61,42 mg/kg dw | |

PNEC Summary : Not available

Derived No-Effect Levels' (DNEL's) and Predicted No-Effect Concentrations' (PNEC's)

Explanatory note:

REACH requires manufacturers and importers to establish and report 'Derived No-Effect Levels' (DNEL's) for humans by inhalation, ingestion and dermal routes of exposure and 'Predicted No-Effect Concentrations' (PNEC's) for environmental exposure. DNEL's and PNEC's are established by the registrant without an official consultation process, and are not intended to be directly used for setting workplace or general population exposure limits. They are primarily used as input values in running Quantitative Risk Assessment models (like the ECETOC-TRA model).

Due to differences in calculation methodology the DNEL will tend to be lower (sometimes significantly) than any corresponding health-based OEL for that chemical substance. Further although DNEL's (and PNEC's) are an indication for setting risk reduction measures, it should be recognized that these limits do not have the same regulatory application as officially endorsed governmental OEL's.

8.2 Exposure controls

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

Individual protection measures

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

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Splash goggles must meet EN 166 a/o ANSI Z87.1 standards.

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. Use gloves approved to relevant standards (e.g. EN 374, ASTM F739).

Material: 730 Camatril

Minimum break through time: 480 min

Material: 898 Butoject

Minimum break through time: 480 min

Producer: This recommendation is valid only for our Product as delivered. If this product will be mixed with other substances you need to contact a supplier of CE approved protective gloves (e.g. KCL GmbH, D-36124 Eichenzell, Tel. 0049 (0) 6659 87300, Fax. 0049 (0) 6659 87155, email: vertrieb@kcl.de).

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

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

Respiratory protection : 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. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter, ABEK (EN14387)

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.

General protective measures : Chemical splash goggles or face shield. Chemical-resistant gloves. Suitable protective footwear. Light protective clothing. Eyewash

bottle with clean water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | | |
|--|---|---|
| Physical state | : | Liquid |
| Color | : | Clear |
| Odor | : | None. |
| Odor threshold | : | Not available (not measured) |
| pH | : | Not available (not measured) |
| Melting point/freezing point | : | Not available (not measured) |
| Initial boiling point and boiling range | : | Greater than 200 °C |
| Flash point | : | Greater than 200 °C |
| Evaporation rate | : | Not available (not measured) |
| Upper/lower flammability or explosive limits | : | Lower: Not available (not measured) Upper: Not available (not measured) |
| Vapor pressure | : | Not available (not measured) |
| Vapor density | : | Not available (not measured) |
| Relative density | : | 1,15 |
| Density | : | Approx. 1,100 - 1,200 g/cm ³ |
| Solubility(ies) | : | Not available (not measured) |
| Solubility in water | : | Not available (not measured) |
| Partition coefficient: n-octanol/water | : | Not available (not measured) |
| Auto-ignition temperature | : | Not available (not measured) |
| Decomposition temperature | : | Not available (not measured) |
| Viscosity | : | Dynamic: Approx. 3.000 - 4.000 mPa·s Kinematic: Not available (not measured) |
| Explosive properties | : | Not available (not measured) |
| Oxidizing properties | : | Not available (not measured) |

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

| | | |
|---|---|--|
| 10.1 Reactivity | : | Stable under normal conditions. |
| 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 | : | Caustic soda (sodium hydroxide) can induce vigorous polymerisation at temperatures around 200 °C. Heating may cause self-polymerisation. Avoid release to the environment. |
| 10.5 Incompatible materials | : | Reactive or incompatible with the following materials: strong oxidizing agents, |

strong acids,

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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|--|---------|---------------|----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | | | | |
| | LD50 Oral | Rat | 11.400 mg/kg | - |
| Remarks - Oral: | Not acutely toxic in multiple mouse and rat studies, LD50 > 2000 mg/kg of body weight. | | | |
| Remarks - Inhalation: | Due to the very low vapor pressure, saturated atmosphere = 0.008 ppb, meaningful acute inhalation studies could not be conducted. | | | |
| Remarks - Dermal: | In a rat OECD no. 402 study the dermal LD50 was > 2000 mg/kg. In multiple rabbit acute dermal studies the LD50 was > 2000 mg/kg. One rabbit study reported an LD50 value of 23 grams/kg. | | | |
| | LD50 Dermal | Rat | 2.000 mg/kg | - |
| Bisphenol F diglycidyl ether, reaction mass of isomers | | | | |
| | LD50 Oral | Rat | > 2.000 mg/kg | - |
| Remarks - Oral: | The acute oral median lethal dose (LD50) in the Fischer 344 strain rat was found to be greater than 2000 mg/kg bodyweight. | | | |
| Remarks - Inhalation: | In accordance with REACH Annex VII, the acute inhalation study does not need to be conducted as oral and dermal studies are available for this substance. | | | |
| | LD50 Dermal | Rabbit | > 2.000 mg/kg | - |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | | |
| | LD50 Oral | Rat | 17.100 mg/kg | - |
| | LD50 Oral | Rat | 26.800 mg/kg | - |
| | LD50 Dermal | Rabbit | > 4.000 mg/kg | - |

Acute toxicity estimates

No data available.

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|---|---------|-----------|----------|-------------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | Skin - Erythema/Eschar 404 Acute Dermal Irritation/Corrosion | Rabbit | 1,5 - 2 | | - |
| | Skin - Edema 404 Acute Dermal Irritation/Corrosion | Rabbit | 1,0 - 1,5 | | - |
| | eyes - 405 Acute Eye Irritation/Corrosion | Rabbit | 0 | | - |
| | eyes - Redness of the conjunctivae | Rabbit | 0,7 | | - |
| | Skin - Moderate irritant | Rabbit | | 24 hrs | - |
| | Skin - Severe | Rabbit | | 24 hrs | - |

| | | | | | |
|--|---|--------|------|--------|-------------|
| | irritant | | | | |
| | eyes - Mild irritant | Rabbit | | | - |
| Bisphenol F diglycidyl ether, reaction mass of isomers | Skin - Erythema/Eschar 404 Acute Dermal Irritation/Corrosion | Rabbit | 0,7 | 4 hrs | 72 hrs |
| | Skin - Edema 404 Acute Dermal Irritation/Corrosion | Rabbit | 0 | 4 hrs | 4 - 504 hrs |
| | eyes - Cornea opacity 405 Acute Eye Irritation/Corrosion | Rabbit | 0 | | 1 - 168 hrs |
| | eyes - Iris lesion 405 Acute Eye Irritation/Corrosion | Rabbit | 0 | | 1 - 168 hrs |
| | eyes - Redness of the conjunctivae 405 Acute Eye Irritation/Corrosion | Rabbit | 0 | | 1 - 168 hrs |
| | eyes - Edema of the conjunctivae 405 Acute Eye Irritation/Corrosion | Rabbit | 0 | | 1 - 168 hrs |
| | Skin - Mild irritant | Rabbit | | 24 hrs | - |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | Skin - Primary dermal irritation index (PDII) OTS 798.4470 Acute Dermal Irritation | Rabbit | 4,1 | 24 hrs | 72 hrs |
| | Skin - Primary dermal irritation index (PDII) 404 Acute Dermal Irritation/Corrosion | Rabbit | 5,75 | 24 hrs | 72 hrs |
| | eyes - Cornea opacity 405 Acute Eye Irritation/Corrosion | Rabbit | 2 | | 1 - 24 hrs |
| | Skin - Moderate irritant | Rabbit | | 24 hrs | - |

:

Sensitization

| Product/ingredient name | Route of exposure | Species | Result |
|--|---|-------------|-------------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | Skin | See Remarks | Sensitizing |
| Remarks: | In an OECD No. 429 mouse LLNA study the estimated EC3 was a concentration of 5.7% suggesting that BADGE is a moderate skin sensitizer in this test system. In an OECD No. 406 guinea pig Maximization study BADGE induced positive dermal reaction in 100% of the test animals at a 50% concentration challenge dose. Therefore, BADGE is an "Extreme" skin sensitizer under the conditions of this study. BADGE was also positive for skin sensitization in an OECD No. 406 guinea pig Buehler method study. | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | Skin | Guinea pig | Sensitizing |
| Remarks: | The Buehler method was employed to evaluate the dermal sensitization potential of Liquid BPF DGE Epoxy Resin. Ten male guinea pigs received 0.4 | | |

| | | | |
|--|--|------------|-------------------------------------|
| | ml of test substance topically once a week for three weeks. A positive control of Liquid BPFEDGE Epoxy Resin was used on ten additional animals. The challenge phase began two weeks later with an addition 5 animals exposed to 0.4 ml of Liquid BPFEDGE Epoxy Resin. The negative control had 0 positive reactions; the Liquid BPFEDGE Epoxy Resin had 4 of 10 with positive reactions and the positive control had 8 of ten positive reactions. Under the conditions of this study, the test material caused delayed hypersensitivity in guinea pigs. | | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | Skin | Guinea pig | Sensitizing |
| Remarks: | Sensitizing in a U.S. E.P.A. OTS test guideline no. 870.2600 Buehler method study demonstrating positive dermal reactions in 20/20 guinea pigs. An extreme sensitizer in an O.E.C.D. test guideline no. 406 guinea pig Maximization study. | | |
| | Skin | Guinea pig | Sensitizing OECD Test Guideline 406 |

Mutagenicity

| Product/ingredient name | Test | Experiment | Result |
|--|--|---------------------------|----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | - | ; See Remarks | Positive |
| Remarks: | BADGE induced gene-mutation in Ames/Salmonella tester strains TA1535 and TA100 in multiple studies. Generally, mutagenic activity was greater without liver S9 metabolic activation. Induced gene-mutation in L5178Y mouse lymphoma cells. Induced gene-mutation and chromosome damage in Chinese hamster V79 cells. Induced cell transformation in Syrian hamster BHK cells based on clonal growth in soft agar. | | |
| | - | ; Mammalian-Animal | Negative |
| Remarks: | Did not induce evidence of chromosome damage in a mouse dominant lethal oral gavage study conducted up to a high dose level of 10 grams/kg and in a mouse micronucleus test conducted up to a high dose of 5000 mg/kg. Negative in a male mouse spermatocyte cytogenetic assay with treatment for 5 days by oral gavage up to a high dose of 3000 mg/kg. Did not induce an increase in the frequency of chromosome damage in a Chinese hamster bone marrow cytogenetic test by oral gavage up to a high dose of 3300 mg/kg. Failed to induce an increase of DNA strand breaks in rat liver cells following oral gavage treatment with 500 mg/kg as measured by alkaline elution. | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | - | In vitro; See Remarks | Positive |
| Remarks: | Bisphenol F Diglycidylether induced gene-mutation in the Ames/Salmonella mutation test and chromosomal aberrations in human lymphocytes in multiple independent testing guideline GLP studies. Furthermore, the structural analog, Bisphenol A Diglycidylether (BPADGE) induce a significant increase of the mutant frequency in L5178Y mouse lymphoma cells in culture supporting the other findings. Therefore, BPFEDGE is genotoxic in vitro. | | |
| | - | In vivo; Mammalian-Animal | Negative |
| Remarks: | When Bisphenol F Diglycidylether was evaluated for genotoxicity potential in multiple GLP in vivo assays including the mouse micronucleus, rat in vivo/in vitro UDS and MutaMouse tests no evidence of genotoxicity was observed. The results of other in vivo tests for genotoxicity also supported these negative findings for BPFEDGE. Therefore, Bisphenol F Diglycidylether is not genotoxic in vivo. | | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay) | In vitro; Bacteria | Positive |

| | | | |
|-----------------|--|-------------------------------|----------|
| Remarks: | Positive in an O.E.C.D. test guideline no. 471 bacterial mutation assay in Salmonella tester strain TA1535 with and without S9 metabolic activation. Negative in an O.E.C.D. test guideline no. 476 Chinese hamster ovary cell (CHO) HGPRT gene-mutation assay conducted up to cytotoxic dose levels with and without S9 metabolic activation. Negative in a L5178Y mouse lymphoma cell TK gene-mutation assay tested up to cytotoxic dose levels. | | |
| | 474 Mammalian Erythrocyte Micronucleus Test | In vivo; Mammalian-Animal | Negative |
| Remarks: | Negative for micronucleus (chromosome damage) induction in an O.E.C.D. test guideline no. 474 mouse study conducted up to a high I.P. injection dose of 4.0 grams/kg. Negative in a rat bone marrow chromosome aberration study conducted in a manner similar to O.E.C.D. test guideline no. 475 by I.P. injection up to a high dose of approximately 700 mg/kg. | | |
| | 476 In vitro Mammalian Cell Gene Mutation Test | In vitro; Mammalian-Animal | Negative |
| | 479 Genetic Toxicology: In vitro Sister Chromatid Exchange Assay in Mammalian Cells | In vitro; Mammalian-Animal | Negative |
| | 475 Mammalian Bone Marrow Chromosomal Aberration Test | In vitro; Mammalian-Animal | Negative |

Carcinogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|---|-------------|------|----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | Negative - Unreported - NOEL | See Remarks | | |
| Remarks: | In a rat oral gavage OECD no. 453 study there was no evidence of carcinogenicity up to the high dose level of 100 mg/kg/day. OECD Test Guideline no. 453 dermal exposure studies were conducted on male mice and female rats. No evidence of carcinogenicity was observed in male mice treated up to the high dose of 100 mg/kg/day and female rats exposed up to a high dose level of 1000 mg/kg/day. | | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | Negative - Dermal - NOEL | Mouse | | |
| Remarks: | Bisphenol F Diglycidylether (BPFDE) was evaluated for the potential to induce local and systemic tumors in a mouse skin-painting 24 month study. Dermal treatment of mice twice a week with up to a 10% solution of Bisphenol F Diglycidylether (BPFDE) did not induce any adverse findings of tumor incidence or local dermal effects. Therefore, BPFDE is not a mouse carcinogen under the conditions of this study. The NOAEL was estimated to be approximately 800 mg/kg/day. | | | |

Reproductive toxicity

Teratogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---------|------|----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | Negative - Oral | Rabbit | - | - |
| Remarks: | BADGE did not induce any evidence of development toxicity in rats and rabbits exposed by oral gavage or in rabbits treated by the dermal route in OECD Test Guideline no. 414 GLP studies. The oral gavage studies were | | | |

| | | | | |
|--|--|--------|---|---|
| | conducted up to a high dose level of 180 mg/kg/day that produced maternal toxicity base on decreased body weight gain. The rabbit dermal study was conducted up to a high dose of 300 mg/kg/day that induced maternal toxicity based on reduced body weight gain. | | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | Negative - Dermal | Rabbit | - | - |
| Remarks: | Diglycidyl ether of bisphenol A (DGE BPA) was tested for its embryo/fetal toxicity and teratogenicity in pregnant rabbits. DGE BPA was applied daily to the backs (clipped free of hair) of New Zealand White rabbits at dose levels of 0 (polyethylene glycol, vehicle control), 30, 100 or 300 mg/kg body weight/day at a dose volume of 1 ml/kg body weight/day on days 6 through 18 of gestation. Twenty six inseminated rabbits were used per dose group resulting in a minimum of 20 pregnant rabbits per exposure level. An occlusive bandage of absorbent gauze and non-absorbent cotton was placed over the dosing area on the back of each rabbit. The bandage was held in place for a minimum of 6 hours/day using a lycra/spandex jacket. Following the occlusion period the bandage and jacket were removed. Maternal toxicity was observed among pregnant rabbits in the 300 mg/kg dose group as evidenced by moderate to severe erythema, fissures, hemorrhage and slight edema at the exposure site. Similar, but less severe skin lesions were observed in pregnant rabbits in the 100 mg/kg/day exposure group. Skin effects (slight erythema) observed in pregnant rabbits in the 30 mg/kg/day dose group were not considered toxicologically significant. No evidence of embryo/fetal toxicity or teratogenicity was observed at any dose level resulting in a embryo/fetal no-observed-effect level of 300 mg/kg body weight/day. | | | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | Negative - Dermal OECD Test Guideline 414 | Rat | - | - |
| Remarks: | In a U.S. E.P. A. OTS 798.4420 and O.E.C.D. test guideline no. 414 developmental toxicity study conducted by the dermal route in the rat, the NOAEL for both maternal and developmental adverse effects was greater than the high dose level of 200 mg/kg/day. | | | |

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)

Not available

Aspiration hazard

Not available

Information on likely routes of exposure : Not available

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

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-----------------|---------|---|-------------------------|
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | NOAEL Dermal | Rat | 1 mg/kg/d Repeated dose 411 Subchronic Dermal Toxicity: 90-day Study | 90 days 5 days per week |

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|--|--|--------------------------------------|----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | | | |
| | Acute LC50 1,3 mg/l - 203 Fish, Acute Toxicity Test | Fish - Fish | 96 h |
| | Acute EC50 2,1 mg/l - 202 Daphnia sp. Acute Immobilization Test and Reproduction Test | Aquatic invertebrates. Water flea | 48 h |
| | Acute LC50 > 11 mg/l - | Aquatic plants - Algae | 72 h |
| | Chronic No-observable-effect- concentration 0,3 mg/l semi-static test 211 Daphnia Magna Reproduction Test | Aquatic invertebrates. Water flea | 21 d |
| Bisphenol F diglycidyl ether, reaction mass of isomers | | | |
| | Acute LC50 2,54 mg/l - | Fish - Fish | 96 h |
| | Acute EC50 2,55 mg/l - 202 Daphnia sp. Acute Immobilization Test and Reproduction Test | Aquatic invertebrates. Water flea | 48 h |
| | Acute EC50 > 1.000 mg/l - 201 Alga, | Aquatic plants - Algae | 72 h |

| | Growth Inhibition Test | | |
|--|--|--|------|
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | |
| | Acute LC50 > 1,8 g/l - 203 Fish, Acute Toxicity Test | Fish - Rainbow trout, donaldson trout | 96 h |
| | Acute LC50 > 5,0 g/l - 203 Fish, Acute Toxicity Test | Fish - Bluegill | 96 h |
| | Acute LC50 > 100,0 mg/l - 203 Fish, Acute Toxicity Test | Fish - Rainbow trout, donaldson trout | 96 h |
| | Acute EC50 7,2 mg/l - 202 Daphnia sp. Acute Immobilization Test and Reproduction Test | Aquatic invertebrates. Water flea | 48 h |
| | Acute EC50 844 mg/l - 201 Alga, Growth Inhibition Test | Aquatic plants - Algae | 72 h |
| | Acute EC50 > 100 mg/l Fresh water OECD-Guideline No. 209 | Micro-organism - activated sludge, domestic (adaptation not specified) | 3 h |

12.2 Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|--|---|-----------------|---------|------------------|
| bis-[4-(2,3-epoxipropoxy)phenyl] propane | OECD-Guideline 301 F (Manometric Respirometry Test) | 6 - 12 % - 28 d | | Activated sludge |
| Remarks: | The level of biodegradation in an "enhanced" OECD 301F study was 5% within the 28 day contact period. Biodegradation reached 6 - 12 % after 28 days of contact in an OECD test guideline no. 301B study. Therefore, BADGE is not readily biodegradable under the conditions of the studies. | | | |
| Bisphenol F diglycidyl ether, reaction mass of isomers | OECD-Guideline 301 B (CO2 Evolution Test) | 16 % - 28 d | 10 mg/l | Activated sludge |
| Remarks: | Bisphenol F Diglycidylether was not readily biodegradable under the conditions of the O.E.C.D. 301 B and 301 D screening studies. The maximum percent biodegradation observed in one of the O.E.C.D. 301 B studies was 16% for 10 mg/L at 28 days of contact. | | | |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | OECD-Guideline 301 F (Manometric Respirometry Test) | 87 % - 28 d | | Activated sludge |

12.3 Bioaccumulative potential

| Product/ingredient name | LogPow | BCF | Potential |
|--|-------------|------------------|-----------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | 2,64 - 3,78 | 3 - 31 31,00 | low |
| Bisphenol F diglycidyl ether, reaction mass of isomers | 3,3 | 150 150,00 | low |
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | 3,77 | 160 - 263 160,00 | low |

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available
Mobility : Not available

12.5 Results of PBT and vPvB assessment

PBT : P: Not available
B: Not available
T: Not available
vPvB : vB: Not available
vP: Not available

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : 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.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : 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.

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 spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| Regulatory information | 14.1. UN number | 14.2. UN proper shipping name | 14.3. Transport hazard class(es) | 14.4. Packing group |
|------------------------|-----------------|---|----------------------------------|---------------------|
| ADR/ADN | 3082 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXIDE DERIVATIVES) | 9 | III |

| | | | | |
|------------------|------|--|---|-----|
| RID | 3082 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXIDE DERIVATIVES) | 9 | III |
| ICAO/IATA | 3082 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXIDE DERIVATIVES) | 9 | III |
| IMO/IMDG | 3082 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXIDE DERIVATIVES) | 9 | III |

14.5. Environmental hazards

Environmentally hazardous and/or Marine Pollutant : Yes.



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.

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

Carcinogen: Not listed

Mutagen: Not listed

Toxic to reproduction: Not listed

PBT: Not listed

vPvB: Not listed

Other EU regulations

REACH Status : The substance(s) in this product has (have) been Registered, or are exempted from registration, according to Regulation (EC) No. 1907/2006 (REACH).

Aerosol dispensers : Not applicable.

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

Prior Informed Consent (PIC) (649/2012/EU)

None required.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

| Category |
|----------|
| E2 |

National regulations

| Product name | List name | Name on list | Classification | Notes |
|--|-----------|--------------|-------------------------|---|
| oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | ZNL_CMV | | Carcinogenic substances | Part of these derivatives are only classified as carcinogenic if the content of benzene > 0.1% and/or benzo[α]pyrene > 0.005% or 1,3-butadiene > 0,1% or DMSO-extract > 3%. Please refer to Publicatieblad L381 of December 31th, 1994: the 21st amendment of Directive 67/548/EEC or later amendments of this Directive. |
| | ZNL_CMV | | Mutagenic substances | Substances also listed on the "SZW-lijst van kankerverwekken de stoffen en processen" These substances are not classified as mutagenic if can be shown that the content of 1,3-butadiene is less than 0.1%. For more information see OJ L152 of April 30th, 2004: the 29th adaptation of Directive 67/548/EEC. |

Water Discharge Policy (ABM) : A(2) Toxic for aquatic organisms, may have long-term hazardous effects in aquatic environment. Decontamination effort: A

International regulations

International lists : Australia inventory (AICS) All components are listed or exempted.
 Canada inventory All components are listed or exempted.
 Japan inventory (ENCS) All components are listed or exempted.

China inventory (IECSC) All components are listed or exempted.
 Korea inventory (KECI) All components are listed or exempted.
 New Zealand Inventory (NZIoC) All components are listed or exempted.
 Philippines inventory (PICCS) All components are listed or exempted.
 United States inventory (TSCA 8b) All components are active or exempted.
 Taiwan inventory (TCSI) All components are listed or exempted.
 Thailand inventory Not determined.
 Vietnam inventory Not determined.

**Chemical Weapons Convention
 List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention
 List Schedule II Chemicals** : Not listed
 : Not listed

**Chemical Weapons Convention
 List Schedule III Chemicals** : Not listed
 : Not listed
 : Not listed

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]
 DNEL = Derived No Effect Level
 DMEL = Derived Minimal Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 PBT = Persistent, Bioaccumulative and Toxic
 vPvB = Very Persistent and Very Bioaccumulative

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

| Classification | Justification |
|---------------------------|--------------------|
| Eye Dam./Irrit. 2, H319 | Calculation method |
| Skin Sens. 1, H317 | Calculation method |
| Aquatic Chronic 2, H411 | Calculation method |
| Skin Corr./Irrit. 2, H315 | Calculation method |

Full text of abbreviated H statements :

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

**Full text of classifications
[CLP/GHS]**

| | |
|----------------------------------|---|
| Skin Corr./Irrit. 2, H315 | SKIN CORROSION/IRRITATION - Category 2 |
| Skin Sens. 1, H317 | SKIN SENSITISATION - Category 1 |
| Eye Dam./Irrit. 2, H319 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Aquatic Chronic 2, H411 | AQUATIC HAZARD (LONG- TERM) - Category 2 |
| Skin Corr./Irrit. 2, H315 | SKIN CORROSION/IRRITATION - Category 2 |
| Skin Sens. 1, H317 | SKIN SENSITISATION - Category 1 |
| Eye Dam./Irrit. 2, H319 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Aquatic Chronic 2, H411 | AQUATIC HAZARD (LONG- TERM) - Category 2 |

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Notice to reader

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.

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