# Safety Data Sheet

according to Regulation (EC) No 1907/2006

## ARC EG-1(E) Part A



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

### 1.1. Product identifier

UFI: EMXV-0XTM-YADE-WCMJ

ARC EG-1(E) Part A

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

**Use of the substance/mixture**

ARC Polymer Composite. Repair damage caused by impact, abrasion or erosion and chemical attack.

**Uses advised against**

No information available.

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


| | | |
|---|---|---|
| Company name: | Chesterton International GmbH | |
| Street: | Am Lenzenfleck 23 | |
| Place: | D-85737 Ismaning GERMANY | |
| Telephone: | +49 89 99 65 46 - 0 | Telefax: +49 89 99 65 46 - 50 |
| e-mail: | eu-sds@chesterton.com | |
| e-mail (Contact person): | eu-sds@chesterton.com | |
| Internet: | www.chesterton.com | |
| Responsible Department: | eu-sds@chesterton.com | |


### 1.4. Emergency telephone number:

+49(0) 551 - 1 92 40 (GIZ-Nord, 24h)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Regulation (EC) No 1272/2008**

Skin Irrit. 2; H315
Eye Irrit. 2; H319
Skin Sens. 1; H317
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

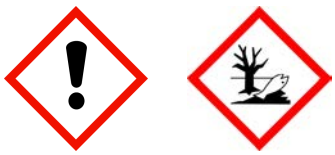
**Regulation (EC) No 1272/2008**

**Hazard components for labelling**

2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

**Signal word:** Warning

**Pictograms:**



**Hazard statements**

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

**Precautionary statements**

| | |
|---|---|
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P391 | Collect spillage. |

**Special labelling of certain mixtures**

| | |
|---|---|
| EUH205 | Contains epoxy constituents. May produce an allergic reaction. |

## 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

## 3.2. Mixtures

**Hazardous components**

| CAS No | Chemical name | | | Quantity |
|---|---|---|---|---|
| | EC No | Index No | REACH No | |
| | Classification (Regulation (EC) No 1272/2008) | | | |
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | | | 50 -< 75 % |
| | 216-823-5 | 603-073-00-2 | 01-2119456619-26 | |
| | Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411 | | | |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | | | 10 -< 25 % |
| | 701-263-0 | | 01-2119454392-40 | |
| | Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411 | | | |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | 5 -< 10 % |
| | 271-846-8 | 603-103-00-4 | 01-2119485289-22 | |
| | Skin Irrit. 2, Skin Sens. 1; H315 H317 | | | |
| 100-51-6 | benzyl alcohol | | | 5 -< 10 % |
| | 202-859-9 | 603-057-00-5 | 01-2119492630-38 | |
| | Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H332 H302 H319 | | | |

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

| CAS No | EC No | Chemical name | Quantity |
|---|---|---|---|
| | Specific Conc. Limits, M-factors and ATE | | |
| 1675-54-3 | 216-823-5 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | 50 -< 75 % |
| | inhalation: LC50 = ca. 24,6 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 19800 mg/kg Skin Irrit. 2; H315: >= 5 - 100 Eye Irrit. 2; H319: >= 5 - 100 | | |
| | 701-263-0 | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | 10 -< 25 % |
| | dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 5000 mg/kg | | |
| 68609-97-2 | 271-846-8 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | 5 -< 10 % |
| | oral: LD50 = > 2000 mg/kg | | |
| 100-51-6 | 202-859-9 | benzyl alcohol | 5 -< 10 % |
| | inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = >4,178 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 1580 mg/kg | | |

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**General information**

First aider: Pay attention to self-protection!

Remove affected person from the danger area and lay down. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**After inhalation**

Remove casualty to fresh air and keep warm and at rest.

**After contact with skin**

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

**After ingestion**

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Let 1 glass of water be drunken in little sips (dilution effect). Do NOT induce vomiting. Call a physician immediately.

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

Allergic reactions

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

First Aid, decontamination, treatment of symptoms.

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

**Suitable extinguishing media**

- Dry extinguishing powder.
- Carbon dioxide (CO2).
- alcohol resistant foam.
- Water spray jet

**Unsuitable extinguishing media**

Full water jet

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

- Carbon monoxide
- Carbon dioxide (CO2).
- Nitrogen oxides (NOx)

**5.3. Advice for firefighters**

Special protective equipment for firefighters Protective clothing. In case of fire: Wear self-contained breathing apparatus.

Co-ordinate fire-fighting measures to the fire surroundings.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

**General advice**

Safe handling: see section 7
Personal protection equipment: see section 8
Provide adequate ventilation.

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Cover drains. Adverse environmental effects

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

**For containment**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

### 6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Advice on safe handling**

Personal protection equipment: see section 8
People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this mixture.
Avoid contact with skin, eyes and clothes.
Avoid breathing dust/fume/gas/mist/vapours/spray.
When using do not eat, drink or smoke.
Never use pressure to empty container. Keep/Store only in original container.
Do not allow to enter into surface water or drains.

**Advice on protection against fire and explosion**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Advice on general occupational hygiene**

Avoid contact with skin, eyes and clothes. Use protective skin cream before handling the product. Remove contaminated, saturated clothing immediately. When using do not eat, drink, smoke, sniff. Wash hands and face before breaks and after work and take a shower if necessary.

**Further information on handling**

Wash hands before breaks and after work. Used working clothes should not be worn outside the work area. Street clothing should be stored separately from work clothing.

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

**Requirements for storage rooms and vessels**

Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container. Protect from direct sunlight.

**Hints on joint storage**

Keep away from:
- Food and feedingstuffs

**Further information on storage conditions**

Keep away from:
- Frost
- Heat
- Humidity

**7.3. Specific end use(s)**

No information available.

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**DNEL/DMEL values**

| CAS No | Substance | | | |
|---|---|---|---|---|
| DNEL type | | Exposure route | Effect | Value |
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | | | |
| Worker DNEL, long-term | | inhalation | local | 310 mg/m³ |
| Consumer DNEL, long-term | | inhalation | local | 55 mg/m³ |
| Worker DNEL, long-term | | inhalation | systemic | 4,93 mg/m³ |
| Worker DNEL, long-term | | dermal | systemic | 0,75 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 0,87 mg/m³ |
| Consumer DNEL, long-term | | dermal | systemic | 0,0893 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 0,5 mg/kg bw/day |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | | | |
| Worker DNEL, long-term | | inhalation | systemic | 29,39 mg/m³ |
| Worker DNEL, long-term | | dermal | systemic | 104,15 mg/kg bw/day |
| Worker DNEL, long-term | | inhalation | local | 0,0083 mg/m³ |
| Consumer DNEL, long-term | | inhalation | systemic | 8,7 mg/m³ |
| Consumer DNEL, long-term | | dermal | systemic | 62,5 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 6,25 mg/kg bw/day |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | |
| Worker DNEL, long-term | | inhalation | systemic | 3,6 mg/m³ |
| Worker DNEL, long-term | | dermal | systemic | 1 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 0,87 mg/m³ |
| Consumer DNEL, long-term | | dermal | systemic | 0,5 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 0,5 mg/kg bw/day |
| , | | | | |
| 100-51-6 | benzyl alcohol | | | |
| Worker DNEL, long-term | | inhalation | systemic | 22 mg/m³ |
| Worker DNEL, acute | | inhalation | systemic | 110 mg/m³ |
| Worker DNEL, long-term | | dermal | systemic | 8 mg/kg bw/day |
| Worker DNEL, acute | | dermal | systemic | 40 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 5,4 mg/m³ |

| | | | |
|---|---|---|---|
| Consumer DNEL, acute | inhalation | systemic | 27 mg/m³ |
| Consumer DNEL, long-term | dermal | systemic | 4 mg/kg bw/day |
| Consumer DNEL, acute | dermal | systemic | 20 mg/kg bw/day |
| Consumer DNEL, long-term | oral | systemic | 4 mg/kg bw/day |
| Consumer DNEL, acute | oral | systemic | 20 mg/kg bw/day |
| , | | | |

**PNEC values**

| CAS No | Substance | |
|---|---|---|
| Environmental compartment | | Value |
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | |
| Freshwater | | 0,006 mg/l |
| Freshwater (intermittent releases) | | 0,018 mg/l |
| Marine water | | 0,001 mg/l |
| Freshwater sediment | | 0,341 mg/kg |
| Marine sediment | | 0,034 mg/kg |
| Secondary poisoning | | 11 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 10 mg/l |
| Soil | | 0,065 mg/kg |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | |
| Freshwater | | 0,003 mg/l |
| Freshwater (intermittent releases) | | 0,025 mg/l |
| Marine water | | 0 mg/l |
| Freshwater sediment | | 0,294 mg/kg |
| Marine sediment | | 0,029 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 10 mg/l |
| Soil | | 0,237 mg/kg |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | |
| Freshwater | | 0,106 mg/l |
| Freshwater (intermittent releases) | | 0,072 mg/l |
| Marine water | | 0,011 mg/l |
| Freshwater sediment | | 307,16 mg/kg |
| Marine sediment | | 30,72 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 10 mg/l |
| Soil | | 1,234 mg/kg |
| 100-51-6 | benzyl alcohol | |
| Freshwater | | 1 mg/l |
| Freshwater (intermittent releases) | | 2,3 mg/l |
| Marine water | | 0,1 mg/l |
| Freshwater sediment | | 5,27 mg/kg |
| Marine sediment | | 0,527 mg/kg |

| | |
|---|---|
| Micro-organisms in sewage treatment plants (STP) | 39 mg/l |
| Soil | 0,456 mg/kg |

## 8.2. Exposure controls

**Appropriate engineering controls**

Provide adequate ventilation. If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Suitable eye protection:
- Eye glasses with side protection
- goggles
- Wear face protection.

**Hand protection**

Tested protective gloves must be worn: EN ISO 374
NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber)
Thickness of the glove material >= 0,4 mm
Breakthrough times and swelling properties of the material must be taken into consideration.
For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
Wearing time with occasional contact (splashes): max. 480 min. (NBR (Nitrile rubber))
Wearing time with permanent contact 240 - 480 min (NBR (Nitrile rubber))
Observe the wear time limits as specified by the manufacturer.

**Skin protection**

Protective clothing. Chemical protection clothing

**Respiratory protection**

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.
Combination filtering device A-P3
Self-contained respirator (breathing apparatus)

**Thermal hazards**

No data available

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

# SECTION 9: Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state: | Liquid |
| Colour: | transparent |
| Odour: | characteristic |
| Melting point/freezing point: | No data available |

| | |
|---|---|
| Boiling point or initial boiling point and boiling range: | No data available |
| Flammability | |
| Solid/liquid: | No data available |
| Lower explosion limits: | No data available |
| Upper explosion limits: | No data available |
| Flash point: | > 95 °C |
| Auto-ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| pH-Value: | No data available |
| Water solubility: | No data available |
| Solubility in other solvents | |
| No information available. | |
| Partition coefficient n-octanol/water: | No data available |
| Vapour pressure: | No data available |
| Density (at 23 °C): | ~ 1,13 g/cm³ |
| Relative vapour density: | No data available |

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties

No information available.

Self-ignition temperature

| | |
|---|---|
| Solid: | No data available |
| Gas: | No data available |

Oxidizing properties

No information available.

**Other safety characteristics**

| | |
|---|---|
| Evaporation rate: | No data available |
| Sublimation point: | No data available |
| Softening point: | No data available |
| Pour point: | No data available |
| Viscosity / dynamic: (at 23 °C) | ~ 750 mPa·s |

**Further Information**

No information available.

## SECTION 10: Stability and reactivity

**10.1. Reactivity**

The product is stable under storage at normal ambient temperatures.

**10.2. Chemical stability**

Does not decompose when used for intended uses. No known hazardous decomposition products.

**10.3. Possibility of hazardous reactions**

Possibility of hazardous reactions
- Amines
- Acid
- Alkali (lye)

**10.4. Conditions to avoid**

No data available

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

No data available

## SECTION 11: Toxicological information

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

**Acute toxicity**

Based on available data, the classification criteria are not met.

**ATEmix calculated**

ATE (inhalation dust/mist) 2,013 mg/l

| CAS No | Chemical name | | | | | |
|---|---|---|---|---|---|---|
| | Exposure route | Dose | | Species | Source | Method |
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | | | | | |
| | oral | LD50 mg/kg | 19800 | Rabbit | Publication (1958) | Rabbits were orally gavaged with test ma |
| | dermal | LD50 mg/kg | > 2000 | Rat | Study report (2007) | OECD Guideline 402 |
| | inhalation (4 h) vapour | LC50 mg/l | ca. 24,6 | Rat | AMA Arch. Ind. Hyg. Occ. Med. 10: 61-68 | Rats were exposed to 8000 ppm of the tes |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | | | | | |
| | oral | LD50 mg/kg | > 5000 | Rat | Study report (1988) | OECD Guideline 401 |
| | dermal | LD50 mg/kg | > 2000 | Rat | Study report (1988) | OECD Guideline 402 |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | | | |
| | oral | LD50 mg/kg | > 2000 | Rat | Study report (1977) | Three groups each of four female rats re |
| 100-51-6 | benzyl alcohol | | | | | |
| | oral | LD50 mg/kg | 1580 | Mouse | Cosmet. Toxicol. 11, 1011-1013 (1973) (1 | OECD Guideline 401 |
| | dermal | LD50 mg/kg | > 2000 | Rabbit | Raw Material Data Handbook, Vol.1:( Orga | EPA OTS 798.1100 |
| | inhalation vapour | ATE | 11 mg/l | | | |
| | inhalation (4 h) dust/mist | LC50 mg/l | >4,178 | Rat | ECHA | OECD 403 |

**Irritation and corrosivity**

Causes skin irritation.
Causes serious eye irritation.

**Sensitising effects**

Contains epoxy constituents. May produce an allergic reaction.May cause an allergic skin reaction. (2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran; Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane; oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

### 11.2. Information on other hazards

**Endocrine disrupting properties**

No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

| CAS No | Chemical name | | | | | | |
|---|---|---|---|---|---|---|---|
| | Aquatic toxicity | Dose | | [h] \| [d] | Species | Source | Method |
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | | | | | | |
| | Acute fish toxicity | LC50 | 3,6 mg/l | 96 h | Oncorhynchus mykiss | Study report (1982) | OECD Guideline 203 |
| | Acute algae toxicity | ErC50 | > 100 mg/l | 72 h | Raphidocelis subcapitata | Study report (2007) | OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 | 2,8 mg/l | 48 h | Daphnia magna | REACh Registration Dossier | OECD Guideline 202 |
| | Crustacea toxicity | NOEC | 0,3 mg/l | 21 d | Daphnia magna | REACh Registration Dossier | OECD Guideline 211 |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | | | | | | |
| | Acute fish toxicity | LC50 | > 1000 mg/l | 96 h | Oncorhynchus mykiss | Study report (1998) | OECD Guideline 203 |
| | Acute algae toxicity | ErC50 | > 1,8 mg/l | 72 h | Raphidocelis subcapitata | Study report (1993) | OECD Guideline 201 |
| | Acute crustacea toxicity | EL50 | > 1000 mg/l | 48 h | Daphnia magna | Study report (1998) | OECD Guideline 202 |
| | Crustacea toxicity | NOEC | 0,3 mg/l | 21 d | Daphnia magna | Study report (1984) | OECD Guideline 211 |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | | | | |
| | Acute fish toxicity | LL50 | > 100 mg/l | 96 h | Oncorhynchus mykiss | Study report (2015) | OECD Guideline 203 |
| | Crustacea toxicity | NOEC | 56 mg/l | 21 d | Daphnia magna | (2017) | OECD Guideline 211 |
| 100-51-6 | benzyl alcohol | | | | | | |
| | Acute fish toxicity | LC50 | > 100 mg/l | 96 h | Oryzias latipes | Review article or handbook (2009) | OECD Guideline 203 |
| | Acute algae toxicity | ErC50 | 770 mg/l | 72 h | Raphidocelis subcapitata | Review article or handbook (2009) | OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 | 230 mg/l | 48 h | Daphnia magna | Review article or handbook (2009) | OECD Guideline 202 |
| | Fish toxicity | NOEC | 48,897 mg/l | 30 d | Fish species | http://epa.gov/oppt/exposure/pubs/episui | other: QSAR |
| | Algae toxicity | NOEC | 51 mg/l | 3 d | | | |
| | Crustacea toxicity | NOEC | 51 mg/l | 21 d | Daphnia magna | Review article or handbook (2009) | OECD Guideline 211 |
| | Acute bacteria toxicity | (EC50 | 1385 mg/l) | 3 h | activated sludge, domestic | Study report (1989) | OECD Guideline 209 |

## 12.2. Persistence and degradability

| CAS No | Chemical name | | | |
|---|---|---|---|---|
| | Method | Value | d | Source |
| | Evaluation | | | |
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | | | |
| | OECD 302B | 12% | 28 | |
| | Not readily biodegradable (according to OECD criteria) | | | |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | | | |
| | OECD 301F | 87% | 28 | |
| 100-51-6 | benzyl alcohol | | | |
| | OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A | 95 - 97% | 21 | |
| | Readily biodegradable (according to OECD criteria). | | | |

## 12.3. Bioaccumulative potential

**Partition coefficient n-octanol/water**

| CAS No | Chemical name | Log Pow |
|---|---|---|
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran | >= 2,64 |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane | 2,7 |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | 3,77 |
| 100-51-6 | benzyl alcohol | 1 |

**BCF**

| CAS No | Chemical name | BCF | Species | Source |
|---|---|---|---|---|
| 1675-54-3 | 2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxy methylen)]bisoxiran | 31 | | Study report (2010) |
| | Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethyl ene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethyl ene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy} methyl)oxirane | 150 | | Other company data ( |
| 68609-97-2 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | >= 160 | | REACh Registration D |
| 100-51-6 | benzyl alcohol | 1,371 | QSAR model | http://epa.gov/oppt/ |

## 12.4. Mobility in soil

No information available.

## 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

No information available.

**12.7. Other adverse effects**

No information available.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

**Disposal recommendations**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. The waste code has to be identified in agreement with the disposal company or the competent authority.

**Contaminated packaging**

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

## SECTION 14: Transport information

**Land transport (ADR/RID)**

| | |
|---|---|
| **14.1. UN number or ID number:** | UN 3082 |
| **14.2. UN proper shipping name:** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin) |
| **14.3. Transport hazard class(es):** | 9 |
| **14.4. Packing group:** | III |
| Hazard label: | 9 |
| Classification code: | M6 |
| Special Provisions: | 274 335 375 601 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| Transport category: | 3 |
| Hazard No: | 90 |
| Tunnel restriction code: | - |

**Inland waterways transport (ADN)**

| | |
|---|---|
| **14.1. UN number or ID number:** | UN 3082 |
| **14.2. UN proper shipping name:** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin) |
| **14.3. Transport hazard class(es):** | 9 |
| **14.4. Packing group:** | III |
| Hazard label: | 9 |
| Classification code: | M6 |

| | |
|---|---|
| Special Provisions: | 274 335 375 601 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |

**Marine transport (IMDG)**

| | |
|---|---|
| **14.1. UN number or ID number:** | UN 3082 |
| **14.2. UN proper shipping name:** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin) |
| **14.3. Transport hazard class(es):** | 9 |
| **14.4. Packing group:** | III |
| Hazard label: | 9 |
| Special Provisions: | 274, 335, 969 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| EmS: | F-A, S-F |

**Air transport (ICAO-TI/IATA-DGR)**

| | |
|---|---|
| **14.1. UN number or ID number:** | UN 3082 |
| **14.2. UN proper shipping name:** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin) |
| **14.3. Transport hazard class(es):** | 9 |
| **14.4. Packing group:** | III |
| Hazard label: | 9 |
| Special Provisions: | A97 A158 A197 A215 |
| Limited quantity Passenger: | 30 kg G |
| Passenger LQ: | Y964 |
| Excepted quantity: | E1 |
| IATA-packing instructions - Passenger: | 964 |
| IATA-max. quantity - Passenger: | 450 L |
| IATA-packing instructions - Cargo: | 964 |
| IATA-max. quantity - Cargo: | 450 L |

**14.5. Environmental hazards**

| | |
|---|---|
| ENVIRONMENTALLY HAZARDOUS: | Yes |
| Danger releasing substance: | epoxy resin |

**14.6. Special precautions for user**

No information available.

**14.7. Maritime transport in bulk according to IMO instruments**

No information available.

## SECTION 15: Regulatory information

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

**EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3

| | |
|---|---|
| 2004/42/EC (VOC): | < 500 g/l (A+B) |
| Subcategory according to Directive 2004/42/EC: | Two-pack reactive performance coatings for specific end use such as floors - Solvent-borne coatings, VOC limit value: 500 g/l |

**National regulatory information**

| | |
|---|---|
| Employment restrictions: | Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). |
| Water hazard class (D): | 2 - obviously hazardous to water |

**15.2. Chemical safety assessment**

For the following substances of this mixture a chemical safety assessment has been carried out:
2,2´-[(1-Methylethyliden)bis(4,1-phenylenoxymethylen)]bisoxiran
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
benzyl alcohol

## SECTION 16: Other information

**Changes**

This data sheet contains changes from the previous version in section(s): 1.

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID:Règlement international conernat le transport des marchandises dangereuses par chemin de fer
(Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Refulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
SVHC: Substance of Very High Concern

**Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]**

| Classification | Classification procedure |
|---|---|
| Skin Irrit. 2; H315 | Calculation method |
| Eye Irrit. 2; H319 | Calculation method |
| Skin Sens. 1; H317 | Calculation method |
| Aquatic Chronic 2; H411 | Calculation method |

**Relevant H and EUH statements (number and full text)**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H411 | Toxic to aquatic life with long lasting effects. |
| EUH205 | Contains epoxy constituents. May produce an allergic reaction. |

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*