



Safety Data Sheet according to Regulation (EC) No 1907/2006

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LOCTITE ECCOBOND FP4451 known as HYSOL FP4451 30CC
EUFRGER -40CD

SDS No. : 200191
V002.0
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

LOCTITE ECCOBOND FP4451 known as HYSOL FP4451 30CC EUFRGER -40CD

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

Intended use:
1-c- epoxide adhesive

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 211 797 0
Fax-no.: +49 211 798 2009

ua-productsafety.de@henkel.com

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

| | |
|---|------------|
| Skin irritation | Category 2 |
| H315 Causes skin irritation. | |
| Serious eye damage | Category 1 |
| H318 Causes serious eye damage. | |
| Respiratory sensitizer | Category 1 |
| H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| Carcinogenicity | Category 2 |
| H351 Suspected of causing cancer. | |

|| **Chronic hazards to the aquatic environment** **Category 2**

|| **H411 Toxic to aquatic life with long lasting effects.**

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

hexahydromethylphthalic anhydride

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)
2,2'-((3,5',5,5'-tetramethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(oxymethylene))-bis-oxirane
3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate
Methyltetrahydrophthalic anhydride
Bisphenol-F epichlorhydrin resin; MW<700

Signal word:

Danger

Hazard statement:

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement:
Prevention

P261 Avoid breathing vapors.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement:
Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General chemical description:

Epoxy Adhesive

Base substances of preparation:

polymers
Anhydrides
Filler

Declaration of the ingredients according to CLP (EC) No 1272/2008:

| Hazardous components CAS-No. | EC Number REACH-Reg No. | content | Classification |
|--|-------------------------------|------------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | 247-094-1 01-2119845474-33 | 10- 20 % | Eye Dam. 1 H318 Skin Sens. 1 H317 Resp. Sens. 1 H334 ===== EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | 238-878-4 | 1- < 5 % | |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | 01-2119456619-26 | 5- < 10 % | Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 Aquatic Chronic 2 H411 |
| 2,2'-((3,5',5,5'-tetramethyl-(1,1'-biphenyl)- 4,4'-diyl)-bis(oxymethylene))-bis-oxirane 85954-11-6 | 413-900-7 | 1- < 5 % | Carc. 2 H351 Skin Sens. 1 H317 |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | 219-207-4 01-2119846133-44 | 1- < 5 % | Skin Sens. 1 H317 STOT RE 2 H373 Aquatic Chronic 3 H412 |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | 400-060-1 01-0000015005-83 | 1- < 3 % | Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M factor (Acute Aquat Tox): 10 M factor (Chron Aquat Tox): 10 |
| Methyltetrahydrophthalic anhydride 34090-76-1 | 251-823-9 01-2119513209-45 | 1- < 3 % | Resp. Sens. 1 H334 Skin Sens. 1 H317 Eye Dam. 1 H318 |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | 01-2119454392-40 | 0,1- < 1 % | Skin Irrit. 2; Dermal H315 Skin Sens. 1A H317 Aquatic Chronic 2 H411 |

**For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.**

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air, consult doctor if complaint persists.

Skin contact:
Rinse with running water and soap.
Obtain medical attention if irritation persists.

Eye contact:
Wash with plenty of water immediately and continue for several minutes, holding eyelid open. Consult a doctor.

Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

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

After eye contact: Corrosive, may cause permanent damage to eyes (impairment of vision).

SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Foam, extinguishing powder, carbon dioxide.

Fine water spray

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:

In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Remove mechanically.

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure good ventilation/suction at the workplace.

Extract when the product is heated.

See advice in section 8

Avoid skin and eye contact.

Do not spray against flames or glowing bodies. Keep away from sources of ignition - no smoking.

Hygiene measures:

- Wash hands before work breaks and after finishing work.
- Do not eat, drink or smoke while working.
- Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities

- Store in sealed original container.
- Protect against contamination.
- Store in a cool, dry place.
- Ensure that storage and workrooms are adequately ventilated.
- Must be stored in a room with spill collection facilities.
- Keep away from heat and direct sunlight.
- Refer to Technical Data Sheet

7.3. Specific end use(s)

- 1-c- epoxide adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
 Germany

| Ingredient [Regulated substance] | ppm | mg/m ³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|----------------------------------|-----|-------------------|--------------------|---|-----------------|
| Silica, vitreous 60676-86-0 | | 0,3 | Exposure limit(s): | If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7). | TRGS 900 |
| Silicon dioxide 7631-86-9 | | 4 | Exposure limit(s): | If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7). | TRGS 900 |

Predicted No-Effect Concentration (PNEC):

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|--|------------------------------------|--------------------|----------------|-----|-----------------|--------|---------|
| | | | mg/l | ppm | mg/kg | others | |
| Hexahydromethylphthalic anhydride 25550-51-0 | aqua (freshwater) | | 0,1 mg/l | | | | |
| Hexahydromethylphthalic anhydride 25550-51-0 | aqua (marine water) | | 0,01 mg/l | | | | |
| Hexahydromethylphthalic anhydride 25550-51-0 | sewage treatment plant (STP) | | 2,19 mg/l | | | | |
| Hexahydromethylphthalic anhydride 25550-51-0 | sediment (freshwater) | | | | 2,69 mg/kg | | |
| Hexahydromethylphthalic anhydride 25550-51-0 | sediment (marine water) | | | | 0,269 mg/kg | | |
| Hexahydromethylphthalic anhydride 25550-51-0 | Air | | | | | | |
| Hexahydromethylphthalic anhydride 25550-51-0 | Soil | | | | 0,603 mg/kg | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | aqua (freshwater) | | 0,006 mg/l | | | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | aqua (marine water) | | 0,001 mg/l | | | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | sediment (freshwater) | | | | 0,996 mg/kg | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | sediment (marine water) | | | | 0,1 mg/kg | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | Soil | | | | 0,196 mg/kg | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | oral | | | | 11 mg/kg | | |
| reaction product: bisphenol-A- (epichlorhydrin) 25068-38-6 | aqua (intermittent releases) | | 0,018 mg/l | | | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | aqua (freshwater) | | 0,024 mg/l | | | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | aqua (marine water) | | 0,0024 mg/l | | | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | aqua (intermittent releases) | | 0,24 mg/l | | | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | sewage treatment plant (STP) | | 19,5 mg/l | | | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | sediment (freshwater) | | | | 0,211 mg/kg | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | sediment (marine water) | | | | 0,0211 mg/kg | | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7- oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | Soil | | | | 0,0282 mg/kg | | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | aqua (freshwater) | | 2 mg/l | | | | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | aqua (intermittent releases) | | 0,79 mg/l | | | | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | aqua (marine water) | | 0,2 mg/l | | | | |
| Tetrahydro-4-methylphthalic anhydride | sediment | | | | 27,1 mg/kg | | |

| | | | | | | | |
|---|------------------------------------|--|----------------|--|-----------------|--|--|
| 34090-76-1 | (freshwater) | | | | | | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | sediment (marine water) | | | | 2,71 mg/kg | | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | Soil | | | | 4,24 mg/kg | | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | sewage treatment plant (STP) | | 0,69 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | aqua (freshwater) | | 0,003 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | aqua (marine water) | | 0,0003 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | sediment (freshwater) | | | | 0,294 mg/kg | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | sediment (marine water) | | | | 0,0294 mg/kg | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | Soil | | | | 0,237 mg/kg | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | aqua (intermittent releases) | | 0,0254 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | Air | | | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | Predator | | | | | | |

Derived No-Effect Level (DNEL):

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|--|--------------------|-------------------|--|---------------|--------------|---------|
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | Workers | dermal | Acute/short term exposure - systemic effects | | 8,33 mg/kg | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | Workers | Inhalation | Acute/short term exposure - systemic effects | | 12,25 mg/m3 | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | Workers | dermal | Long term exposure - systemic effects | | 8,33 mg/kg | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | Workers | Inhalation | Long term exposure - systemic effects | | 12,25 mg/m3 | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | General population | dermal | Acute/short term exposure - systemic effects | | 3,571 mg/kg | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | General population | dermal | Long term exposure - systemic effects | | 3,571 mg/kg | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | General population | oral | Acute/short term exposure - systemic effects | | 0,75 mg/kg | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | General population | oral | Long term exposure - systemic effects | | 0,75 mg/kg | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | General population | inhalation | Acute/short term exposure - systemic effects | | 0,75 mg/m3 | |
| reaction product: bisphenol-A-(epichlorhydrin) 25068-38-6 | General population | inhalation | Long term exposure - systemic effects | | 0,75 mg/m3 | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | Workers | inhalation | Long term exposure - systemic effects | | 0,18 mg/m3 | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | Workers | inhalation | Long term exposure - local effects | | 0,18 mg/m3 | |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0 | Workers | dermal | Long term exposure - systemic effects | | 0,05 mg/kg | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | General population | dermal | Long term exposure - systemic effects | | 10 mg/kg | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | General population | oral | Long term exposure - systemic effects | | 10 mg/kg | |
| Tetrahydro-4-methylphthalic anhydride 34090-76-1 | Workers | dermal | Long term exposure - systemic effects | | 10 mg/kg | |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | Workers | dermal | Long term exposure - systemic effects | | 104,15 mg/kg | |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | Workers | Inhalation | Long term exposure - systemic effects | | 29,39 mg/m3 | |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | General population | dermal | Long term exposure - systemic effects | | 62,5 mg/kg | |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | General population | Inhalation | Long term exposure - systemic effects | | 8,7 mg/m3 | |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | General population | oral | Long term exposure - systemic effects | | 6,25 mg/kg | |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (old) 9003-36-5 | Workers | dermal | Acute/short term exposure - local | | 8,3 µg/cm2 | |

| | | | | | | |
|---|--|--|---------|--|--|--|
| average molecular weight \leq 700) (old) 9003-36-5 | | | effects | | | |
|---|--|--|---------|--|--|--|

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A (EN 14387)

Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR; \geq 0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR; \geq 0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Goggles which can be tightly sealed.

and/or

facial protection

Protective eye equipment should conform to EN166.

Skin protection:

Wear protective equipment.

Protective clothing that covers arms and legs.

apron

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

Wash off any dirt that gets onto the skin with lots of soap and water, skin care.

Avoid skin-contact.

Do not breathe dust and vapors.

Store working clothes separately.

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.

Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------|------------------------------------|
| Appearance | liquid viscous, Liquid black |
| Odor | aromatic |
| Odour threshold | No data available / Not applicable |
| pH | No data available / Not applicable |

| | |
|---|---|
| Melting point | No data available / Not applicable |
| Solidification temperature | No data available / Not applicable |
| Initial boiling point | Polymerization may occur at elevated temperature. |
| Flash point | > 93 °C (> 199.4 °F); Open cup |
| Evaporation rate | No data available / Not applicable |
| Flammability | No data available / Not applicable |
| Explosive limits | No data available / Not applicable |
| Vapour pressure | No data available / Not applicable |
| Relative vapour density: | No data available / Not applicable |
| Density (20 °C (68 °F)) | 1,76 g/cm ³ |
| Bulk density | No data available / Not applicable |
| Solubility | No data available / Not applicable |
| Solubility (qualitative) (20 °C (68 °F); Solvent: Water) | Not miscible or difficult to mix |
| Partition coefficient: n-octanol/water | No data available / Not applicable |
| Auto-ignition temperature | No data available / Not applicable |
| Decomposition temperature | No data available / Not applicable |
| Viscosity | No data available / Not applicable |
| Viscosity (kinematic) | No data available / Not applicable |
| Explosive properties | No data available / Not applicable |
| Oxidising properties | No data available / Not applicable |

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with alcohols and amines.

Reacts with oxidants, acids and lyes

Polymerization may occur at elevated temperature or in the presence of incompatible materials.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Danger of decomposition if exposed to heat.

Avoid moisture.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

Hydrocarbons

Irritating organic vapours.

carbon oxides.

May produce fumes when heated to decomposition. Fumes may contain carbon monoxide and other toxic fumes.

See section 5.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|--|---------------|---------------|---------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | LD50 | > 2.000 mg/kg | rat | EU Method B.1 tris (Acute Oral Toxicity) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | LD50 | > 5.050 mg/kg | rat | not specified |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 420 (Acute Oral Toxicity) |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxymethylene))-bis- oxirane 85954-11-6 | LD50 | 3.563 mg/kg | rat | EU Method B.1 bis (Acute Oral Toxicity) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | LD50 | 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|--|---------------|---------------|---------------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | LD50 | > 2.000 mg/kg | not specified | not specified |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | LD50 | > 2.000 mg/kg | rat | EU Method B.3 (Acute Toxicity (Dermal)) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Test atmosphere | Exposure time | Species | Method |
|---|---------------|-------------|-----------------|------------------|---------|--|
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | LC50 | > 5,19 mg/l | dust/mist | 4 h | rat | OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method) |

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|--|--------------------------|------------------|---------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | moderately irritating | 24 h | rabbit | other guideline: |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | moderately irritating | 24 h | rabbit | Draize Test |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | not irritating | 4 h | rabbit | EU Method B.4 (Acute Toxicity: Dermal Irritation / Corrosion) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|--|------------------------|------------------|---------|---|
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | slightly irritating | 24 h | rabbit | EU Method B.5 (Acute Toxicity: Eye Irritation / Corrosion) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Test type | Species | Method |
|--|-----------------|---------------------------------------|------------|--|
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | not sensitising | Buehler test | guinea pig | EU Method B.6 (Skin Sensitisation) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | sensitising | Guinea pig maximisation test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|--|----------|--|--|---------|---|
| hexahydromethylphthalic anhydride 25550-51-0 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| hexahydromethylphthalic anhydride 25550-51-0 | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| hexahydromethylphthalic anhydride 25550-51-0 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay) |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | positive | bacterial gene mutation assay | with and without | | not specified |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | positive | | with and without | | not specified |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | no data | in vitro mammalian chromosome aberration test | with and without | | not specified |
| Methyltetrahydrophthalic anhydride 34090-76-1 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | positive | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | negative | oral: gavage | | mouse | not specified |
| 2,2'-((3,5',5,5'- tetramethyl-(1,1'- biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | positive | intraperitoneal | | mouse | EU Method B.12 (Mutagenicity) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | negative | oral: gavage | | rat | OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo) |

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous components CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|--|------------------|-------------------------|---|---------|-------------|--|
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | not carcinogenic | dermal | 2 y daily | mouse | male | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | not carcinogenic | oral: gavage | 2 y daily | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result / Value | Test type | Route of application | Species | Method |
|--|---|-----------------------------|-------------------------|---------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | NOAEL P 450 mg/kg | screening | oral: gavage | rat | OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | NOAEL P >= 50 mg/kg NOAEL F1 >= 750 mg/kg NOAEL F2 >= 750 mg/kg | Two generation study | oral: gavage | rat | OECD Guideline 416 (Two- Generation Reproduction Toxicity Study) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | NOAEL P > 750 mg/kg NOAEL F1 750 mg/kg NOAEL F2 750 mg/kg | two- generation study | oral: gavage | rat | OECD Guideline 416 (Two- Generation Reproduction Toxicity Study) |

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|--|-----------------|-------------------------|--|---------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | NOAEL 450 mg/kg | oral: gavage | 28 d once a day, 7 days a week | rat | OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | NOAEL 50 mg/kg | oral: gavage | 14 w daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | NOAEL 5 mg/kg | oral: gavage | 91 d daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | NOAEL 250 mg/kg | oral: gavage | 13 w daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |

Aspiration hazard:

No data available.

SECTION 12: Ecological information**General ecological information:**

Do not empty into drains / surface water / ground water.

12.1. Toxicity**Toxicity (Fish):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|--------------|---------------|---------------------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | LC50 | 500 mg/l | 48 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | LC50 | > 1.000 mg/l | | | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | LC50 | 1,75 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2,2'-((3,5',5,5'-tetramethyl- (1,1'-biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | LC50 | > 0,1 mg/l | 24 h | Oncorhynchus mykiss | EU Method C.1 (Acute Toxicity for Fish) |
| 3,4-Epoxy cyclohexyl methyl- 3,4-epoxy cyclohexyl carboxylate 2386-87-0 | LC50 | 24 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | LC50 | > 100 mg/l | 96 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | LC50 | 5,7 mg/l | 96 h | Leuciscus idus | OECD Guideline 203 (Fish, Acute Toxicity Test) |

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|--------------|---------------|---------------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | EC50 | > 100 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | EC50 | > 1.000 mg/l | | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | EC50 | 1,7 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2,2'-((3,5',5,5'-tetramethyl- (1,1'-biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | EC50 | > 0,15 mg/l | 24 h | Daphnia magna | EU Method C.2 (Acute Toxicity for Daphnia) |
| 3,4-Epoxy cyclohexyl methyl- 3,4-epoxy cyclohexyl carboxylate 2386-87-0 | EC50 | 40 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | EC50 | 300 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Methyltetrahydrophthalic anhydride | EC50 | 130 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

| | | | | | |
|---|------|-----------|------|---------------|--|
| 34090-76-1 | | | | | Immobilisation Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | EC50 | 2,55 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|------------|---------------|---------------|---|
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | NOEC | 0,3 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | NOEC | 0,006 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | NOEC | 0,3 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|--------------|---------------|---|--|
| hexahydromethylphthalic anhydride 25550-51-0 | EC50 | 135 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| hexahydromethylphthalic anhydride 25550-51-0 | NOEC | 32 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | EC50 | > 1.000 mg/l | | | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | EC50 | > 11 mg/l | 72 h | Scenedesmus capricornutum | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | NOEC | 4,2 mg/l | 72 h | Scenedesmus capricornutum | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-((3,5',5,5'-tetramethyl- (1,1'-biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | NOEC | > 0,15 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | EU Method C.3 (Algal Inhibition test) |
| 2,2'-((3,5',5,5'-tetramethyl- (1,1'-biphenyl)-4,4'-diyl)- bis(oxyethylene))-bis- oxirane 85954-11-6 | EC50 | > 0,15 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | EU Method C.3 (Algal Inhibition test) |
| 3,4-Epoxy cyclohexyl methyl- 3,4-epoxy cyclohexyl carboxylate 2386-87-0 | EC50 | > 110 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3,4-Epoxy cyclohexyl methyl- 3,4-epoxy cyclohexyl carboxylate 2386-87-0 | NOEC | 30 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | EC50 | 0,061 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | NOEC | 0,012 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | EC50 | 79 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | NOEC | 32 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | EC50 | 1,8 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|--------------|---------------|------------------------------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | EC20 | 95,3 mg/l | 3 h | activated sludge, domestic | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | EC0 | > 1.000 mg/l | | not specified | not specified |
| reaction product: bisphenol-A- (epichlorhydrin); epoxy resin | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |

| | | | | | |
|--|-------|--------------|-----|---|--|
| (number average molecular weight ≤ 700) 25068-38-6 | | | | | |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | EC10 | 409 mg/l | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | EC50 | > 1.000 mg/l | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | EC 50 | > 1.000 mg/l | 3 h | | ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge) |
| Bisphenol-F epichlorhydrin resin; MW < 700 9003-36-5 | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |

12.2. Persistence and degradability

The product is not biodegradable.

| Hazardous substances CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|--|----------------------------|-----------|---------------|---------------|---|
| hexahydromethylphthalic anhydride 25550-51-0 | not readily biodegradable. | aerobic | 2 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 25068-38-6 | not readily biodegradable. | aerobic | 5 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | not readily biodegradable. | aerobic | 71 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite 121888-68-4 | not readily biodegradable. | aerobic | 25 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| Methyltetrahydrophthalic anhydride 34090-76-1 | | aerobic | 90 % | 30 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| Bisphenol-F epichlorhydrin resin; MW < 700 9003-36-5 | not readily biodegradable. | aerobic | 0 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |

12.3. Bioaccumulative potential

No data available.

| Hazardous substances CAS-No. | Bioconcentration factor (BCF) | Exposure time | Temperature | Species | Method |
|---|-------------------------------|---------------|-------------|------------|---|
| hexahydromethylphthalic anhydride 25550-51-0 | 11,12 | | | calculated | QSAR (Quantitative Structure Activity Relationship) |

12.4. Mobility in soil

Cured adhesives are immobile.

| Hazardous substances CAS-No. | LogPow | Temperature | Method |
|---|-----------|-------------|--|
| hexahydromethylphthalic anhydride 25550-51-0 | 2,59 | 25 °C | QSAR (Quantitative Structure Activity Relationship) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | 3,242 | 25 °C | EU Method A.8 (Partition Coefficient) |
| 2,2'-((3,5',5,5'-tetramethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(oxymethylene))-bis-oxirane 85954-11-6 | 2,9 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | 1,34 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | 2,7 - 3,6 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |

12.5. Results of PBT and vPvB assessment

| Hazardous substances CAS-No. | PBT / vPvB |
|---|---|
| hexahydromethylphthalic anhydride 25550-51-0 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Quartz (SiO ₂), <1% respirable 14808-60-7 | According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances. |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate 2386-87-0 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Special waste incineration with the approval of the responsible local authority.

Disposal of uncleaned packages:

Disposal must be made according to official regulations.

Use packages for recycling only when totally empty.

Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number

| | |
|------|------|
| ADR | 3082 |
| RID | 3082 |
| ADN | 3082 |
| IMDG | 3082 |
| IATA | 3082 |

14.2. UN proper shipping name

| | |
|------|---|
| ADR | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quaternary Ammonium compound) |
| RID | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quaternary Ammonium compound) |
| ADN | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quaternary Ammonium compound) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quaternary Ammonium compound) |
| IATA | Environmentally hazardous substance, liquid, n.o.s. (Quaternary Ammonium compound) |

14.3. Transport hazard class(es)

| | |
|------|---|
| ADR | 9 |
| RID | 9 |
| ADN | 9 |
| IMDG | 9 |
| IATA | 9 |

14.4. Packing group

| | |
|------|-----|
| ADR | III |
| RID | III |
| ADN | III |
| IMDG | III |
| IATA | III |

14.5. Environmental hazards

| | |
|------|------------------|
| ADR | not applicable |
| RID | not applicable |
| ADN | not applicable |
| IMDG | Marine pollutant |
| IATA | not applicable |

14.6. Special precautions for user

| | |
|-----|----------------|
| ADR | not applicable |
|-----|----------------|

| | |
|------|----------------|
| | Tunnelcode: |
| RID | not applicable |
| ADN | not applicable |
| IMDG | not applicable |
| IATA | not applicable |

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), 197 (IATA), 969 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

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

VOC content < 3 %
(2010/75/EC)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: WGK = 2, significantly water endangering mixture. Classification according to the mixture rules in German AwSV regulation annex 1, number 5.2 from 18. April 2017.

Storage class according to TRGS 510: 10

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

- 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.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Further information:

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This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

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