



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

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Loctite EA 3450

SDS No. : 467742
V005.0

Revision: 13.12.2023

printing date: 18.12.2023

Replaces version from: 11.07.2023

Kit/Multi-component Product

1. SDS No.378937 - Loctite EA 3450 A
2. SDS No.378938 - LOCTITE EA 3450 B



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

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Loctite EA 3450 A

SDS No. : 378937
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Loctite EA 3450 A

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

Intended use:
Epoxy resin

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

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.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 irritation | Category 2 |
| H319 Causes serious eye irritation. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| 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

2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Bisphenol-F epichlorhydrin resin; MW<700

| | |
|---------------------------------|---|
| Signal word: | Warning |
| Hazard statement: | H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects. |
| Precautionary statement: | P273 Avoid release to the environment. |
| Prevention | P280 Wear protective gloves. |
| Precautionary statement: | P302+P352 IF ON SKIN: Wash with plenty of soap and water. |
| Response | P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention. |

2.3. Other hazards

None if used properly.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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

| Hazardous components CAS-No. EC Number REACH-Reg No. | Concentration | Classification | Specific Conc. Limits, M-factors and ATEs | Add. Information |
|--|---------------|--|---|------------------|
| 2,2'-(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 216-823-5 01-2119456619-26 | 25- 50 % | Aquatic Chronic 2, H411 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 | Eye Irrit. 2; H319; C \geq 5 % Skin Irrit. 2; H315; C \geq 5 % | |
| Barite (Ba(SO ₄)) 13462-86-7 236-664-5 | 20- 40 % | | | EU OEL |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- 01-2119454392-40 | 10- 20 % | Skin Irrit. 2, Dermal, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411 | | |

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.

For full text of the H - statements and other abbreviations see section 16 "Other information".

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

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

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

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:

water, carbon dioxide, foam, powder

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

Dispose of contaminated material as waste according to Section 13.

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.

See advice in section 8

Hygiene measures:

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

7.2. Conditions for safe storage, including any incompatibilities

- Store only in the original container.
- Ensure good ventilation/extraction.
- Store in a cool, dry place.
- Refer to Technical Data Sheet

7.3. Specific end use(s)

Epoxy resin

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 |
|---|-----|-------------------|-------------------------------------|--|-----------------|
| Barite (Ba(SO ₄)) 13462-86-7 [BARIUM (SOLUBLE COMPOUNDS AS BA)] | | 0,5 | Time Weighted Average (TWA): | Indicative | ECTLV |
| Barite (Ba(SO ₄)) 13462-86-7 | | | Short Term Exposure Classification: | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages. | TRGS 900 |
| Barite (Ba(SO ₄)) 13462-86-7 | | 0,5 | Exposure limit(s): | 1 | TRGS 900 |
| Talc (Mg ₃ H ₂ (SiO ₃) ₄) 14807-96-6 | | | Short Term Exposure Classification: | Category II: substances with a resorptive effect. | TRGS 900 |
| Talc (Mg ₃ H ₂ (SiO ₃) ₄) 14807-96-6 | | 10 | Exposure limit(s): | 2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7). | TRGS 900 |
| Talc (Mg ₃ H ₂ (SiO ₃) ₄) 14807-96-6 | | 1,25 | 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 | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | aqua (freshwater) | | 0,006 mg/l | | | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | aqua (marine water) | | 0,001 mg/l | | | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | sediment (freshwater) | | | | 0,341 mg/kg | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | sediment (marine water) | | | | 0,034 mg/kg | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Soil | | | | 0,065 mg/kg | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | oral | | | | 11 mg/kg | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Freshwater - intermittent | | 0,018 mg/l | | | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Marine water - intermittent | | 0,002 mg/l | | | | |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Air | | | | | | no hazard identified |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | aqua (freshwater) | | 0,003 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | aqua (marine water) | | 0,0003 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | sewage treatment plant (STP) | | 10 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | sediment (freshwater) | | | | 0,294 mg/kg | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | sediment (marine water) | | | | 0,0294 mg/kg | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | Soil | | | | 0,237 mg/kg | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | aqua (intermittent releases) | | 0,0254 mg/l | | | | |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | Air | | | | | | no hazard identified |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | Predator | | | | | | no potential for bioaccumulation |

Derived No-Effect Level (DNEL):

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|--|--------------------|-------------------|---|---------------|---------------|----------------------|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Workers | dermal | Long term exposure - systemic effects | | 0,75 mg/kg | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Workers | Inhalation | Long term exposure - systemic effects | | 4,93 mg/m3 | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | dermal | Long term exposure - systemic effects | | 0,0893 mg/kg | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | oral | Long term exposure - systemic effects | | 0,5 mg/kg | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | inhalation | Long term exposure - systemic effects | | 0,87 mg/m3 | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Workers | Inhalation | Long term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Workers | Inhalation | Acute/short term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Workers | dermal | Long term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Workers | dermal | Acute/short term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | Inhalation | Long term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | Inhalation | Acute/short term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | dermal | Long term exposure - local effects | | | no hazard identified |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | General population | dermal | Acute/short term exposure - local effects | | | no hazard identified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | Workers | Inhalation | Long term exposure - systemic effects | | 29,39 mg/m3 | no hazard identified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | Workers | dermal | Long term exposure - systemic effects | | 104,15 mg/kg | no hazard identified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | Workers | dermal | Acute/short term exposure - local effects | | 0,0083 mg/cm2 | no hazard identified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | General population | Inhalation | Long term exposure - systemic effects | | 8,7 mg/m3 | no hazard identified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | General population | dermal | Long term exposure - systemic effects | | 62,5 mg/kg | no hazard identified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) ----- | General population | oral | Long term exposure - systemic effects | | 6,25 mg/kg | no hazard identified |

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; ≥ 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; ≥ 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:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

Skin protection:

Wear suitable protective clothing.

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

Advices to personal protection equipment:

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**

| | |
|---|---|
| Delivery form | liquid |
| Colour | black |
| Odor | characteristic |
| Physical state | liquid |
| Melting point | Not applicable, Product is a liquid |
| Solidification temperature | < 5 °C (< 41 °F) |
| Initial boiling point | > 250 °C (> 482 °F) no method / method unknown |
| Flammability | The product is not flammable. |
| Explosive limits | Not applicable, The product is not flammable. |
| Flash point | > 93 °C (> 199.4 °F); no method / method unknown |
| Auto-ignition temperature | Not applicable, The product is not flammable. |
| Decomposition temperature | Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use |
| pH | Not applicable, Product is non-soluble (in water). |
| Viscosity (kinematic) (40 °C (104 °F);) | > 20,5 mm ² /s |
| Solubility (qualitative) (20 °C (68 °F); Solvent: Water) | Insoluble |
| Partition coefficient: n-octanol/water | Not applicable |

| | |
|-------------------------------------|--|
| Vapour pressure (50 °C (122 °F)) | Mixture < 700 mbar;no method / method unknown |
| Vapour pressure (20 °C (68 °F)) | < 700 mbar |
| Density (25 °C (77 °F)) | 1,7 g/cm ³ no method / method unknown |
| Relative vapour density: (20 °C) | > 1 |
| Particle characteristics | Not applicable Product is a liquid |

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with strong oxidants.
Reaction with strong acids.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Stable under normal conditions of storage and use.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**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 |
|---|---------------|-----------------------|---------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 420 (Acute Oral Toxicity) |
| Barite (Ba(SO ₄)) 13462-86-7 | LD50 | 30.700 - 36.400 mg/kg | rat | not specified |
| Barite (Ba(SO ₄)) 13462-86-7 | LD50 | > 15.000 mg/kg | rat | not specified |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | LD50 | > 5.000 mg/kg | rat | equivalent or similar to 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 |
|---|---------------|---------------|---------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | LD50 | > 2.000 mg/kg | rat | equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity) |

Acute inhalative toxicity:

No data available.

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 |
|---|--------------------------|------------------|---------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | moderately irritating | 24 h | rabbit | Draize Test |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | irritating | 4 h | rabbit | equivalent or similar to 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 |
|---|----------------|------------------|---------|--|
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | not irritating | | rabbit | equivalent or similar to 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 |
|---|-------------|---------------------------------------|---------|--|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | 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 |
|--|----------|--|--------------------------------------|---------|--|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | positive | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | negative | oral: gavage | | mouse | not specified |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | 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 |
|--|------------------|----------------------|--|---------|-------------|--|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | not carcinogenic | dermal | 2 y daily | mouse | male | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | 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 |
|--|---|----------------------|----------------------|---------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane 1675-54-3 | 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 ----- | 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 |
|--|-----------------|-------------------------|--|---------|--|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | NOAEL 50 mg/kg | oral: gavage | 14 w daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | 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.

11.2 Information on other hazards

not applicable

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.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|-----------------------------|---------------|---------------------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | LC50 | 1,2 mg/l | 96 h | Oncorhynchus mykiss | EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians) |
| Barite (Ba(SO ₄)) 13462-86-7 | LC50 | Toxicity > Water solubility | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | NOEC | Toxicity > Water solubility | 33 d | Danio rerio | OECD Guideline 210 (fish early life stage toxicity test) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | LC50 | 5,7 mg/l | 96 h | Leuciscus idus | OECD Guideline 203 (Fish, Acute Toxicity Test) |

Toxicity (aquatic invertebrates):

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

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|-----------------------------|---------------|---------------|--|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | EC50 | 2,7 mg/l | 48 h | Daphnia magna | other guideline: |
| Barite (Ba(SO ₄)) 13462-86-7 | EC50 | Toxicity > Water solubility | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | EC50 | 2,55 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

Chronic toxicity (aquatic invertebrates):

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|-----------------------------|---------------|---------------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | NOEC | 0,3 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | NOEC | Toxicity > Water solubility | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | 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.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|-----------------------------|---------------|--|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | EC50 | > 11 mg/l | 72 h | Scenedesmus capricornutum | other guideline: |
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | NOEC | 4,2 mg/l | 72 h | Scenedesmus capricornutum | other guideline: |
| Barite (Ba(SO ₄)) 13462-86-7 | EC50 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | NOEC | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | EC50 | 1,8 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |

Toxicity (microorganisms):

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

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|---------------|---------------|------------------------------|------------------|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |
| Barite (Ba(SO ₄)) 13462-86-7 | EC0 | > 10.000 mg/l | 30 min | | not specified |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |

12.2. Persistence and degradability

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|--|----------------------------|-----------|---------------|---------------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | not readily biodegradable. | aerobic | 5 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | not readily biodegradable. | aerobic | 0 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |

12.3. Bioaccumulative potential

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Bioconcentration factor (BCF) | Exposure time | Temperature | Species | Method |
|---|-------------------------------|---------------|-------------|---------------------|------------------|
| Barite (Ba(SO ₄)) 13462-86-7 | 74,4 | | | Lepomis macrochirus | other guideline: |

12.4. Mobility in soil

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | LogPow | Temperature | Method |
|--|---------------|-------------|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | > 2,64 - 3,78 | 25 °C | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | 2,7 - 3,6 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |

12.5. Results of PBT and vPvB assessment

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | PBT / vPvB |
|--|---|
| 2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Barite (Ba(SO ₄)) 13462-86-7 | According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances. |
| Bisphenol-F epichlorhydrin resin; MW<700 ----- | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of in accordance with local and national regulations.

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

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

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 or ID 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. (Bisphenol-A Epichlorhydrin resin) |
| RID | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin) |
| ADN | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin) |
| IATA | Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-A Epichlorhydrin resin) |

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 | Environmentally Hazardous |
| RID | Environmentally Hazardous |
| ADN | Environmentally Hazardous |
| IMDG | Marine Pollutant |
| IATA | Environmentally Hazardous |

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), A197 (IATA), 2.10.2.7 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

| | |
|---|----------------|
| Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009): | Not applicable |
| Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): | Not applicable |
| Persistent organic pollutants (Regulation (EU) 2019/1021): | Not applicable |
| VOC content (2010/75/EC) | < 3 % |

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

| | |
|--------------------------------------|---|
| WGK: | WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV)) Classification according to AwSV, Annex 1 (5.2) |
| 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.

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

| | |
|-------------|---|
| ED: | Substance identified as having endocrine disrupting properties |
| EU OEL: | Substance with a Union workplace exposure limit |
| EU EXPLD 1: | Substance listed in Annex I, Reg (EC) No. 2019/1148 |
| EU EXPLD 2 | Substance listed in Annex II, Reg (EC) No. 2019/1148 |
| SVHC: | Substance of very high concern (REACH Candidate List) |
| PBT: | Substance fulfilling persistent, bioaccumulative and toxic criteria |
| PBT/vPvB: | Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria |
| vPvB: | Substance fulfilling very persistent and very bioaccumulative criteria |

Further information:

This Safety Data Sheet has been produced for sales from Henkel to parties purchasing from Henkel, is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult with the respective Safety Data Sheet of the concerned territory to ensure compliance or liaise with Henkel's Product Safety and Regulatory Affairs Department (SDSinfo.Adhesive@henkel.com) prior to export to other territories than the European Union.

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.

Dear Customer,

Henkel is committed to creating a sustainable future by promoting opportunities along the entire value chain. If you would like to contribute by switching from a paper to the electronic version of SDS, please contact the local Customer Service representative. We recommend to use a non-personal email address (e.g. SDS@your_company.com).

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.



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

SDS No. : 378938

V005.0

LOCTITE EA 3450 B

Revision: 13.12.2023

printing date: 18.12.2023

Replaces version from: 11.07.2023

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

1.1. Product identifier

LOCTITE EA 3450 B

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

Intended use:

Epoxy Hardener

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

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.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. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| Toxic to reproduction | Category 1B |
| H360D May damage the unborn child. | |
| Chronic hazards to the aquatic environment | Category 3 |
| H412 Harmful to aquatic life with long lasting effects. | |

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Contains**

Pentaerythritol-PO-mercaptoglycerol

3,3'-Oxybis(ethyleneoxy)bis(propylamine)
N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine

2-ethylhexanoic acid

Signal word:

Danger

Hazard statement:

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H360D May damage the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Supplemental information

Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
Restricted to professional users.

**Precautionary statement:
Prevention**

P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.

**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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.

2.3. Other hazards

None if used properly.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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

| Hazardous components CAS-No. EC Number REACH-Reg No. | Concentration | Classification | Specific Conc. Limits, M- factors and ATEs | Add. Information |
|---|----------------------|--|---|-----------------------------|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 701-196-7 01-2120118957-46 | 25- 50 % | Skin Sens. 1B, H317 Aquatic Chronic 3, H412 | | |
| Barite (Ba(SO ₄)) 13462-86-7 236-664-5 | 20- 40 % | | | EU OEL |
| 3,3'- Oxybis(ethyleneoxy)bis(propyla mine) 4246-51-9 224-207-2 01-2119963377-26 | 1- < 5 % | Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 | dermal:ATE = 2.500 mg/kg | |
| N'-(3-Aminopropyl)-N,N- dimethylpropane-1,3-diamine 10563-29-8 234-148-4 01-2119970376-29 | 1- < 3 % | Acute Tox. 4, Oral, H302 Skin Corr. 1A, H314 Skin Sens. 1B, H317 Acute Tox. 4, Dermal, H312 Eye Dam. 1, H318 | | |
| Titanium dioxide 13463-67-7 236-675-5 01-2119489379-17 | 1- < 5 % | Carc. 2, Inhalation, H351 | | |
| 2-ethylhexanoic acid 149-57-5 205-743-6 01-2119488942-23 | 0,3- < 1 % | Repr. 1B, H360D | | |

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.

For full text of the H - statements and other abbreviations see section 16 "Other information".

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

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

SKIN: Rash, Urticaria.

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

SKIN: Redness, inflammation.

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:**

water, carbon dioxide, foam, powder

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.

Ensure adequate ventilation.

Wear protective equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

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**

Avoid skin and eye contact.

See advice in section 8

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

Ensure good ventilation/extraction.

Store in a cool, well-ventilated place.

Refer to Technical Data Sheet

Never allow product to get in contact with water during storage

7.3. Specific end use(s)

Epoxy Hardener

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 |
|---|-----|-------------------|-------------------------------------|--|-----------------|
| Barite (Ba(SO ₄)) 13462-86-7 [BARIUM (SOLUBLE COMPOUNDS AS BA)] | | 0,5 | Time Weighted Average (TWA): | Indicative | ECTLV |
| Barite (Ba(SO ₄)) 13462-86-7 | | | Short Term Exposure Classification: | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages. | TRGS 900 |
| Barite (Ba(SO ₄)) 13462-86-7 | | 0,5 | Exposure limit(s): | 1 | TRGS 900 |
| Titanium dioxide 13463-67-7 | | | Short Term Exposure Classification: | Category II: substances with a resorptive effect. | TRGS 900 |
| Titanium dioxide 13463-67-7 | | 10 | Exposure limit(s): | 2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7). | TRGS 900 |
| Titanium dioxide 13463-67-7 | | 1,25 | 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 | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | aqua (freshwater) | | 0,07 mg/l | | | | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | Freshwater - intermittent | | 0,12 mg/l | | | | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | aqua (marine water) | | 0,007 mg/l | | | | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | sediment (freshwater) | | | | 0,322 mg/kg | | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | sediment (marine water) | | | | 0,032 mg/kg | | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | aqua (freshwater) | | 0,22 mg/l | | | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | aqua (marine water) | | 0,022 mg/l | | | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | aqua (intermittent releases) | | 2,2 mg/l | | | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | sewage treatment plant (STP) | | 125 mg/l | | | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | sediment (freshwater) | | | | 1,1 mg/kg | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | sediment (marine water) | | | | 0,11 mg/kg | | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | Soil | | | | 0,091 mg/kg | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | aqua (freshwater) | | 9,2 µg/l | | | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | aqua (marine water) | | 0,92 µg/l | | | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | aqua (intermittent releases) | | 92 µg/l | | | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | Sewage treatment plant | | 18,1 mg/l | | | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | sediment (freshwater) | | | | 0,0336 mg/kg | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | sediment (marine water) | | | | 0,00336 mg/kg | | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | Soil | | | | 0,00132 mg/kg | | |
| 2-Ethylhexanoic acid | aqua | | 0,398 mg/l | | | | |

| | | | | | | | |
|----------------------------------|------------------------------------|--|-----------|--|----------------|--|--|
| 149-57-5 | (freshwater) | | | | | | |
| 2-Ethylhexanoic acid 149-57-5 | aqua (marine water) | | 0,04 mg/l | | | | |
| 2-Ethylhexanoic acid 149-57-5 | aqua (intermittent releases) | | 1 mg/l | | | | |
| 2-Ethylhexanoic acid 149-57-5 | sewage treatment plant (STP) | | 71,7 mg/l | | | | |
| 2-Ethylhexanoic acid 149-57-5 | sediment (freshwater) | | | | 4,74 mg/kg | | |
| 2-Ethylhexanoic acid 149-57-5 | sediment (marine water) | | | | 0,474 mg/kg | | |
| 2-Ethylhexanoic acid 149-57-5 | Soil | | | | 0,712 mg/kg | | |

Derived No-Effect Level (DNEL):

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|--|--------------------|-------------------|--|---------------|------------------------|---------|
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | Workers | inhalation | Long term exposure - systemic effects | | 22 mg/m ³ | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | Workers | dermal | Long term exposure - systemic effects | | 2,7 mg/kg | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | General population | inhalation | Long term exposure - systemic effects | | 6,52 mg/m ³ | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | General population | dermal | Long term exposure - systemic effects | | 1,61 mg/kg | |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptan 72244-98-5 | General population | oral | Long term exposure - systemic effects | | 1,9 mg/kg | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | Workers | inhalation | Long term exposure - systemic effects | | 59 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | Workers | inhalation | Acute/short term exposure - systemic effects | | 176 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | Workers | inhalation | Long term exposure - local effects | | 13 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | Workers | dermal | Long term exposure - systemic effects | | 8,3 mg/kg | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | General population | inhalation | Long term exposure - systemic effects | | 17 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | General population | inhalation | Acute/short term exposure - systemic effects | | 52 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | General population | inhalation | Long term exposure - local effects | | 0,5 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | General population | inhalation | Acute/short term exposure - local effects | | 6,5 mg/m ³ | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | General population | dermal | Long term exposure - systemic effects | | 5 mg/kg | |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | General population | oral | Long term exposure - systemic effects | | 5 mg/kg | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | Workers | inhalation | Long term exposure - systemic effects | | 0,35 mg/m ³ | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | Workers | dermal | Long term exposure - systemic effects | | 0,05 mg/kg | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | General population | inhalation | Long term exposure - systemic effects | | 0,65 mg/m ³ | |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | General population | oral | Long term exposure - systemic effects | | 0,2 mg/kg | |
| Titanium dioxide 13463-67-7 | Workers | inhalation | Long term exposure - local effects | | 0,17 mg/m ³ | |

| | | | | | | |
|----------------------------------|--------------------|------------|---------------------------------------|--|-------------|--|
| Titanium dioxide 13463-67-7 | General population | inhalation | Long term exposure - local effects | | 0,028 mg/m3 | |
| 2-Ethylhexanoic acid 149-57-5 | Workers | dermal | Long term exposure - systemic effects | | 2 mg/kg | |
| 2-Ethylhexanoic acid 149-57-5 | Workers | inhalation | Long term exposure - systemic effects | | 14 mg/m3 | |
| 2-Ethylhexanoic acid 149-57-5 | General population | dermal | Long term exposure - systemic effects | | 1 mg/kg | |
| 2-Ethylhexanoic acid 149-57-5 | General population | inhalation | Long term exposure - systemic effects | | 3,5 mg/m3 | |
| 2-Ethylhexanoic acid 149-57-5 | General population | oral | Long term exposure - systemic effects | | 1 mg/kg | |

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; >= 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; >= 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:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

Skin protection:

Wear suitable protective clothing.

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

Advices to personal protection equipment:

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

Delivery form

liquid

Colour

white

Odor

characteristic

| | |
|---|---|
| Physical state | liquid |
| Melting point | Not applicable, Product is a liquid |
| Solidification temperature | < 5 °C (< 41 °F) |
| Initial boiling point | > 180 °C (> 356 °F)no method / method unknown |
| Flammability | The product is not flammable. |
| Explosive limits | Not applicable, The product is not flammable. |
| Flash point | > 93 °C (> 199.4 °F); no method / method unknown |
| Auto-ignition temperature | Not applicable, The product is not flammable. |
| Decomposition temperature | Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use |
| pH | Not applicable, Product is non-soluble (in water). |
| Viscosity (kinematic) (40 °C (104 °F);) | > 20,5 mm ² /s |
| Solubility (qualitative) (20 °C (68 °F); Solvent: Water) | Not soluble |
| Partition coefficient: n-octanol/water | Not applicable Mixture |
| Vapour pressure (50 °C (122 °F)) | < 700 mbar;no method / method unknown |
| Vapour pressure (20 °C (68 °F)) | < 700 mbar |
| Density (25 °C (77 °F)) | 1,75 g/cm ³ no method / method unknown |
| Relative vapour density: (20 °C) | > 1 |
| Particle characteristics | Not applicable Product is a liquid |

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with strong oxidants.
Reaction with strong acids.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Stable under normal conditions of storage and use.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

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

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 |
|--|---------------|--------------------------|---------|---|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | LD50 | 2.600 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Barite (Ba(SO ₄)) 13462-86-7 | LD50 | 30.700 - 36.400 mg/kg | rat | not specified |
| Barite (Ba(SO ₄)) 13462-86-7 | LD50 | > 15.000 mg/kg | rat | not specified |
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | LD50 | 3.160 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| N'-(3-Aminopropyl)-N,N- dimethylpropane-1,3- diamine 10563-29-8 | LD50 | 1.669 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| Titanium dioxide 13463-67-7 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure) |
| 2-ethylhexanoic acid 149-57-5 | LD50 | 2.043 mg/kg | rat | equivalent or similar to 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 |
|--|--|----------------|---------|---|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | LD50 | > 10.200 mg/kg | rabbit | equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity) |
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | Acute toxicity estimate (ATE) | 2.500 mg/kg | | Expert judgement |
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | LD50 | > 2.150 mg/kg | rat | equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity) |
| N'-(3-Aminopropyl)-N,N- dimethylpropane-1,3- diamine 10563-29-8 | LD50 | 1.310 mg/kg | rat | not specified |
| Titanium dioxide 13463-67-7 | LD50 | > 10.000 mg/kg | rabbit | not specified |
| 2-ethylhexanoic acid 149-57-5 | 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 |
|---------------------------------|---------------|-------------|-----------------|------------------|---------|---------------|
| Titanium dioxide 13463-67-7 | LC50 | > 6,82 mg/l | dust | 4 h | rat | not specified |

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 |
|---|--------------------------------|------------------|---------|--|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | Sub-Category 1B (corrosive) | | rabbit | equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Titanium dioxide 13463-67-7 | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 2-ethylhexanoic acid 149-57-5 | not irritating | | 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 |
|---|----------------|------------------|---------|---|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | not irritating | | rabbit | equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Titanium dioxide 13463-67-7 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 2-ethylhexanoic acid 149-57-5 | 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 |
|---|-----------------|---------------------------------------|------------|--|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Titanium dioxide 13463-67-7 | not sensitising | Mouse local lymphnode assay (LLNA) | mouse | equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Titanium dioxide 13463-67-7 | not sensitising | Buehler test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |

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 |
|---|----------|--|--|---------|--|
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | negative | in vitro mammalian cell micronucleus test | with and without | | OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Titanium dioxide 13463-67-7 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Titanium dioxide 13463-67-7 | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| Titanium dioxide 13463-67-7 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Titanium dioxide 13463-67-7 | negative | in vitro mammalian cell micronucleus test | without | | equivalent or similar to OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| 2-ethylhexanoic acid 149-57-5 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | Ames Test |
| Titanium dioxide 13463-67-7 | negative | oral: gavage | | rat | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |

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 |
|---------------------------------|------------------|-------------------------|---|---------|-------------|---------------|
| Titanium dioxide 13463-67-7 | not carcinogenic | oral: feed | 103 w daily | rat | male/female | not specified |

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 |
|---|---|-----------------------------|-------------------------|---------|---|
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | NOAEL P 600 mg/kg | screening | oral: gavage | rat | OECD Combined Repeated Dose and Reproductive / Developmental Toxicity Screening Test (Precursor Protocol of GL 422) |
| Titanium dioxide 13463-67-7 | NOAEL P >= 1.000 mg/kg NOAEL F1 >= 1.000 mg/kg | one- generation study | oral: feed | rat | OECD Guideline 443 (Extended One-Generation Reproductive 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 |
|---|---------------------|-------------------------|--|---------|---|
| 3,3'- Oxybis(ethyleneoxy)bis(p ropylamine) 4246-51-9 | NOAEL < 100 mg/kg | oral: gavage | 59 days daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Titanium dioxide 13463-67-7 | NOAEL > 1.000 mg/kg | oral: gavage | 92 d daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

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.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|--------------------------------|---------------|-----------------|---|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | LC50 | 87 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | LC50 | Toxicity > Water solubility | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | NOEC | Toxicity > Water solubility | 33 d | Danio rerio | OECD Guideline 210 (fish early life stage toxicity test) |
| 3,3'- Oxybis(ethyleneoxy)bis(propy lamine) 4246-51-9 | LC50 | > 215 - 464 mg/l | 96 h | Leuciscus idus | DIN 38412-15 |
| Titanium dioxide 13463-67-7 | LC50 | Toxicity > Water solubility | 48 h | Leuciscus idus | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2-ethylhexanoic acid 149-57-5 | LC50 | > 100 mg/l | 96 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |

Toxicity (aquatic invertebrates):

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

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|--------------------------------|---------------|---------------|--|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | EC50 | 12 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | EC50 | Toxicity > Water solubility | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 3,3'- Oxybis(ethyleneoxy)bis(propy lamine) 4246-51-9 | EC50 | 218 mg/l | 48 h | Daphnia magna | EU Method C.2 (Acute Toxicity for Daphnia) |
| N'-(3-Aminopropyl)-N,N- dimethylpropane-1,3-diamine 10563-29-8 | EC50 | 9,2 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Titanium dioxide 13463-67-7 | EC50 | Toxicity > Water solubility | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2-ethylhexanoic acid 149-57-5 | EC50 | 913 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

Chronic toxicity (aquatic invertebrates):

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|----------|---------------|---------------|--|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | NOEC | 3,5 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |

| | | | | | |
|---|------|-----------------------------|------|---------------|--|
| Barite (Ba(SO ₄)) 13462-86-7 | NOEC | Toxicity > Water solubility | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Titanium dioxide 13463-67-7 | NOEC | Toxicity > Water solubility | 21 d | Daphnia magna | OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test) |
| 2-ethylhexanoic acid 149-57-5 | NOEC | 18 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.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|-----------------------------|---------------|--|---|
| Pentaerythritol-PO-mercaptoglycerol 72244-98-5 | EC50 | > 733 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Pentaerythritol-PO-mercaptoglycerol 72244-98-5 | NOEC | 338 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | EC50 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | NOEC | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | EC50 | 666 mg/l | 72 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | DIN 38412-09 |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | NOEC | 15,6 mg/l | 72 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | DIN 38412-09 |
| Titanium dioxide 13463-67-7 | EC50 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Titanium dioxide 13463-67-7 | NOEC | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2-ethylhexanoic acid 149-57-5 | EC50 | 500 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2-ethylhexanoic acid 149-57-5 | EC10 | 231,2 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |

Toxicity (microorganisms):

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

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|-----------------------------|---------------|---|--|
| Pentaerythritol-PO-mercaptoglycerol 72244-98-5 | EC50 | > 1.000 mg/l | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Barite (Ba(SO ₄)) 13462-86-7 | EC0 | > 10.000 mg/l | 30 min | | not specified |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | EC10 | 152,5 mg/l | 17 h | Pseudomonas putida | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |
| Titanium dioxide 13463-67-7 | EC0 | Toxicity > Water solubility | 24 h | Pseudomonas fluorescens | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |
| 2-ethylhexanoic acid 149-57-5 | EC10 | 72 mg/l | 17 h | | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |

12.2. Persistence and degradability

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|--|---------------------------------|-----------|---------------|------------------|--|
| Pentaerythritol-PO- mercaptoglycerol 72244-98-5 | not readily biodegradable. | aerobic | 5 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| 3,3'- Oxybis(ethyleneoxy)bis(propy- lamine) 4246-51-9 | not inherently biodegradable | aerobic | < 20 % | 28 d | OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test) |
| 3,3'- Oxybis(ethyleneoxy)bis(propy- lamine) 4246-51-9 | not readily biodegradable. | aerobic | 0 % | 60 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| N'-(3-Aminopropyl)-N,N- dimethylpropane-1,3-diamine 10563-29-8 | readily biodegradable | | 100 % | 28 d | OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test) |
| 2-ethylhexanoic acid 149-57-5 | inherently biodegradable | aerobic | > 70 % | 28 d | OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test) |
| 2-ethylhexanoic acid 149-57-5 | readily biodegradable | aerobic | 99 % | 28 d | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |

12.3. Bioaccumulative potential

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Bioconcentratio n factor (BCF) | Exposure time | Temperature | Species | Method |
|---|-----------------------------------|---------------|-------------|------------------------|------------------|
| Barite (Ba(SO ₄)) 13462-86-7 | 74,4 | | | Lepomis macrochirus | other guideline: |

12.4. Mobility in soil

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | LogPow | Temperature | Method |
|--|--------|-------------|--|
| Pentaerythritol-PO-mercaptoglycerol 72244-98-5 | 1,2 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | -1,25 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | -0,47 | 25 °C | other (calculated) |
| 2-ethylhexanoic acid 149-57-5 | 2,7 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |

12.5. Results of PBT and vPvB assessment

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | PBT / vPvB |
|--|---|
| Pentaerythritol-PO-mercaptoglycerol 72244-98-5 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Barite (Ba(SO ₄)) 13462-86-7 | According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances. |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) 4246-51-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| N'-(3-Aminopropyl)-N,N-dimethylpropane-1,3-diamine 10563-29-8 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Titanium dioxide 13463-67-7 | According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances. |
| 2-ethylhexanoic acid 149-57-5 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of in accordance with local and national regulations.

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

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

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 or ID number

| | |
|------|---------------------|
| ADR | Not dangerous goods |
| RID | Not dangerous goods |
| ADN | Not dangerous goods |
| IMDG | Not dangerous goods |
| IATA | 3334 |

14.2. UN proper shipping name

| | |
|------|---|
| ADR | Not dangerous goods |
| RID | Not dangerous goods |
| ADN | Not dangerous goods |
| IMDG | Not dangerous goods |
| IATA | Aviation regulated liquid, n.o.s. (Polymercaptan) |

14.3. Transport hazard class(es)

| | |
|------|---------------------|
| ADR | Not dangerous goods |
| RID | Not dangerous goods |
| ADN | Not dangerous goods |
| IMDG | Not dangerous goods |
| IATA | 9 |

14.4. Packing group

| | |
|------|---------------------|
| ADR | Not dangerous goods |
| RID | Not dangerous goods |
| ADN | Not dangerous goods |
| IMDG | Not dangerous goods |
| IATA | III |

14.5. Environmental hazards

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

14.6. Special precautions for user

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

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

| | |
|---|----------------|
| Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009): | Not applicable |
| Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): | Not applicable |
| Persistent organic pollutants (Regulation (EU) 2019/1021): | Not applicable |
| 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 1: slightly hazardous to water (Ordinance on facilities for handling substances that are hazardous to water (AwSV)) Classification according to AwSV, Annex 1 (5.2) |
| Storage class according to TRGS 510: | 6.1D |
| General remarks (DE): | This product is in scope of the German regulation "ChemikalienVerbotsVerordnung" |

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:

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
H360D May damage the unborn child.
H412 Harmful to aquatic life with long lasting effects.

| | |
|-------------|---|
| ED: | Substance identified as having endocrine disrupting properties |
| EU OEL: | Substance with a Union workplace exposure limit |
| EU EXPLD 1: | Substance listed in Annex I, Reg (EC) No. 2019/1148 |
| EU EXPLD 2 | Substance listed in Annex II, Reg (EC) No. 2019/1148 |
| SVHC: | Substance of very high concern (REACH Candidate List) |
| PBT: | Substance fulfilling persistent, bioaccumulative and toxic criteria |
| PBT/vPvB: | Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria |
| vPvB: | Substance fulfilling very persistent and very bioaccumulative criteria |

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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