



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

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LOCTITE 3D PRO476 TOUGH LCD BLACK

SDS No. : 693565
V001.0

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

1.1. Product identifier

LOCTITE 3D PRO476 TOUGH LCD BLACK

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

Intended use:
Acrylics

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

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 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-Hydroxyethyl methacrylate

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate

Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide
2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester

Reaction mass of pentamethyl-4-piperidylsebacates
Triacrylate ester
Ethylene dimethacrylate

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:
Prevention**

P273 Avoid release to the environment.
P280 Wear protective gloves.

**Precautionary statement:
Response**

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
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.

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

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. | content | Classification |
|--|--|------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | 212-782-2 01-2119490169-29 | 20- 40 % | Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | 276-957-5 01-2120751202-68 | 10- 20 % | Skin Sens. 1B H317 Aquatic Chronic 2 H411 |
| Isobornyl methacrylate 7534-94-3 | 231-403-1 01-2119886505-27 | 5- < 10 % | Aquatic Chronic 3 H412 |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | 278-355-8 01-2119972295-29 | 1- < 3 % | Repr. 2 H361f Aquatic Chronic 2 H411 Skin Sens. 1B H317 |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | | 1- < 5 % | Eye Irrit. 2 H319 Skin Sens. 1 H317 |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | 915-687-0 01-2119491304-40 | 0,1- < 1 % | Aquatic Acute 1 H400 Aquatic Chronic 1 H410 Skin Sens. 1A H317 |
| Triacrylate ester 52408-84-1 | 500-114-5 500-114-5 01-2119487948-12 | 0,1- < 1 % | Eye Irrit. 2 H319 Skin Sens. 1B H317 |
| methacrylic acid 79-41-4 | 201-204-4 01-2119463884-26 | 0,1- < 1 % | Acute Tox. 4; Oral H302 Acute Tox. 3; Dermal H311 Acute Tox. 4; Inhalation H332 Skin Corr. 1A H314 Eye Dam. 1 H318 STOT SE 3 H335 |
| Ethylene dimethacrylate 97-90-5 | 202-617-2 01-2119965172-38 | 0,1- < 1 % | STOT SE 3 H335 Skin Sens. 1 H317 |

**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:

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

EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

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.

Keep away from sources of ignition.

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:

Good industrial hygiene practices should be observed.

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.

Keep container tightly sealed.
Refer to Technical Data Sheet

7.3. Specific end use(s)

Acrylics

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 |
|----------------------------------|-----|-------------------|-------------------------------------|--|-----------------|
| Silicon dioxide 112945-52-5 | | 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 |
| Methacrylic acid 79-41-4 | 50 | 180 | 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 |
| Methacrylic acid 79-41-4 | | | 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 |

Predicted No-Effect Concentration (PNEC):

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|--|------------------------------|-----------------|---------------|-----|--------------|--------|----------------------------------|
| | | | mg/l | ppm | mg/kg | others | |
| 2-Hydroxyethyl methacrylate 868-77-9 | aqua (freshwater) | | 0,482 mg/l | | | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | aqua (marine water) | | 0,482 mg/l | | | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | aqua (intermittent releases) | | 1 mg/l | | | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | sediment (freshwater) | | | | 3,79 mg/kg | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | sediment (marine water) | | | | 3,79 mg/kg | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | Soil | | | | 0,476 mg/kg | | |
| 2-Hydroxyethyl methacrylate 868-77-9 | Predator | | | | | | no potential for bioaccumulation |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | aqua (freshwater) | | 4,66 µg/l | | | | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | Soil | | | | 0,118 mg/kg | | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | sewage treatment plant (STP) | | 2,45 mg/l | | | | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | sediment (freshwater) | | | | 0,604 mg/kg | | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | aqua (intermittent releases) | | 0,0179 mg/l | | | | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | aqua (marine water) | | 0,000466 mg/l | | | | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | sediment (marine water) | | | | 0,06 mg/kg | | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | aqua (freshwater) | | 0,00353 mg/l | | | | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | aqua (marine water) | | 0,000353 mg/l | | | | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | aqua (intermittent releases) | | 0,0353 mg/l | | | | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | sediment (freshwater) | | | | 0,29 mg/kg | | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | sediment (marine water) | | | | 0,029 mg/kg | | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | Soil | | | | 0,0557 mg/kg | | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | aqua (freshwater) | | 0,002200 mg/l | | | | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | aqua (marine water) | | 0,00022 mg/l | | | | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | aqua (intermittent releases) | | 0,009 mg/l | | | | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | sewage treatment plant (STP) | | 1 mg/l | | | | |
| Reaction mass of pentamethyl-4- | sediment | | | | 1,05 mg/kg | | |

| | | | | | | | |
|--|---------------------------------|--|-------------|--|-------------|--|----------------------------------|
| piperidylsebacates 1065336-91-5 | (freshwater) | | | | | | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | sediment (marine water) | | | | 0,11 mg/kg | | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | Soil | | | | 0,21 mg/kg | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | aqua (freshwater) | | 0,006 mg/l | | | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | aqua (intermittent releases) | | 0,057 mg/l | | | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | Sewage treatment plant | | 10 mg/l | | | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | sediment (freshwater) | | | | 0,017 mg/kg | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | sediment (marine water) | | | | 0,002 mg/kg | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | aqua (marine water) | | 0,001 mg/l | | | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | oral | | | | 5,6 mg/kg | | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | Soil | | | | 0,012 mg/kg | | |
| methacrylic acid 79-41-4 | aqua (freshwater) | | 0,82 mg/l | | | | |
| methacrylic acid 79-41-4 | aqua (marine water) | | 0,82 mg/l | | | | |
| methacrylic acid 79-41-4 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| methacrylic acid 79-41-4 | aqua (intermittent releases) | | 0,82 mg/l | | | | |
| methacrylic acid 79-41-4 | Soil | | | | 1,2 mg/kg | | |
| Ethylene dimethacrylate 97-90-5 | aqua (freshwater) | | 0,139 mg/l | | | | |
| Ethylene dimethacrylate 97-90-5 | aqua (marine water) | | 0,0139 mg/l | | | | |
| Ethylene dimethacrylate 97-90-5 | aqua (intermittent releases) | | 0,15 mg/l | | | | |
| Ethylene dimethacrylate 97-90-5 | sewage treatment plant (STP) | | 57 mg/l | | | | |
| Ethylene dimethacrylate 97-90-5 | sediment (freshwater) | | | | 1,6 mg/kg | | |
| Ethylene dimethacrylate 97-90-5 | sediment (marine water) | | | | 0,16 mg/kg | | |
| Ethylene dimethacrylate 97-90-5 | Air | | | | | | no hazard identified |
| Ethylene dimethacrylate 97-90-5 | Soil | | | | 0,239 mg/kg | | |
| Ethylene dimethacrylate 97-90-5 | 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-Hydroxyethyl methacrylate 868-77-9 | Workers | dermal | Long term exposure - systemic effects | | 1,3 mg/kg | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate 868-77-9 | Workers | Inhalation | Long term exposure - systemic effects | | 4,9 mg/m3 | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate 868-77-9 | General population | dermal | Long term exposure - systemic effects | | 0,83 mg/kg | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate 868-77-9 | General population | Inhalation | Long term exposure - systemic effects | | 2,9 mg/m3 | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate 868-77-9 | General population | oral | Long term exposure - systemic effects | | 0,83 mg/kg | no potential for bioaccumulation |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | Workers | dermal | Long term exposure - systemic effects | | 1,04 mg/kg | |
| Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate 7534-94-3 | General population | dermal | Long term exposure - systemic effects | | 0,625 mg/kg | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | Workers | inhalation | Long term exposure - systemic effects | | 3,5 mg/m3 | |
| Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 75980-60-8 | Workers | dermal | Long term exposure - systemic effects | | 1 mg/kg | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | Workers | inhalation | Long term exposure - systemic effects | | 0,68 mg/m3 | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | Workers | dermal | Long term exposure - systemic effects | | 0,5 mg/kg | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | General population | dermal | Long term exposure - systemic effects | | 0,25 mg/kg | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | General population | inhalation | Long term exposure - systemic effects | | 0,17 mg/m3 | |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | General population | oral | Long term exposure - systemic effects | | 0,05 mg/kg | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | Workers | inhalation | Long term exposure - systemic effects | | 16,22 mg/m3 | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | Workers | dermal | Long term exposure - systemic effects | | 1,92 mg/kg | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | General population | oral | Long term exposure - systemic effects | | 1,39 mg/kg | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | General population | inhalation | Long term exposure - systemic effects | | 4,87 mg/m3 | |
| Glycerol, propoxylated, esters with acrylic acid 1-6.5PO 52408-84-1 | General population | dermal | Long term exposure - systemic effects | | 1,15 mg/kg | |
| methacrylic acid 79-41-4 | Workers | Inhalation | Long term exposure - local effects | | 88 mg/m3 | |
| methacrylic acid 79-41-4 | Workers | Inhalation | Long term exposure - systemic effects | | 29,6 mg/m3 | |
| methacrylic acid 79-41-4 | Workers | dermal | Long term exposure - systemic effects | | 4,25 mg/kg | |
| methacrylic acid 79-41-4 | General population | Inhalation | Long term exposure - local effects | | 6,55 mg/m3 | |
| methacrylic acid 79-41-4 | General population | Inhalation | Long term exposure - | | 6,3 mg/m3 | |

| | | | | | | |
|------------------------------------|--------------------|------------|---------------------------------------|--|------------------------|----------------------|
| | | | systemic effects | | | |
| methacrylic acid 79-41-4 | General population | dermal | Long term exposure - systemic effects | | 2,55 mg/kg | |
| Ethylene dimethacrylate 97-90-5 | Workers | inhalation | Long term exposure - systemic effects | | 2,45 mg/m ³ | no hazard identified |
| Ethylene dimethacrylate 97-90-5 | Workers | dermal | Long term exposure - systemic effects | | 1,3 mg/kg | no hazard identified |
| Ethylene dimethacrylate 97-90-5 | General population | inhalation | Long term exposure - systemic effects | | 1,45 mg/m ³ | no hazard identified |
| Ethylene dimethacrylate 97-90-5 | General population | dermal | Long term exposure - systemic effects | | 0,83 mg/kg | no hazard identified |
| Ethylene dimethacrylate 97-90-5 | General population | oral | Long term exposure - systemic effects | | 0,83 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; \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:

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

| | |
|--|------------------------------------|
| Appearance | liquid liquid black |
| Odor | acrylic |
| 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 | No data available / Not applicable |
| Flash point | > 93 °C (> 199.4 °F) |
| 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 (ρ) | 1,1 g/cm ³ |
| Bulk density | No data available / Not applicable |
| Solubility | No data available / Not applicable |
| Solubility (qualitative) | No data available / Not applicable |
| 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 strong oxidants.
Strong bases.
Acids.
Reducing agents.

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.
Hydrocarbons
nitrogen oxides
Rapid polymerisation may generate excessive heat and pressure.

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 |
|--|---------------|---------------|---------|---|
| 2-Hydroxyethyl methacrylate 868-77-9 | LD50 | > 5.000 mg/kg | rat | not specified |
| 7,7,9(or 7,9,9)-trimethyl- 4,13-dioxo-3,14-dioxa- 5,12-diazahexadecane- 1,16-diyl bismethacrylate 72869-86-4 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| Isobornyl methacrylate 7534-94-3 | LD50 | 3.160 mg/kg | rat | not specified |
| Diphenyl-2,4,6- trimethylbenzoyl phosphine oxide 75980-60-8 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| 2-Propenoic acid, 2- methyl-, 2-(2- hydroxyethoxy)ethyl ester 2351-43-1 | LD50 | 5.564 mg/kg | rat | FDA Guideline |
| Reaction mass of pentamethyl-4- piperidylsebacates 1065336-91-5 | LD50 | 3.230 mg/kg | rat | OECD Guideline 423 (Acute Oral toxicity) |
| Triacrylate ester 52408-84-1 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| methacrylic acid 79-41-4 | LD50 | 1.320 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Ethylene dimethacrylate 97-90-5 | LD50 | 8.700 mg/kg | rat | FDA Guideline |

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-Hydroxyethyl methacrylate 868-77-9 | LD50 | > 5.000 mg/kg | rabbit | not specified |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Isobornyl methacrylate 7534-94-3 | LD50 | > 3.000 mg/kg | rabbit | not specified |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | LD50 | > 5.000 mg/kg | rabbit | not specified |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | LD50 | > 3.170 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | Acute toxicity estimate (ATE) | 3.171 mg/kg | | Expert judgement |
| Triacrylate ester 52408-84-1 | LD50 | > 2.000 mg/kg | rabbit | OECD Guideline 402 (Acute Dermal Toxicity) |
| methacrylic acid 79-41-4 | LD50 | 500 - 1.000 mg/kg | rabbit | Dermal Toxicity Screening |
| methacrylic acid 79-41-4 | Acute toxicity estimate (ATE) | 500 mg/kg | | Expert judgement |
| Ethylene dimethacrylate 97-90-5 | 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 |
|---------------------------------|--|------------|-----------------|------------------|---------|--|
| methacrylic acid 79-41-4 | LC50 | > 3,6 mg/l | dust/mist | 4 h | rat | OECD Guideline 403 (Acute Inhalation Toxicity) |
| methacrylic acid 79-41-4 | Acute toxicity estimate (ATE) | 3,61 mg/l | | | | Expert judgement |

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 |
|--|----------------------|------------------|---------|--|
| 7,7,9(or 7,9,9)-trimethyl- 4,13-dioxo-3,14-dioxa- 5,12-diazahexadecane- 1,16-diyl bismethacrylate 72869-86-4 | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Isobornyl methacrylate 7534-94-3 | mildly irritating | | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Diphenyl-2,4,6- trimethylbenzoyl phosphine oxide 75980-60-8 | not irritating | 24 h | rabbit | not specified |
| 2-Propenoic acid, 2- methyl-, 2-(2- hydroxyethoxy)ethyl ester 2351-43-1 | not irritating | 24 h | rabbit | Draize Test |
| Triacrylate ester 52408-84-1 | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| methacrylic acid 79-41-4 | corrosive | 3 min | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Ethylene dimethacrylate 97-90-5 | not irritating | 24 h | rabbit | FDA Guideline |

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 |
|--|----------------|------------------|---------|---|
| 2-Hydroxyethyl methacrylate 868-77-9 | irritating | | rabbit | Draize Test |
| 7,7,9(or 7,9,9)-trimethyl- 4,13-dioxo-3,14-dioxa- 5,12-diazahexadecane- 1,16-diyl bismethacrylate 72869-86-4 | not irritating | 24 h | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Diphenyl-2,4,6- trimethylbenzoyl phosphine oxide 75980-60-8 | not irritating | | rabbit | not specified |
| 2-Propenoic acid, 2- methyl-, 2-(2- hydroxyethoxy)ethyl ester 2351-43-1 | irritating | | rabbit | Draize Test |
| Triacrylate ester 52408-84-1 | irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| methacrylic acid 79-41-4 | corrosive | | rabbit | Draize Test |
| Ethylene dimethacrylate 97-90-5 | not irritating | | rabbit | Draize Test |

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-Hydroxyethyl methacrylate 868-77-9 | sensitising | Guinea pig maximisation test | guinea pig | not specified |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Isobornyl methacrylate 7534-94-3 | not sensitising | Guinea pig maximisation test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | sensitising | Guinea pig maximisation test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| Triacrylate ester 52408-84-1 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| methacrylic acid 79-41-4 | not sensitising | Buehler test | guinea pig | equivalent or similar to OECD Guideline 406 (Skin Sensitisation) |
| Ethylene dimethacrylate 97-90-5 | 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 |
|---|---------------|--|---|----------------|---|
| 2-Hydroxyethyl methacrylate 868-77-9 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2-Hydroxyethyl methacrylate 868-77-9 | positive | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay) |
| Isobornyl methacrylate 7534-94-3 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Isobornyl methacrylate 7534-94-3 | negative | | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Isobornyl methacrylate 7534-94-3 | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Triacrylate ester 52408-84-1 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Triacrylate ester 52408-84-1 | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| Triacrylate ester 52408-84-1 | positive | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| methacrylic acid 79-41-4 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Ethylene dimethacrylate 97-90-5 | positive | | without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | negative | oral: gavage | | rat | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Triacrylate ester 52408-84-1 | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| methacrylic acid 79-41-4 | negative | inhalation | | mouse | equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test) |
| methacrylic acid 79-41-4 | negative | oral: gavage | | mouse | equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Ethylene dimethacrylate 97-90-5 | negative | oral: unspecified | | mouse | 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 |
|---|------------------|----------------------|--|---------|-------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | | inhalation | 102 weeks 6 hours/day, 5 days/week | rat | female | OECD Guideline 451 (Carcinogenicity Studies) |
| methacrylic acid 79-41-4 | not carcinogenic | inhalation | 2 y | mouse | male/female | OECD Guideline 451 (Carcinogenicity Studies) |
| Ethylene dimethacrylate 97-90-5 | | inhalation | 2 years 6 hours/day, 5 days/week | rat | male/female | OECD Guideline 451 (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-Hydroxyethyl methacrylate 868-77-9 | NOAEL P \geq 1.000 mg/kg NOAEL F1 \geq 1.000 mg/kg | screening | oral: gavage | rat | OECD Combined Repeated Dose and Reproductive / Developmental Toxicity Screening Test (Precursor Protocol of GL 422) |
| Isobornyl methacrylate 7534-94-3 | NOAEL P 25 mg/kg NOAEL F1 500 mg/kg | | oral: gavage | rat | OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test) |
| Triacrylate ester 52408-84-1 | NOAEL P 750 mg/kg NOAEL F1 \geq 750 mg/kg | screening | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| methacrylic acid 79-41-4 | NOAEL P 50 mg/kg NOAEL F1 400 mg/kg NOAEL F2 400 mg/kg | Two generation study | oral: gavage | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| Ethylene dimethacrylate 97-90-5 | NOAEL P \geq 1.000 mg/kg NOAEL F1 \geq 1.000 mg/kg | | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |

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-Hydroxyethyl methacrylate 868-77-9 | NOAEL 100 mg/kg | oral: gavage | once daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Diphenyl-2,4,6- trimethylbenzoyl phosphine oxide 75980-60-8 | NOAEL 100 mg/kg | oral: gavage | 3 m 5 d/w | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| Triacrylate ester 52408-84-1 | NOAEL 250 mg/kg | oral: gavage | 28-52 d daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| methacrylic acid 79-41-4 | | inhalation | 90 d 6 h/d, 5 d/w | rat | OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day) |
| Ethylene dimethacrylate 97-90-5 | NOAEL 100 mg/kg | oral: gavage | once daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |

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 |
|--|---------------|---------------|---------------|---|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | LC50 | > 100 mg/l | 96 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | LC50 | 10,1 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Isobornyl methacrylate 7534-94-3 | LC50 | 1,79 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | LC50 | > 1 - 10 mg/l | 48 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | LC50 | 0,9 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Triacrylate ester 52408-84-1 | LC50 | 5,74 mg/l | 96 h | Danio rerio (reported as Brachydanio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| methacrylic acid 79-41-4 | LC50 | 85 mg/l | 96 h | Salmo gairdneri (new name: Oncorhynchus mykiss) | EPA OTS 797.1400 (Fish Acute Toxicity Test) |
| Ethylene dimethacrylate 97-90-5 | LC50 | 15,95 mg/l | 96 h | Danio rerio | 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 |
|--|---------------|-----------------|---------------|---------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | EC50 | 380 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | EC50 | > 1,2 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Isobornyl methacrylate 7534-94-3 | EC50 | > 2,57 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | EC50 | > 10 - 100 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Triacrylate ester 52408-84-1 | EC50 | 91,4 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| methacrylic acid 79-41-4 | EC50 | > 130 mg/l | 48 h | Daphnia magna | EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids) |
| Ethylene dimethacrylate 97-90-5 | EC50 | 44,9 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 |
|---|---------------|------------|---------------|---------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | NOEC | 24,1 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Isobornyl methacrylate 7534-94-3 | NOEC | 0,233 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Reaction mass of pentamethyl- 4-piperidylsebacates 1065336-91-5 | NOEC | 1 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Ethylene dimethacrylate 97-90-5 | NOEC | 5,05 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 |
|---|---------------|-----------------|---------------|---|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | EC50 | 836 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | NOEC | 400 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 7,7,9(or 7,9,9)-trimethyl-4,13- dioxo-3,14-dioxo-5,12- diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | NOEC | 0,21 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Isobornyl methacrylate 7534-94-3 | EC50 | 2,66 mg/l | 96 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Isobornyl methacrylate 7534-94-3 | NOEC | 0,254 mg/l | 96 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Diphenyl-2,4,6- trimethylbenzoyl phosphine oxide 75980-60-8 | EC50 | > 10 - 100 mg/l | 72 h | | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Reaction mass of pentamethyl- 4-piperidylsebacates 1065336-91-5 | NOEC | 0,22 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Reaction mass of pentamethyl- 4-piperidylsebacates 1065336-91-5 | EC50 | 1,68 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Triacrylate ester 52408-84-1 | EC50 | 12,2 mg/l | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Triacrylate ester 52408-84-1 | EC10 | 2,06 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| methacrylic acid 79-41-4 | NOEC | 8,2 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| methacrylic acid 79-41-4 | EC50 | 45 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Ethylene dimethacrylate 97-90-5 | EC50 | 17,3 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Ethylene dimethacrylate 97-90-5 | EC10 | 6,93 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 |
|--|---------------|--------------|---------------|--|---|
| 2-Hydroxyethyl methacrylate 868-77-9 | EC0 | > 3.000 mg/l | 16 h | Pseudomonas fluorescens | other guideline: |
| Diphenyl-2,4,6- trimethylbenzoyl phosphine oxide 75980-60-8 | EC 50 | > 1.000 mg/l | 30 min | | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Triacrylate ester 52408-84-1 | EC20 | 507 mg/l | 3 h | activated sludge | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| methacrylic acid 79-41-4 | EC10 | 100 mg/l | 17 h | | not specified |
| Ethylene dimethacrylate 97-90-5 | EC50 | 570 mg/l | 3 h | activated sludge of a predominantly domestic sewage | ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge) |

12.2. Persistence and degradability

| Hazardous substances CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|--|--|-----------|---------------|------------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | readily biodegradable | aerobic | 92 - 100 % | 14 d | OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I)) |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | not readily biodegradable. | aerobic | 22 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| Isobornyl methacrylate 7534-94-3 | readily biodegradable | aerobic | 70 % | 28 d | OECD Guideline 310 (Ready Biodegradability CO2 in Sealed Vessels (Headspace Test)) |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | | | < 20 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | | aerobic | 38 % | 28 d | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |
| Triacrylate ester 52408-84-1 | readily biodegradable | aerobic | 72 - 85 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| methacrylic acid 79-41-4 | inherently biodegradable | aerobic | 100 % | 14 d | OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test) |
| methacrylic acid 79-41-4 | readily biodegradable | aerobic | 86 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| Ethylene dimethacrylate 97-90-5 | readily biodegradable, but failing 10-day window | aerobic | 69 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |

12.3. Bioaccumulative potential

| Hazardous substances CAS-No. | Bioconcentration factor (BCF) | Exposure time | Temperature | Species | Method |
|-------------------------------------|-------------------------------|---------------|-------------|-------------|--|
| Isobornyl methacrylate 7534-94-3 | 37 | 56 day | 24 °C | Danio rerio | OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test) |

12.4. Mobility in soil

Cured adhesives are immobile.

| Hazardous substances CAS-No. | LogPow | Temperature | Method |
|--|-------------|-------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | 0,42 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | 3,39 | 20 °C | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| Isobornyl methacrylate 7534-94-3 | 5,09 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | 2,37 - 2,77 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| methacrylic acid 79-41-4 | 0,93 | 22 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Ethylene dimethacrylate 97-90-5 | 2,4 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |

12.5. Results of PBT and vPvB assessment

| Hazardous substances CAS-No. | PBT / vPvB |
|--|---|
| 2-Hydroxyethyl methacrylate 868-77-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate 72869-86-4 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Isobornyl methacrylate 7534-94-3 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide 75980-60-8 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Reaction mass of pentamethyl-4-piperidylsebacates 1065336-91-5 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Triacrylate ester 52408-84-1 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| methacrylic acid 79-41-4 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Ethylene dimethacrylate 97-90-5 | 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:

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

Dispose of in accordance with local and national regulations.

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

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

14.2. UN proper shipping name

| | |
|------|---|
| ADR | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction mass of pentamethyl-4-piperidylsebacates,Urethane dimethacrylate) |
| RID | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction mass of pentamethyl-4-piperidylsebacates,Urethane dimethacrylate) |
| ADN | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction mass of pentamethyl-4-piperidylsebacates,Urethane dimethacrylate) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction mass of pentamethyl-4-piperidylsebacates,Urethane dimethacrylate) |
| IATA | Environmentally hazardous substance, liquid, n.o.s. (Reaction mass of pentamethyl-4-piperidylsebacates,Urethane dimethacrylate) |

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**

| | |
|--|----------------|
| Ozone Depleting Substance (ODS) (Regulation 1005/2009/EC): | Not applicable |
| Prior Informed Consent (PIC) (Regulation 649/2012/EC): | Not applicable |
| Persistent Organic Pollutants (POPs) (Regulation 2019/1021/EC) : | Not applicable |

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC): Not applicable

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

15.2. Chemical safety assessment

A chemical safety assessment has 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:

- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H361f Suspected of damaging fertility.
- 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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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.

Annex - Exposure Scenarios:

Exposure Scenarios for 2-Hydroxyethyl methacrylate can be downloaded under the following link:
http://mymsds.de.henkelgroup.net/mymsds/.643691..en.ANNEX_DE.34677269.0.DE.pdf
Alternatively they can be accessed on the internet site www.mymsds.henkel.com by entering number 643691