



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

Page 1 of 32

LOCTITE 648

SDS No. : 450730
V013.3

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

1.1. Product identifier

LOCTITE 648

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

Intended use:
Adhesive

1.3. Details of the supplier of the safety data sheet

Henkel Ltd
Adhesives
Wood Lane End
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

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

24 Hours Emergency Tel: +44 (0)1442 278497

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. | |
| Specific target organ toxicity - single exposure | Category 3 |
| H335 May cause respiratory irritation. | |
| Target organ: respiratory tract irritation | |
| 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**

3,3,5 Trimethylcyclohexyl methacrylate

2-Hydroxyethyl methacrylate

Acrylic acid

Hydroxypropyl methacrylate

maleic acid

Acetic acid, 2-phenylhydrazide

2,2'-Ethylenedioxydiethyl dimethacrylate

2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester

Signal word:

Danger

Hazard statement:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statement:

**** For consumer use only: P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P501 Dispose of contents/container in accordance with national regulation.***

**Precautionary statement:
Prevention**

P273 Avoid release to the environment.

P261 Avoid breathing vapors.

P280 Wear protective gloves/eye protection.

**Precautionary statement:
Response**

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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 |
|--|----------------------|--|--|-------------------------|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | 25- 50 % | Aquatic Chronic 4, H413 | | |
| 01-2119980581-32 | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 231-927-0 01-2120748527-45 | 10- 20 % | Aquatic Chronic 2, H411 Skin Sens. 1B, H317 STOT SE 3, H335 Skin Irrit. 2, H315 Eye Irrit. 2, H319 | STOT SE 3; H335; C >= 10 % | |
| 2-Hydroxyethyl methacrylate 868-77-9 212-782-2 01-2119490169-29 | 10- 20 % | Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 | | |
| Acrylic acid 79-10-7 201-177-9 01-2119452449-31 | 1- < 5 % | Acute Tox. 4, Dermal, H312 Skin Corr. 1A, H314 Flam. Liq. 3, H226 Acute Tox. 4, Oral, H302 Acute Tox. 4, Inhalation, H332 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 STOT SE 3, H335 Eye Dam. 1, H318 | STOT SE 3; H335; C >= 1 % ===== M acute = 1 ===== dermal:ATE = 1.100 mg/kg inhalation:ATE = 11 mg/l;vapour | EU OEL |
| Hydroxypropyl methacrylate 27813-02-1 248-666-3 01-2119490226-37 | 1- < 3 % | Skin Sens. 1, H317 Eye Irrit. 2, H319 | | |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid 01-2119980659-17 | 1- < 3 % | Aquatic Chronic 4, H413 | | |
| Cumene hydroperoxide 80-15-9 201-254-7 01-2119475796-19 | 0,1- < 1 % | STOT RE 2, H373 Skin Corr. 1B, H314 Acute Tox. 2, Inhalation, H330 Aquatic Chronic 2, H411 Acute Tox. 4, Oral, H302 Acute Tox. 4, Dermal, H312 Org. Perox. E, H242 STOT SE 3, H335 | Eye Irrit. 2; H319; C 1 - < 3 % Skin Irrit. 2; H315; C 3 - < 10 % Eye Dam. 1; H318; C 3 - < 10 % STOT SE 3; H335; C >= 1 % Skin Corr. 1B; H314; C >= 10 % ===== dermal:ATE = 1.100 mg/kg | |
| maleic acid 110-16-7 203-742-5 01-2119488705-25 | 0,1- < 1 % | Acute Tox. 4, Oral, H302 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Skin Sens. 1, H317 Acute Tox. 4, Dermal, H312 | Skin Sens. 1; H317; C >= 0,1 % | |
| Acetic acid, 2-phenylhydrazide 114-83-0 204-055-3 | 0,1- < 1 % | Acute Tox. 3, Oral, H301 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 STOT SE 3, Inhalation, H335 Carc. 2, H351 | | |
| 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 | STOT SE 3; H335; C >= 1 % ===== dermal:ATE = 500 mg/kg inhalation:ATE = 3,61 mg/l;dust/mist | |

| | | | | |
|---|------------|--|---|--|
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 203-652-6 01-2119969287-21 | 0,1- < 1 % | Skin Sens. 1B, H317 | dermal:ATE = > 5.000 mg/kg inhalation:ATE = 28,17 mg/l;dust/mist | |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | 0,1- < 1 % | Eye Irrit. 2, H319 Skin Sens. 1, H317 | | |

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: Redness, inflammation.

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

SKIN: Rash, Urticaria.

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

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

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:

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.

Refer to Technical Data Sheet

Keep container tightly sealed.

7.3. Specific end use(s)

Adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

| Ingredient [Regulated substance] | ppm | mg/m ³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|-----|-------------------|-----------------------------------|--|-----------------|
| Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)] | 10 | 29 | Time Weighted Average (TWA): | Indicative | ECTLV |
| Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)] | 20 | 59 | Short Term Exposure Limit (STEL): | Indicative | ECTLV |
| Acrylic acid 79-10-7 [ACRYLIC ACID] | 10 | 29 | Time Weighted Average (TWA): | | EH40 WEL |
| Acrylic acid 79-10-7 [Acrylic acid] | 20 | 59 | Short Term Exposure Limit (STEL): | 1 minute | EH40 WEL |
| Methacrylic acid 79-41-4 [METHACRYLIC ACID] | 20 | 72 | Time Weighted Average (TWA): | | EH40 WEL |
| Methacrylic acid 79-41-4 [METHACRYLIC ACID] | 40 | 143 | Short Term Exposure Limit (STEL): | 15 minutes | EH40 WEL |

Occupational Exposure Limits

Valid for
Ireland

| Ingredient [Regulated substance] | ppm | mg/m ³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|-----|-------------------|-----------------------------------|--|-----------------|
| Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)] | 10 | 29 | Time Weighted Average (TWA): | Indicative | ECTLV |
| Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)] | 20 | 59 | Short Term Exposure Limit (STEL): | Indicative | ECTLV |
| Acrylic acid 79-10-7 [ACRYLIC ACID] | 20 | 59 | Short Term Exposure Limit (STEL): | 1 minute Indicative OELV | IR_OEL |
| Acrylic acid 79-10-7 [ACRYLIC ACID] | 10 | 29 | Time Weighted Average (TWA): | Indicative OELV | IR_OEL |
| Methacrylic acid 79-41-4 [METHACRYLIC ACID] | 20 | 70 | Time Weighted Average (TWA): | | IR_OEL |
| Methacrylic acid 79-41-4 [METHACRYLIC ACID] | 40 | 140 | Short Term Exposure Limit (STEL): | 15 minutes | IR_OEL |

Predicted No-Effect Concentration (PNEC):

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|--|------------------------------|--------------------|--------------|-----|---------------|--------|----------------------------------|
| | | | mg/l | ppm | mg/kg | others | |
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediy)l bismethacrylate and 2-[4-[2-(4-[2-[2-(methacryloyloxy)etho | sewage treatment plant (STP) | | 1 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | aqua (freshwater) | | 0,0019 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | aqua (marine water) | | 0,00019 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | aqua (intermittent releases) | | 0,019 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sewage treatment plant (STP) | | 100 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sediment (freshwater) | | | | 0,141 mg/kg | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sediment (marine water) | | | | 0,014 mg/kg | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Soil | | | | 0,027 mg/kg | | |
| 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 |
| 2-Hydroxyethyl methacrylate 868-77-9 | Marine water - intermittent | | 1 mg/l | | | | |
| Acrylic acid 79-10-7 | aqua (freshwater) | | 0,003 mg/l | | | | |
| Acrylic acid 79-10-7 | aqua (marine water) | | 0,0003 mg/l | | | | |
| Acrylic acid 79-10-7 | sewage treatment plant (STP) | | 0,9 mg/l | | | | |
| Acrylic acid 79-10-7 | sediment (freshwater) | | | | 0,0236 mg/kg | | |
| Acrylic acid 79-10-7 | sediment (marine water) | | | | 0,00236 mg/kg | | |
| Acrylic acid 79-10-7 | Soil | | | | 1 mg/kg | | |
| Acrylic acid 79-10-7 | oral | | | | 0,03 g/kg | | |
| Acrylic acid 79-10-7 | Air | | | | | | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | aqua (freshwater) | | 0,904 mg/l | | | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | aqua (marine water) | | 0,904 mg/l | | | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| Methacrylic acid, monoester with propane-1,2-diol | aqua (intermittent | | 0,972 mg/l | | | | |

| | | | | | | | |
|---|------------------------------|--|--------------|--|--------------|--|----------------------------------|
| 27813-02-1 | releases) | | | | | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | sediment (freshwater) | | | | 6,28 mg/kg | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | sediment (marine water) | | | | 6,28 mg/kg | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | Soil | | | | 0,727 mg/kg | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | Marine water - intermittent | | 0,972 mg/l | | | | |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | Air | | | | | | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | Predator | | | | | | no potential for bioaccumulation |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | aqua (freshwater) | | 0,0031 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | aqua (intermittent releases) | | 0,031 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | aqua (marine water) | | 0,00031 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | sewage treatment plant (STP) | | 0,35 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | sediment (freshwater) | | | | 0,023 mg/kg | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | sediment (marine water) | | | | 0,0023 mg/kg | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | Soil | | | | 0,0029 mg/kg | | |
| Maleic acid 110-16-7 | aqua (freshwater) | | 0,1 mg/l | | | | |
| Maleic acid 110-16-7 | aqua (intermittent releases) | | 0,4281 mg/l | | | | |
| Maleic acid 110-16-7 | sediment (freshwater) | | | | 0,334 mg/kg | | |
| Maleic acid 110-16-7 | sewage treatment plant (STP) | | 44,6 mg/l | | | | |
| Maleic acid 110-16-7 | aqua (marine water) | | 0,01 mg/l | | | | |
| Maleic acid 110-16-7 | sediment (marine water) | | | | 0,0334 mg/kg | | |
| Maleic acid 110-16-7 | Soil | | | | 0,0415 mg/kg | | |
| methacrylic acid 79-41-4 | aqua (freshwater) | | 0,82 mg/l | | | | |
| methacrylic acid 79-41-4 | Freshwater - intermittent | | 0,45 mg/l | | | | |
| methacrylic acid 79-41-4 | aqua (marine water) | | 0,082 mg/l | | | | |
| methacrylic acid 79-41-4 | sewage treatment plant (STP) | | 100 mg/l | | | | |
| methacrylic acid 79-41-4 | sediment (freshwater) | | | | 3,09 mg/kg | | |
| methacrylic acid 79-41-4 | sediment (marine water) | | | | 0,309 mg/kg | | |
| methacrylic acid 79-41-4 | Soil | | | | 0,137 mg/kg | | |
| methacrylic acid 79-41-4 | Predator | | | | | | no potential for bioaccumulation |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | aqua (freshwater) | | 0,164 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate | aqua (marine | | 0,0164 | | | | |

| | | | | | | | |
|--|------------------------------------|--|------------|--|----------------|--|-------------------------------------|
| 109-16-0 | water) | | mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | aqua (intermittent releases) | | 0,164 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sediment (freshwater) | | | | 1,85 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sediment (marine water) | | | | 0,185 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Soil | | | | 0,274 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Air | | | | | | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Predator | | | | | | no potential for bioaccumulation |

Derived No-Effect Level (DNEL):

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|---|--------------------|-------------------|---|---------------|-------------|----------------------------------|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Workers | inhalation | Long term exposure - systemic effects | | 16,45 mg/m3 | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Workers | dermal | Long term exposure - systemic effects | | 46,7 mg/kg | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | General population | inhalation | Long term exposure - systemic effects | | 2,9 mg/m3 | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | General population | dermal | Long term exposure - systemic effects | | 1,67 mg/kg | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | General population | oral | Long term exposure - systemic effects | | 1,67 mg/kg | |
| 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 |
| Acrylic acid 79-10-7 | Workers | inhalation | Long term exposure - local effects | | 30 mg/m3 | no hazard identified |
| Acrylic acid 79-10-7 | Workers | inhalation | Acute/short term exposure - local effects | | 30 mg/m3 | no hazard identified |
| Acrylic acid 79-10-7 | Workers | dermal | Acute/short term exposure - local effects | | 1 mg/cm2 | no hazard identified |
| Acrylic acid 79-10-7 | General population | dermal | Acute/short term exposure - local effects | | 1 mg/cm2 | no hazard identified |
| Acrylic acid 79-10-7 | General population | inhalation | Acute/short term exposure - local effects | | 3,6 mg/m3 | no hazard identified |
| Acrylic acid 79-10-7 | General population | inhalation | Long term exposure - local effects | | 3,6 mg/m3 | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | Workers | dermal | Long term exposure - systemic effects | | 4,2 mg/kg | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | Workers | Inhalation | Long term exposure - systemic effects | | 14,7 mg/m3 | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | General population | dermal | Long term exposure - systemic effects | | 2,5 mg/kg | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | General population | Inhalation | Long term exposure - systemic effects | | 8,8 mg/m3 | no hazard identified |
| Methacrylic acid, monoester with propane-1,2-diol 27813-02-1 | General population | oral | Long term exposure - systemic effects | | 2,5 mg/kg | no hazard identified |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | Workers | inhalation | Long term exposure - systemic effects | | 6 mg/m3 | |
| Maleic acid 110-16-7 | Workers | dermal | Acute/short term exposure - local effects | | | |
| Maleic acid 110-16-7 | Workers | dermal | Long term exposure - local | | | |

| | | | effects | | | |
|--|--------------------|------------|--|--|------------|----------------------------------|
| Maleic acid 110-16-7 | Workers | dermal | Acute/short term exposure - systemic effects | | | |
| Maleic acid 110-16-7 | Workers | dermal | Long term exposure - systemic effects | | | |
| Maleic acid 110-16-7 | Workers | inhalation | Acute/short term exposure - local effects | | 3 mg/m3 | |
| Maleic acid 110-16-7 | Workers | inhalation | Long term exposure - systemic effects | | 3 mg/m3 | |
| Maleic acid 110-16-7 | Workers | inhalation | Long term exposure - local effects | | 3 mg/m3 | |
| Maleic acid 110-16-7 | Workers | inhalation | Acute/short term exposure - systemic effects | | 3 mg/m3 | |
| methacrylic acid 79-41-4 | Workers | Inhalation | Long term exposure - local effects | | 88 mg/m3 | no potential for bioaccumulation |
| methacrylic acid 79-41-4 | Workers | Inhalation | Long term exposure - systemic effects | | 29,6 mg/m3 | no potential for bioaccumulation |
| methacrylic acid 79-41-4 | Workers | dermal | Long term exposure - systemic effects | | 4,25 mg/kg | no potential for bioaccumulation |
| methacrylic acid 79-41-4 | General population | Inhalation | Long term exposure - local effects | | 6,55 mg/m3 | no potential for bioaccumulation |
| methacrylic acid 79-41-4 | General population | Inhalation | Long term exposure - systemic effects | | 6,3 mg/m3 | no potential for bioaccumulation |
| methacrylic acid 79-41-4 | General population | dermal | Long term exposure - systemic effects | | 2,55 mg/kg | no potential for bioaccumulation |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Workers | inhalation | Long term exposure - systemic effects | | 48,5 mg/m3 | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Workers | dermal | Long term exposure - systemic effects | | 13,9 mg/kg | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | General population | inhalation | Long term exposure - systemic effects | | 14,5 mg/m3 | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | General population | dermal | Long term exposure - systemic effects | | 8,33 mg/kg | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | General population | oral | Long term exposure - systemic effects | | 8,33 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 | green |
| Odor | Acrylic |
| Physical state | liquid |
| Melting point | Not applicable, Product is a liquid |
| Solidification temperature | < -30 °C (< -22 °F) |
| Initial boiling point | > 150 °C (> 302 °F)None |
| Flammability | The product is not flammable. |
| Explosive limits | Not applicable, The product is not flammable. |
| Flash point | > 100 °C (> 212 °F) |
| 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-polar/aprotic. |
| Viscosity (kinematic) (40 °C (104 °F);) | > 20,5 mm ² /s |
| Viscosity, dynamic () | 450 - 550 mPa.s no method / method unknown |
| Solubility (qualitative) (Solvent: Acetone) | Soluble |
| Solubility (qualitative) (20 °C (68 °F); Solvent: Water) | Slight |
| Partition coefficient: n-octanol/water | Not applicable |
| Vapour pressure (26 °C (78.8 °F)) | Mixture < 5 mm hg |
| Vapour pressure (20 °C (68 °F)) | < 0,13 mbar |
| Density (20 °C (68 °F)) | 1,1 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.

Acids.

Reducing agents.

Strong bases.

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 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 |
|---|---------------|----------------|---------|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(methacryloyloxy)etho | LD50 | > 35.000 mg/kg | rat | not specified |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD0 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| 2-Hydroxyethyl methacrylate 868-77-9 | LD50 | 5.564 mg/kg | rat | FDA Guideline |
| Acrylic acid 79-10-7 | LD50 | 1.500 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Hydroxypropyl methacrylate 27813-02-1 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | LD50 | > 2.000 mg/kg | rat | OECD Guideline 423 (Acute Oral toxicity) |
| Cumene hydroperoxide 80-15-9 | LD50 | 382 mg/kg | rat | other guideline: |
| maleic acid 110-16-7 | LD50 | 708 mg/kg | rat | not specified |
| Acetic acid, 2-phenylhydrazide 114-83-0 | LD50 | 270 mg/kg | rat | not specified |
| methacrylic acid 79-41-4 | LD50 | 1.320 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | LD50 | 10.837 mg/kg | rat | not specified |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | LD50 | 5.564 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 |
|--|-------------------------------|-------------------|---------|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD0 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2-Hydroxyethyl methacrylate 868-77-9 | LD50 | > 5.000 mg/kg | rabbit | not specified |
| Acrylic acid 79-10-7 | Acute toxicity estimate (ATE) | 1.100 mg/kg | | Expert judgement |
| Hydroxypropyl methacrylate 27813-02-1 | LD50 | > 5.000 mg/kg | rabbit | not specified |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Cumene hydroperoxide 80-15-9 | Acute toxicity estimate (ATE) | 1.100 mg/kg | | Expert judgement |
| maleic acid 110-16-7 | LD50 | 1.560 mg/kg | rabbit | not specified |
| 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 |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Acute toxicity estimate (ATE) | > 5.000 mg/kg | | Expert judgement |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | LD50 | > 5.000 mg/kg | rabbit | not specified |

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 |
|---|--|------------|-----------------|------------------|---------|---|
| Acrylic acid 79-10-7 | LC0 | 5,1 mg/l | vapour | 4 h | rat | equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity) |
| Acrylic acid 79-10-7 | Acute toxicity estimate (ATE) | 11 mg/l | vapour | | | Expert judgement |
| Cumene hydroperoxide 80-15-9 | LC50 | 1,370 mg/l | vapour | 4 h | rat | not specified |
| 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 | dust/mist | | | Expert judgement |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Acute toxicity estimate (ATE) | 28,17 mg/l | dust/mist | | | 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 |
|--|---------------------------|------------------|--|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | not irritating | 24 h | rabbit | not specified |
| 2-Hydroxyethyl methacrylate 868-77-9 | slightly irritating | 24 h | rabbit | Draize Test |
| Acrylic acid 79-10-7 | Category 1 (corrosive) | 3 min | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Hydroxypropyl methacrylate 27813-02-1 | not irritating | 24 h | rabbit | Draize Test |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | not irritating | 15 min | Human, EpiSkin™ (SM), Reconstructed Human Epidermis (RHE) | OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method) |
| Cumene hydroperoxide 80-15-9 | corrosive | | rabbit | Draize Test |
| maleic acid 110-16-7 | irritating | 24 h | human | Patch Test |
| methacrylic acid 79-41-4 | corrosive | 3 min | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | not irritating | 24 h | rabbit | Draize Test |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | not irritating | 24 h | rabbit | Draize Test |

Serious eye damage/irritation:

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

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|--|---|------------------|-------------------------------|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(4-[2-[2-(methacryloyloxy)etho | not irritating | | rabbit | not specified |
| 2-Hydroxyethyl methacrylate 868-77-9 | Category 2B (mildly irritating to eyes) | | rabbit | Draize Test |
| Acrylic acid 79-10-7 | Category 1 (irreversible effects on the eye) | | rabbit | BASF Test |
| Hydroxypropyl methacrylate 27813-02-1 | Category 2B (mildly irritating to eyes) | | rabbit | Draize Test |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | not irritating | | Bovine, cornea, in vitro test | OECD Guideline 437 (BCOP) |
| maleic acid 110-16-7 | highly irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| methacrylic acid 79-41-4 | corrosive | | rabbit | Draize Test |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | 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 |
|--|-----------------|------------------------------------|----------------|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(4-{2-[2-(methacryloyloxy)etho | not sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 2-Hydroxyethyl methacrylate 868-77-9 | not sensitising | Buehler test | guinea pig | Buehler test |
| 2-Hydroxyethyl methacrylate 868-77-9 | sensitising | Guinea pig maximisation test | guinea pig | Magnusson and Kligman Method |
| Acrylic acid 79-10-7 | not sensitising | Freund's complete adjuvant test | guinea pig | Klecak Method |
| Acrylic acid 79-10-7 | not sensitising | Split adjuvant test | guinea pig | Maguire Method |
| Hydroxypropyl methacrylate 27813-02-1 | not sensitising | Mouse local lymphnode assay (LLNA) | mouse | equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Hydroxypropyl methacrylate 27813-02-1 | sensitising | Guinea pig maximisation test | guinea pig | not specified |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | not sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| maleic acid 110-16-7 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| maleic acid 110-16-7 | sensitising | Mouse local lymphnode assay (LLNA) | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| methacrylic acid 79-41-4 | not sensitising | Buehler test | guinea pig | equivalent or similar to OECD Guideline 406 (Skin Sensitisation) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | 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 |
|--|---------------|--|---|----------------|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(4-{2-[2-(methacryloyloxy)etho | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(4-{2-[2-(methacryloyloxy)etho | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(4-{2-[2-(methacryloyloxy)etho | negative | in vitro mammalian cell micronucleus test | with and without | | OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | 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 | 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) |
| Acrylic acid 79-10-7 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Acrylic acid 79-10-7 | negative | mammalian cell gene mutation assay | with and without | | equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Acrylic acid 79-10-7 | negative | DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro | without | | equivalent or similar to OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells) |
| Hydroxypropyl methacrylate 27813-02-1 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Hydroxypropyl methacrylate 27813-02-1 | positive | in vitro mammalian chromosome aberration test | with and without | | Chromosome Aberration Test |
| Hydroxypropyl methacrylate 27813-02-1 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | negative | in vitro mammalian cell micronucleus test | with and without | | OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| Cumene hydroperoxide 80-15-9 | positive | bacterial reverse mutation assay (e.g | without | | OECD Guideline 471 (Bacterial Reverse Mutation |

| | | | | | |
|---|----------|--|------------------|--|--|
| | | Ames test) | | | Assay) |
| maleic acid 110-16-7 | negative | bacterial reverse mutation assay (e.g Ames test) | no data | | Ames Test |
| maleic acid 110-16-7 | negative | 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) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | negative | in vitro mammalian cell micronucleus test | with and without | | OECD Guideline 487 (In vitro Mammalian Cell 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 | not carcinogenic | inhalation | 2 y 6 h/d, 5 d/w | rat | female | equivalent or similar OECD Guideline 451 (Carcinogenicity Studies) |
| 2-Hydroxyethyl methacrylate 868-77-9 | not carcinogenic | inhalation | 2 y 6 h/d, 5 d/w | rat | male | equivalent or similar OECD Guideline 451 (Carcinogenicity Studies) |
| Acrylic acid 79-10-7 | not carcinogenic | oral: drinking water | 26 - 28 m continuously | rat | male/female | OECD Guideline 451 (Carcinogenicity Studies) |
| Acrylic acid 79-10-7 | not carcinogenic | dermal | 21 m 3 times/w | mouse | male/female | not specified |
| Hydroxypropyl methacrylate 27813-02-1 | not carcinogenic | inhalation | 2 y 6 h/d, 5 d/w | rat | male | equivalent or similar OECD Guideline 451 (Carcinogenicity Studies) |
| maleic acid 110-16-7 | not carcinogenic | oral: feed | 2 y daily | rat | male/female | OECD Guideline 451 (Carcinogenicity Studies) |
| methacrylic acid 79-41-4 | not carcinogenic | inhalation | 2 y | mouse | 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 |
|--|--|----------------------|-------------------------|---------|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | NOAEL P 1.000 mg/kg | screening | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | NOAEL P >= 1.000 mg/kg NOAEL F1 >= 1.000 mg/kg | screening | oral: gavage | rat | equivalent or similar to OECD Guideline 422 (Combined Repeated Dose Toxicity Study) |
| Acrylic acid 79-10-7 | NOAEL P 83 mg/kg NOAEL F1 250 mg/kg | one-generation study | oral: drinking water | rat | equivalent or similar to OECD Guideline 415 (One-Generation Reproduction Toxicity Study) |
| Acrylic acid 79-10-7 | NOAEL P 240 mg/kg NOAEL F1 53 mg/kg NOAEL F2 53 mg/kg | two-generation study | oral: drinking water | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| Hydroxypropyl methacrylate 27813-02-1 | NOAEL P 300 mg/kg NOAEL F1 1.000 mg/kg | screening | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Hydroxypropyl methacrylate 27813-02-1 | NOAEL P 400 mg/kg NOAEL F1 400 mg/kg | two-generation study | oral: gavage | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | NOAEL P 1.000 mg/kg NOAEL F1 1.000 mg/kg | screening | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| maleic acid 110-16-7 | NOAEL F1 150 mg/kg NOAEL F2 55 mg/kg | Two generation study | oral: gavage | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| 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) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOAEL P 1.000 mg/kg NOAEL F1 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 |
|--|-------------------|----------------------------|--|---------|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-[4-[2-(4-{2-[2-(methacryloyloxy)etho | NOAEL 1.000 mg/kg | oral: gavage | 13 weeks daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | NOAEL 1.000 mg/kg | oral: gavage | 28 d daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | NOAEL 100 mg/kg | oral: gavage | 49 d daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | NOAEL 0,352 mg/l | inhalation | 90 d 6 h/d, 5 d/w | rat | OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day) |
| Acrylic acid 79-10-7 | NOAEL 40 mg/kg | oral: drinking water | 12 m daily | rat | equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies) |
| Acrylic acid 79-10-7 | NOAEL 0,015 mg/l | inhalation: vapour | 90 d 6 h/d, 5 d/w | mouse | equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day) |
| Hydroxypropyl methacrylate 27813-02-1 | NOAEL 300 mg/kg | oral: gavage | 49 d daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Hydroxypropyl methacrylate 27813-02-1 | NOAEL 0,352 mg/l | inhalation | 90 d 6 h/d, 5 d/w | rat | OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | NOAEL 1.000 mg/kg | oral: gavage | 13 weeks daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| Cumene hydroperoxide 80-15-9 | | inhalation: aerosol | 6 h/d 5 d/w | rat | not specified |
| maleic acid 110-16-7 | NOAEL >= 40 mg/kg | oral: feed | 90 d daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| methacrylic acid 79-41-4 | | inhalation | 90 d 6 h/d, 5 d/w | rat | OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOAEL 1.000 mg/kg | oral: gavage | daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |

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 |
|--|---------------|-----------------------------|---------------|---|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | LL50 | Toxicity > Water solubility | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | NOEC | Toxicity > Water solubility | 34 d | Danio rerio | OECD Guideline 210 (fish early lite stage toxicity test) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LC50 | 1,9 mg/l | 96 h | Brachydanio rerio (new name: Danio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | LC50 | > 100 mg/l | 96 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Acrylic acid 79-10-7 | LC50 | 27 mg/l | 96 h | Salmo gairdneri (new name: Oncorhynchus mykiss) | EPA OTS 797.1400 (Fish Acute Toxicity Test) |
| Acrylic acid 79-10-7 | NOEC | >= 10,1 mg/l | 45 d | Oryzias latipes | OECD Guideline 210 (fish early lite stage toxicity test) |
| Hydroxypropyl methacrylate 27813-02-1 | LC50 | 493 mg/l | 48 h | Leuciscus idus melanotus | DIN 38412-15 |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | LL50 | Toxicity > Water solubility | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Cumene hydroperoxide 80-15-9 | LC50 | 3,9 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| maleic acid 110-16-7 | LC50 | > 245 mg/l | 48 h | Leuciscus idus | DIN 38412-15 |
| 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) |
| methacrylic acid 79-41-4 | NOEC | 10 mg/l | 35 d | Danio rerio | OECD Guideline 210 (fish early lite stage toxicity test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | LC50 | 16,4 mg/l | 96 h | Danio rerio | 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 |
|--|---------------|-----------------------------|---------------|---------------|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | EL50 | Toxicity > Water solubility | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | EC50 | 14,43 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2-Hydroxyethyl methacrylate | EC50 | 380 mg/l | 48 h | Daphnia magna | OECD Guideline 202 |

| | | | | | |
|--|------|-----------------------------|------|---------------|---|
| 868-77-9 | | | | | (Daphnia sp. Acute Immobilisation Test) |
| Acrylic acid 79-10-7 | EC50 | 95 mg/l | 48 h | Daphnia magna | EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids) |
| Hydroxypropyl methacrylate 27813-02-1 | EC50 | > 143 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | EL50 | Toxicity > Water solubility | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Cumene hydroperoxide 80-15-9 | EC50 | 18,84 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| maleic acid 110-16-7 | EC50 | 42,81 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) |

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 |
|--|---------------|-----------------------------|---------------|---------------|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | EC10 | Toxicity > Water solubility | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | NOEC | 24,1 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Acrylic acid 79-10-7 | NOEC | 19 mg/l | 21 d | Daphnia magna | EPA OTS 797.1330 (Daphnid Chronic Toxicity Test) |
| Hydroxypropyl methacrylate 27813-02-1 | NOEC | 45,2 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | EC10 | Toxicity > Water solubility | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| maleic acid 110-16-7 | NOEC | 10 mg/l | 21 d | Daphnia magna | other guideline: |
| methacrylic acid 79-41-4 | NOEC | 53 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOEC | 32 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 |
|--|---------------|-----------------------------|---------------|--|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | EL50 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | EC10 | 0,43 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 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) |
| Acrylic acid 79-10-7 | EC10 | 0,03 mg/l | 72 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | EU Method C.3 (Algal Inhibition test) |
| Acrylic acid 79-10-7 | EC50 | 0,13 mg/l | 72 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | EU Method C.3 (Algal Inhibition test) |
| Hydroxypropyl methacrylate 27813-02-1 | EC50 | > 97,2 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Hydroxypropyl methacrylate 27813-02-1 | NOEC | > 97,2 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | EL50 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | EL10 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Cumene hydroperoxide 80-15-9 | EC50 | 3,1 mg/l | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Cumene hydroperoxide 80-15-9 | NOEC | 1 mg/l | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| maleic acid 110-16-7 | EC50 | 74,35 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| maleic acid 110-16-7 | EC10 | 11,8 mg/l | 72 h | Pseudokirchneriella subcapitata | 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) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | EC50 | > 100 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOEC | 18,6 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 |
|--|---------------|-----------------------------|---------------|---|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | EC50 | Toxicity > Water solubility | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |

| | | | | | |
|--|------|--------------|--------|----------------------------|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | EC0 | > 3.000 mg/l | 16 h | Pseudomonas fluorescens | other guideline: |
| Acrylic acid 79-10-7 | EC20 | 900 mg/l | 30 min | activated sludge, domestic | ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge) |
| Hydroxypropyl methacrylate 27813-02-1 | EC10 | 1.140 mg/l | 16 h | | not specified |
| Cumene hydroperoxide 80-15-9 | EC10 | 70 mg/l | 30 min | not specified | not specified |
| maleic acid 110-16-7 | EC10 | 44,6 mg/l | 18 h | Pseudomonas putida | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |
| methacrylic acid 79-41-4 | EC10 | 100 mg/l | 17 h | Pseudomonas putida | 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 |
|--|----------------------------|-----------|-----------------|------------------|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | not readily biodegradable. | aerobic | > 19,9 - 41,3 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | inherently biodegradable | aerobic | > 52,2 - 65,5 % | 60 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | not readily biodegradable. | aerobic | 16,8 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| 2-Hydroxyethyl methacrylate 868-77-9 | readily biodegradable | aerobic | 92 - 100 % | 14 d | OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I)) |
| Acrylic acid 79-10-7 | inherently biodegradable | aerobic | 100 % | 28 d | OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test) |
| Acrylic acid 79-10-7 | readily biodegradable | aerobic | 81 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| Hydroxypropyl methacrylate 27813-02-1 | readily biodegradable | aerobic | 94,2 % | 28 d | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | not readily biodegradable. | aerobic | 43 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | inherently biodegradable | aerobic | 66 % | 60 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| Cumene hydroperoxide 80-15-9 | not readily biodegradable. | aerobic | 3 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| maleic acid 110-16-7 | readily biodegradable | aerobic | 97,08 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| methacrylic acid 79-41-4 | readily biodegradable | aerobic | 86 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| methacrylic acid 79-41-4 | inherently biodegradable | aerobic | 100 % | 14 d | OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | readily biodegradable | aerobic | 85 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester 2351-43-1 | readily biodegradable | aerobic | 92 - 100 % | 14 d | OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I)) |

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 |
|---------------------------------|-------------------------------|---------------|-------------|-------------|---|
| Acrylic acid 79-10-7 | 3,16 | | | | QSAR (Quantitative Structure Activity Relationship) |
| Cumene hydroperoxide 80-15-9 | 9,1 | | | calculation | OECD Guideline 305 (Bioconcentration: Flow-through Fish Test) |

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 |
|--|--------------|-------------|--|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | > 6,2 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | 5,25 | 20 °C | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| 2-Hydroxyethyl methacrylate 868-77-9 | 0,42 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Acrylic acid 79-10-7 | 0,46 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Hydroxypropyl methacrylate 27813-02-1 | 0,97 | 20 °C | not specified |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | > 5,3 - 5,62 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| Cumene hydroperoxide 80-15-9 | 1,6 | 25 °C | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| maleic acid 110-16-7 | -1,3 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Acetic acid, 2-phenylhydrazide 114-83-0 | 0,74 | | not specified |
| methacrylic acid 79-41-4 | 0,93 | 22 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | 2,3 | | 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 |
|--|---|
| Reaction mass of (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) bismethacrylate and 2-{4-[2-(4-{2-[2-(methacryloyloxy)etho | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 2-Hydroxyethyl methacrylate 868-77-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Acrylic acid 79-10-7 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Hydroxypropyl methacrylate 27813-02-1 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Reaction products of 4,4'-isopropylidenediphenol, ethoxylated and methacrylic acid | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Cumene hydroperoxide 80-15-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| maleic acid 110-16-7 | 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. |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | 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:

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 or ID number

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

14.2. UN proper shipping name

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

14.3. Transport hazard class(es)

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

14.4. Packing group

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

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 (2010/75/EC) | < 3 % |

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

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:

H226 Flammable liquid and vapour.
 H242 Heating may cause a fire.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H312 Harmful 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.
 H330 Fatal if inhaled.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H351 Suspected of causing cancer.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H411 Toxic to aquatic life with long lasting effects.
 H413 May cause long lasting harmful effects to aquatic life.

| | |
|-------------|---|
| 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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