



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

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LOCTITE 648

SDS No. : 450730

V017.0

Revision: 02.07.2026

printing date: 03.07.2026

Replaces version from: 03.12.2024

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

#### 1.1. Product identifier

LOCTITE 648

UFI: E8K9-EXN6-Q20U-2S3A

#### 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 [www.mysds.henkel.com](http://www.mysds.henkel.com) or [www.henkel-adhesives.com](http://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**

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

**Precautionary statement:  
Response**

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

**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):

None

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

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

| Hazardous components<br>CAS No.<br>EC No<br>UK-REACH-Reg. No.                | Concentration | Classification                                                                                                                                                                                         | Specific Conc. Limits, M-<br>factors and ATEs                                                                                                                                                              | Add.<br>Information |
|------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9<br>231-927-0          | 10- < 20 %    | Aquatic Chronic 2, H411<br>Skin Sens. 1B, H317<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319                                                                                         | STOT SE 3; H335; C >= 10 %                                                                                                                                                                                 |                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9<br>212-782-2                         | 10- < 20 %    | Skin Irrit. 2, H315<br>Skin Sens. 1, H317<br>Eye Irrit. 2, H319                                                                                                                                        |                                                                                                                                                                                                            |                     |
| Acrylic acid<br>79-10-7<br>201-177-9                                         | 1- < 5 %      | Acute Tox. 4, H312<br>Skin Corr. 1A, H314<br>Flam. Liq. 3, H226<br>Acute Tox. 4, H302<br>Acute Tox. 4, H332<br>Aquatic Acute 1, H400<br>Aquatic Chronic 2, H411<br>STOT SE 3, H335<br>Eye Dam. 1, H318 | STOT SE 3; H335; C >= 1 %<br>=====<br>M acute = 1<br>=====<br>dermal:ATE = 1.100 mg/kg<br>inhalation:ATE = 11 mg/l;vapour                                                                                  | EU OEL              |
| Hydroxypropyl methacrylate<br>27813-02-1<br>248-666-3                        | 1- < 3 %      | Skin Sens. 1, H317<br>Eye Irrit. 2, H319                                                                                                                                                               |                                                                                                                                                                                                            |                     |
| Cumene hydroperoxide<br>80-15-9<br>201-254-7                                 | 0,1- < 1 %    | STOT RE 2, H373<br>Skin Corr. 1B, H314<br>Acute Tox. 2, H330<br>Aquatic Chronic 2, H411<br>Acute Tox. 4, H302<br>Acute Tox. 4, H312<br>Org. Perox. E, H242<br>STOT SE 3, H335                          | Eye Irrit. 2; H319; C 1 - < 3 %<br>Skin Irrit. 2; H315; C 3 - < 10 %<br>Eye Dam. 1; H318; C 3 - < 10 %<br>STOT SE 3; H335; C >= 1 %<br>Skin Corr. 1B; H314; C >= 10 %<br>=====<br>dermal:ATE = 1.100 mg/kg |                     |
| maleic acid<br>110-16-7<br>203-742-5                                         | 0,1- < 1 %    | Acute Tox. 4, H302<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Skin Sens. 1, H317<br>Acute Tox. 4, H312                                                                         | Skin Sens. 1; H317; C >= 0,1 %                                                                                                                                                                             |                     |
| Acetic acid, 2-phenylhydrazide<br>114-83-0<br>204-055-3                      | 0,1- < 1 %    | Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>Acute Tox. 4, H302<br>Skin Sens. 1, H317<br>Carc. 2, H351                                                                                          | M acute = 1<br>M chronic = 1                                                                                                                                                                               |                     |
| methacrylic acid<br>79-41-4<br>201-204-4                                     | 0,1- < 1 %    | Acute Tox. 4, H302<br>Acute Tox. 3, H311<br>Acute Tox. 4, H332<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br>STOT SE 3, H335                                                                           | STOT SE 3; H335; C >= 1 %<br>=====<br>dermal:ATE = 500 mg/kg<br>inhalation:ATE = 3,19<br>mg/l;dust/mist                                                                                                    |                     |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0<br>203-652-6         | 0,1- < 1 %    | Skin Sens. 1B, H317                                                                                                                                                                                    | dermal:ATE = > 5.000 mg/kg<br>inhalation:ATE = 28,17<br>mg/l;dust/mist                                                                                                                                     |                     |
| 2-Propenoic acid, 2-methyl-, 2-<br>(2-hydroxyethoxy)ethyl ester<br>2351-43-1 | 0,1- < 1 %    | Eye Irrit. 2, H319<br>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: Rash, Urticaria.

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

SKIN: Redness, inflammation.

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 (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) 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.

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**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

|                                        |
|----------------------------------------|
| <b>SECTION 7: Handling and storage</b> |
|----------------------------------------|

**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 <sup>3</sup> | Value type                        | Short term exposure limit category / Remarks | Regulatory list |
|---------------------------------------------------------------|-----|-------------------|-----------------------------------|----------------------------------------------|-----------------|
| Acrylic acid<br>79-10-7<br>[ACRYLIC ACID (PROP-2-ENOIC ACID)] | 10  | 29                | Time Weighted Average (TWA):      | Indicative                                   | ECTLV           |
| Acrylic acid<br>79-10-7<br>[ACRYLIC ACID (PROP-2-ENOIC ACID)] | 20  | 59                | Short Term Exposure Limit (STEL): | Indicative                                   | ECTLV           |
| Acrylic acid<br>79-10-7<br>[ACRYLIC ACID]                     | 10  | 29                | Time Weighted Average (TWA):      |                                              | EH40 WEL        |
| Acrylic acid<br>79-10-7<br>[Acrylic acid]                     | 20  | 59                | Short Term Exposure Limit (STEL): | 1 minute                                     | EH40 WEL        |
| Methacrylic acid<br>79-41-4<br>[METHACRYLIC ACID]             | 20  | 72                | Time Weighted Average (TWA):      |                                              | EH40 WEL        |
| Methacrylic acid<br>79-41-4<br>[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 <sup>3</sup> | Value type                        | Short term exposure limit category / Remarks | Regulatory list |
|---------------------------------------------------------------|-----|-------------------|-----------------------------------|----------------------------------------------|-----------------|
| Acrylic acid<br>79-10-7<br>[ACRYLIC ACID (PROP-2-ENOIC ACID)] | 10  | 29                | Time Weighted Average (TWA):      | Indicative                                   | ECTLV           |
| Acrylic acid<br>79-10-7<br>[ACRYLIC ACID (PROP-2-ENOIC ACID)] | 20  | 59                | Short Term Exposure Limit (STEL): | Indicative                                   | ECTLV           |
| Acrylic acid<br>79-10-7<br>[ACRYLIC ACID]                     | 10  | 29                | Time Weighted Average (TWA):      | Indicative OELV                              | IR_OEL          |
| Acrylic acid<br>79-10-7<br>[Acrylic acid]                     | 20  | 59                | Short Term Exposure Limit (STEL): | 1 minute<br>Indicative OELV                  | IR_OEL          |
| Methacrylic acid<br>79-41-4<br>[METHACRYLIC ACID]             | 20  | 70                | Time Weighted Average (TWA):      |                                              | IR_OEL          |
| Methacrylic acid<br>79-41-4<br>[METHACRYLIC ACID]             | 40  | 140               | Short Term Exposure Limit (STEL): | 15 minutes                                   | IR_OEL          |

**Predicted No-Effect Concentration (PNEC):**

| Name on list                                                        | Environmental<br>Compartment       | Exposure<br>period | Value           |     |                  |        | Remarks                             |
|---------------------------------------------------------------------|------------------------------------|--------------------|-----------------|-----|------------------|--------|-------------------------------------|
|                                                                     |                                    |                    | mg/l            | ppm | mg/kg            | others |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | aqua<br>(freshwater)               |                    | 0,0019<br>mg/l  |     |                  |        |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | aqua (marine<br>water)             |                    | 0,00019<br>mg/l |     |                  |        |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | aqua<br>(intermittent<br>releases) |                    | 0,019 mg/l      |     |                  |        |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | sewage<br>treatment plant<br>(STP) |                    | 100 mg/l        |     |                  |        |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | sediment<br>(freshwater)           |                    |                 |     | 0,141<br>mg/kg   |        |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | sediment<br>(marine water)         |                    |                 |     | 0,014<br>mg/kg   |        |                                     |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                 | Soil                               |                    |                 |     | 0,027<br>mg/kg   |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | aqua<br>(freshwater)               |                    | 0,482 mg/l      |     |                  |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | aqua (marine<br>water)             |                    | 0,048 mg/l      |     |                  |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | sewage<br>treatment plant<br>(STP) |                    | 10 mg/l         |     |                  |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | aqua<br>(intermittent<br>releases) |                    | 1 mg/l          |     |                  |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | sediment<br>(freshwater)           |                    |                 |     | 1,98 mg/kg       |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | sediment<br>(marine water)         |                    |                 |     | 0,198<br>mg/kg   |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | Soil                               |                    |                 |     | 0,113<br>mg/kg   |        |                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9                             | Predator                           |                    |                 |     |                  |        | no potential for<br>bioaccumulation |
| Acrylic acid<br>79-10-7                                             | aqua<br>(freshwater)               |                    | 0,003 mg/l      |     |                  |        |                                     |
| Acrylic acid<br>79-10-7                                             | aqua (marine<br>water)             |                    | 0,0003<br>mg/l  |     |                  |        |                                     |
| Acrylic acid<br>79-10-7                                             | sewage<br>treatment plant<br>(STP) |                    | 0,9 mg/l        |     |                  |        |                                     |
| Acrylic acid<br>79-10-7                                             | sediment<br>(freshwater)           |                    |                 |     | 0,0236<br>mg/kg  |        |                                     |
| Acrylic acid<br>79-10-7                                             | sediment<br>(marine water)         |                    |                 |     | 0,00236<br>mg/kg |        |                                     |
| Acrylic acid<br>79-10-7                                             | Soil                               |                    |                 |     | 1 mg/kg          |        |                                     |
| Acrylic acid<br>79-10-7                                             | oral                               |                    |                 |     | 0,03 g/kg        |        |                                     |
| Acrylic acid<br>79-10-7                                             | Air                                |                    |                 |     |                  |        | no hazard identified                |
| Methacrylic acid, monoester with propane-<br>1,2-diol<br>27813-02-1 | aqua<br>(freshwater)               |                    | 0,904 mg/l      |     |                  |        |                                     |
| Methacrylic acid, monoester with propane-<br>1,2-diol<br>27813-02-1 | aqua (marine<br>water)             |                    | 0,0904<br>mg/l  |     |                  |        |                                     |
| Methacrylic acid, monoester with propane-<br>1,2-diol<br>27813-02-1 | sewage<br>treatment plant<br>(STP) |                    | 10 mg/l         |     |                  |        |                                     |
| Methacrylic acid, monoester with propane-<br>1,2-diol<br>27813-02-1 | aqua<br>(intermittent<br>releases) |                    | 0,972 mg/l      |     |                  |        |                                     |
| Methacrylic acid, monoester with propane-<br>1,2-diol<br>27813-02-1 | sediment<br>(freshwater)           |                    |                 |     | 4,13 mg/kg       |        |                                     |

|                                                                 |                                    |  |                 |  |                 |  |                                     |
|-----------------------------------------------------------------|------------------------------------|--|-----------------|--|-----------------|--|-------------------------------------|
| Methacrylic acid, monoester with propane-1,2-diol<br>27813-02-1 | sediment<br>(marine water)         |  |                 |  | 0,413<br>mg/kg  |  |                                     |
| Methacrylic acid, monoester with propane-1,2-diol<br>27813-02-1 | Soil                               |  |                 |  | 0,295<br>mg/kg  |  |                                     |
| Methacrylic acid, monoester with propane-1,2-diol<br>27813-02-1 | Air                                |  |                 |  |                 |  | no hazard identified                |
| Methacrylic acid, monoester with propane-1,2-diol<br>27813-02-1 | Predator                           |  |                 |  |                 |  | no potential for<br>bioaccumulation |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | aqua<br>(freshwater)               |  | 0,0031<br>mg/l  |  |                 |  |                                     |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | aqua<br>(intermittent<br>releases) |  | 0,031 mg/l      |  |                 |  |                                     |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | aqua (marine<br>water)             |  | 0,00031<br>mg/l |  |                 |  |                                     |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | sewage<br>treatment plant<br>(STP) |  | 0,35 mg/l       |  |                 |  |                                     |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | sediment<br>(freshwater)           |  |                 |  | 0,023<br>mg/kg  |  |                                     |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | sediment<br>(marine water)         |  |                 |  | 0,0023<br>mg/kg |  |                                     |
| .alpha.,.alpha.-Dimethylbenzyl<br>hydroperoxide<br>80-15-9      | Soil                               |  |                 |  | 0,0029<br>mg/kg |  |                                     |
| methacrylic acid<br>79-41-4                                     | aqua<br>(freshwater)               |  | 0,82 mg/l       |  |                 |  |                                     |
| methacrylic acid<br>79-41-4                                     | Freshwater -<br>intermittent       |  | 0,45 mg/l       |  |                 |  |                                     |
| methacrylic acid<br>79-41-4                                     | aqua (marine<br>water)             |  | 0,082 mg/l      |  |                 |  |                                     |
| methacrylic acid<br>79-41-4                                     | sewage<br>treatment plant<br>(STP) |  | 100 mg/l        |  |                 |  |                                     |
| methacrylic acid<br>79-41-4                                     | sediment<br>(freshwater)           |  |                 |  | 3,09 mg/kg      |  |                                     |
| methacrylic acid<br>79-41-4                                     | sediment<br>(marine water)         |  |                 |  | 0,309<br>mg/kg  |  |                                     |
| methacrylic acid<br>79-41-4                                     | Soil                               |  |                 |  | 0,137<br>mg/kg  |  |                                     |
| methacrylic acid<br>79-41-4                                     | Predator                           |  |                 |  |                 |  | no potential for<br>bioaccumulation |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | aqua<br>(freshwater)               |  | 0,164 mg/l      |  |                 |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | aqua (marine<br>water)             |  | 0,0164<br>mg/l  |  |                 |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | sewage<br>treatment plant<br>(STP) |  | 10 mg/l         |  |                 |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | aqua<br>(intermittent<br>releases) |  | 0,164 mg/l      |  |                 |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | sediment<br>(freshwater)           |  |                 |  | 1,85 mg/kg      |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | sediment<br>(marine water)         |  |                 |  | 0,185<br>mg/kg  |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | Soil                               |  |                 |  | 0,274<br>mg/kg  |  |                                     |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | Air                                |  |                 |  |                 |  | no hazard identified                |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0            | Predator                           |  |                 |  |                 |  | no potential for<br>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<br>7779-31-9             | Workers            | inhalation        | Long term exposure - systemic effects     |               | 16,45 mg/m3 |                                  |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9             | Workers            | dermal            | Long term exposure - systemic effects     |               | 46,7 mg/kg  |                                  |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9             | General population | inhalation        | Long term exposure - systemic effects     |               | 2,9 mg/m3   |                                  |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9             | General population | dermal            | Long term exposure - systemic effects     |               | 1,67 mg/kg  |                                  |
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9             | General population | oral              | Long term exposure - systemic effects     |               | 1,67 mg/kg  |                                  |
| 2-Hydroxyethyl methacrylate<br>868-77-9                         | Workers            | dermal            | Long term exposure - systemic effects     |               | 1,3 mg/kg   | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate<br>868-77-9                         | Workers            | Inhalation        | Long term exposure - systemic effects     |               | 4,9 mg/m3   | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate<br>868-77-9                         | General population | dermal            | Long term exposure - systemic effects     |               | 0,83 mg/kg  | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate<br>868-77-9                         | General population | Inhalation        | Long term exposure - systemic effects     |               | 2,9 mg/m3   | no potential for bioaccumulation |
| 2-Hydroxyethyl methacrylate<br>868-77-9                         | General population | oral              | Long term exposure - systemic effects     |               | 0,83 mg/kg  | no potential for bioaccumulation |
| Acrylic acid<br>79-10-7                                         | Workers            | inhalation        | Long term exposure - local effects        |               | 30 mg/m3    | no hazard identified             |
| Acrylic acid<br>79-10-7                                         | Workers            | inhalation        | Acute/short term exposure - local effects |               | 30 mg/m3    | no hazard identified             |
| Acrylic acid<br>79-10-7                                         | Workers            | dermal            | Acute/short term exposure - local effects |               | 1 mg/cm2    | no hazard identified             |
| Acrylic acid<br>79-10-7                                         | General population | dermal            | Acute/short term exposure - local effects |               | 1 mg/cm2    | no hazard identified             |
| Acrylic acid<br>79-10-7                                         | General population | inhalation        | Acute/short term exposure - local effects |               | 3,6 mg/m3   | no hazard identified             |
| Acrylic acid<br>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<br>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<br>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<br>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<br>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<br>27813-02-1 | General population | oral              | Long term exposure - systemic effects     |               | 2,5 mg/kg   | no hazard identified             |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide<br>80-15-9         | Workers            | inhalation        | Long term exposure - systemic effects     |               | 6 mg/m3     |                                  |
| Maleic acid<br>110-16-7                                         | Workers            | dermal            | Acute/short term exposure - local         |               |             |                                  |

|                                                      |                       |            | effects                                            |  |             |                                     |
|------------------------------------------------------|-----------------------|------------|----------------------------------------------------|--|-------------|-------------------------------------|
| Maleic acid<br>110-16-7                              | Workers               | dermal     | Long term<br>exposure - local<br>effects           |  |             |                                     |
| Maleic acid<br>110-16-7                              | Workers               | dermal     | Acute/short term<br>exposure -<br>systemic effects |  |             |                                     |
| Maleic acid<br>110-16-7                              | Workers               | dermal     | Long term<br>exposure -<br>systemic effects        |  |             |                                     |
| Maleic acid<br>110-16-7                              | Workers               | inhalation | Acute/short term<br>exposure - local<br>effects    |  |             |                                     |
| Maleic acid<br>110-16-7                              | Workers               | inhalation | Long term<br>exposure -<br>systemic effects        |  | 0,987 mg/m3 |                                     |
| Maleic acid<br>110-16-7                              | Workers               | inhalation | Long term<br>exposure - local<br>effects           |  |             |                                     |
| methacrylic acid<br>79-41-4                          | Workers               | Inhalation | Long term<br>exposure - local<br>effects           |  | 88 mg/m3    | no potential for<br>bioaccumulation |
| methacrylic acid<br>79-41-4                          | Workers               | Inhalation | Long term<br>exposure -<br>systemic effects        |  | 29,6 mg/m3  | no potential for<br>bioaccumulation |
| methacrylic acid<br>79-41-4                          | Workers               | dermal     | Long term<br>exposure -<br>systemic effects        |  | 4,25 mg/kg  | no potential for<br>bioaccumulation |
| methacrylic acid<br>79-41-4                          | General<br>population | Inhalation | Long term<br>exposure - local<br>effects           |  | 6,55 mg/m3  | no potential for<br>bioaccumulation |
| methacrylic acid<br>79-41-4                          | General<br>population | Inhalation | Long term<br>exposure -<br>systemic effects        |  | 6,3 mg/m3   | no potential for<br>bioaccumulation |
| methacrylic acid<br>79-41-4                          | General<br>population | dermal     | Long term<br>exposure -<br>systemic effects        |  | 2,55 mg/kg  | no potential for<br>bioaccumulation |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0 | Workers               | inhalation | Long term<br>exposure -<br>systemic effects        |  | 48,5 mg/m3  | no hazard identified                |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0 | Workers               | dermal     | Long term<br>exposure -<br>systemic effects        |  | 13,9 mg/kg  | no hazard identified                |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0 | General<br>population | inhalation | Long term<br>exposure -<br>systemic effects        |  | 14,5 mg/m3  | no hazard identified                |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0 | General<br>population | dermal     | Long term<br>exposure -<br>systemic effects        |  | 8,33 mg/kg  | no hazard identified                |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0 | General<br>population | oral       | Long term<br>exposure -<br>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;  $\geq 0.4$  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

|                                                             |                                                                                                                                     |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 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)<br>(40 °C (104 °F); )                 | $> 20,5$ mm <sup>2</sup> /s                                                                                                         |
| Viscosity, dynamic<br>( )                                   | 450 - 550 mPa.s no method / method unknown                                                                                          |
| Solubility (qualitative)<br>(Solvent: Acetone)              | Soluble                                                                                                                             |
| Solubility (qualitative)<br>(20 °C (68 °F); Solvent: Water) | Slight                                                                                                                              |
| Partition coefficient: n-octanol/water                      | Not applicable<br>Mixture                                                                                                           |
| Vapour pressure<br>(26 °C (78.8 °F))                        | $< 5$ mm hg                                                                                                                         |
| Vapour pressure<br>(20 °C (68 °F))                          | $< 0,13$ mbar                                                                                                                       |
| Density<br>(20 °C (68 °F))                                  | 1,1 g/cm <sup>3</sup> no method / method unknown                                                                                    |
| Relative vapour density:<br>(20 °C)                         | $> 1$                                                                                                                               |
| Particle characteristics                                    | Not applicable<br>Product is a liquid                                                                                               |

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## 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.

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

| Hazardous substances<br>CAS-No.                                                  | Value<br>type | Value         | Species | Method                                                            |
|----------------------------------------------------------------------------------|---------------|---------------|---------|-------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9                           | LD0           | > 5.000 mg/kg | rat     | OECD Guideline 401 (Acute Oral Toxicity)                          |
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9                           | LD50          | > 5.000 mg/kg | rat     | OECD Guideline 401 (Acute Oral Toxicity)                          |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9                                       | LD50          | 5.564 mg/kg   | rat     | FDA Guideline                                                     |
| Acrylic acid<br>79-10-7                                                          | LD50          | 1.500 mg/kg   | rat     | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Hydroxypropyl<br>methacrylate<br>27813-02-1                                      | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 401 (Acute Oral Toxicity)                          |
| Cumene hydroperoxide<br>80-15-9                                                  | LD50          | 382 mg/kg     | rat     | other guideline:                                                  |
| maleic acid<br>110-16-7                                                          | LD50          | 708 mg/kg     | rat     | not specified                                                     |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0                                   | LD50          | 310 mg/kg     | rat     | OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)   |
| methacrylic acid<br>79-41-4                                                      | LD50          | 1.320 mg/kg   | rat     | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0                          | LD50          | 10.837 mg/kg  | rat     | not specified                                                     |
| 2-Propenoic acid, 2-<br>methyl-, 2-(2-<br>hydroxyethoxy)ethyl ester<br>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.

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

| Hazardous substances<br>CAS-No.                                                  | Value<br>type                          | Value                | Species | Method                                     |
|----------------------------------------------------------------------------------|----------------------------------------|----------------------|---------|--------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9                           | LD0                                    | > 2.000 mg/kg        | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9                           | LD50                                   | > 2.000 mg/kg        | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9                                       | LD50                                   | > 5.000 mg/kg        | rabbit  | not specified                              |
| Acrylic acid<br>79-10-7                                                          | Acute<br>toxicity<br>estimate<br>(ATE) | 1.100 mg/kg          |         | Expert judgement                           |
| Hydroxypropyl<br>methacrylate<br>27813-02-1                                      | LD50                                   | > 5.000 mg/kg        | rabbit  | not specified                              |
| Cumene hydroperoxide<br>80-15-9                                                  | Acute<br>toxicity<br>estimate<br>(ATE) | 1.100 mg/kg          |         | Expert judgement                           |
| maleic acid<br>110-16-7                                                          | LD50                                   | 1.560 mg/kg          | rabbit  | not specified                              |
| methacrylic acid<br>79-41-4                                                      | LD50                                   | 500 - 1.000<br>mg/kg | rabbit  | Dermal Toxicity Screening                  |
| methacrylic acid<br>79-41-4                                                      | Acute<br>toxicity<br>estimate<br>(ATE) | 500 mg/kg            |         | Expert judgement                           |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0                          | Acute<br>toxicity<br>estimate<br>(ATE) | > 5.000 mg/kg        |         | Expert judgement                           |
| 2-Propenoic acid, 2-<br>methyl-, 2-(2-<br>hydroxyethoxy)ethyl ester<br>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.

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

| Hazardous substances<br>CAS-No.                         | Value<br>type                          | Value           | Test atmosphere | Exposure<br>time | Species | Method                                                                        |
|---------------------------------------------------------|----------------------------------------|-----------------|-----------------|------------------|---------|-------------------------------------------------------------------------------|
| Acrylic acid<br>79-10-7                                 | LC0                                    | 5,1 mg/l        | vapour          | 4 h              | rat     | equivalent or similar to OECD<br>Guideline 403 (Acute<br>Inhalation Toxicity) |
| Acrylic acid<br>79-10-7                                 | Acute<br>toxicity<br>estimate<br>(ATE) | 11 mg/l         | vapour          |                  |         | Expert judgement                                                              |
| Cumene hydroperoxide<br>80-15-9                         | LC50                                   | 1,370 mg/l      | vapour          | 4 h              | rat     | not specified                                                                 |
| methacrylic acid<br>79-41-4                             | LC50                                   | 3,19 - 6,5 mg/l | dust/mist       | 4 h              | rat     | equivalent or similar to OECD<br>Guideline 403 (Acute<br>Inhalation Toxicity) |
| methacrylic acid<br>79-41-4                             | Acute<br>toxicity<br>estimate<br>(ATE) | 3,19 mg/l       | dust/mist       |                  |         | Expert judgement                                                              |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0 | Acute<br>toxicity<br>estimate<br>(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<br>CAS-No.                                                  | Result                         | Exposure<br>time | Species                                                                   | Method                                                                                            |
|----------------------------------------------------------------------------------|--------------------------------|------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9                                       | slightly<br>irritating         | 24 h             | rabbit                                                                    | Draize Test                                                                                       |
| Acrylic acid<br>79-10-7                                                          | Sub-Category<br>1A (corrosive) | 3 min            | rabbit                                                                    | OECD Guideline 404 (Acute Dermal Irritation / Corrosion)                                          |
| Hydroxypropyl<br>methacrylate<br>27813-02-1                                      | not irritating                 | 24 h             | rabbit                                                                    | Draize Test                                                                                       |
| Cumene hydroperoxide<br>80-15-9                                                  | corrosive                      |                  | rabbit                                                                    | Draize Test                                                                                       |
| maleic acid<br>110-16-7                                                          | irritating                     | 24 h             | human                                                                     | Patch Test                                                                                        |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0                                   | not corrosive                  |                  | Human,<br>EpiSkinTM<br>(SM),<br>Reconstructed<br>Human<br>Epidermis (RHE) | OECD Guideline 431 (In Vitro Skin Corrosion:<br>Reconstructed Human Epidermis (RHE) Test Method)  |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0                                   | not irritating                 |                  | Human,<br>EpiSkinTM<br>(SM),<br>Reconstructed<br>Human<br>Epidermis (RHE) | OECD Guideline 439 (In Vitro Skin Irritation:<br>Reconstructed Human Epidermis (RHE) Test Method) |
| methacrylic acid<br>79-41-4                                                      | corrosive                      | 3 min            | rabbit                                                                    | OECD Guideline 404 (Acute Dermal Irritation / Corrosion)                                          |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0                          | not irritating                 | 24 h             | rabbit                                                                    | Draize Test                                                                                       |
| 2-Propenoic acid, 2-<br>methyl-, 2-(2-<br>hydroxyethoxy)ethyl ester<br>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<br>CAS-No.                                                  | Result                                                | Exposure<br>time | Species                   | Method                                                |
|----------------------------------------------------------------------------------|-------------------------------------------------------|------------------|---------------------------|-------------------------------------------------------|
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9                                       | Category 2B<br>(mildly<br>irritating to<br>eyes)      |                  | rabbit                    | Draize Test                                           |
| Acrylic acid<br>79-10-7                                                          | Category 1<br>(irreversible<br>effects on the<br>eye) |                  | rabbit                    | BASF Test                                             |
| Hydroxypropyl<br>methacrylate<br>27813-02-1                                      | Category 2B<br>(mildly<br>irritating to<br>eyes)      |                  | rabbit                    | Draize Test                                           |
| maleic acid<br>110-16-7                                                          | highly<br>irritating                                  |                  | rabbit                    | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0                                   | not irritating                                        |                  | Chicken, eye,<br>isolated | OECD Guideline 438 (Isolated Chicken Eye Test Method) |
| methacrylic acid<br>79-41-4                                                      | corrosive                                             |                  | rabbit                    | Draize Test                                           |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0                          | not irritating                                        |                  | rabbit                    | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 2-Propenoic acid, 2-<br>methyl-, 2-(2-<br>hydroxyethoxy)ethyl ester<br>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.

| <b>Hazardous substances<br/>CAS-No.</b>              | <b>Result</b>   | <b>Test type</b>                       | <b>Species</b>                       | <b>Method</b>                                                    |
|------------------------------------------------------|-----------------|----------------------------------------|--------------------------------------|------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9  | sensitising     | Mouse local lymphnode assay (LLNA)     | mouse                                | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)  |
| 2-Hydroxyethyl methacrylate<br>868-77-9              | not sensitising | Buehler test                           | guinea pig                           | Buehler test                                                     |
| 2-Hydroxyethyl methacrylate<br>868-77-9              | sensitising     | Guinea pig maximisation test           | guinea pig                           | Magnusson and Kligman Method                                     |
| Acrylic acid<br>79-10-7                              | not sensitising | Freund's complete adjuvant test        | guinea pig                           | Klecak Method                                                    |
| Acrylic acid<br>79-10-7                              | not sensitising | Split adjuvant test                    | guinea pig                           | Maguire Method                                                   |
| Hydroxypropyl methacrylate<br>27813-02-1             | sensitising     |                                        | human                                | not specified                                                    |
| Hydroxypropyl methacrylate<br>27813-02-1             | sensitising     | Guinea pig maximisation test           | guinea pig                           | not specified                                                    |
| maleic acid<br>110-16-7                              | sensitising     | Mouse local lymphnode assay (LLNA)     | mouse                                | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)  |
| maleic acid<br>110-16-7                              | sensitising     | Guinea pig maximisation test           | guinea pig                           | OECD Guideline 406 (Skin Sensitisation)                          |
| Acetic acid, 2-phenylhydrazide<br>114-83-0           | positive        | Direct peptide reactivity assay (DPRA) | cysteine and lysine, in chemico test | OECD Guideline 442C (Direct Peptide Reactivity Assay (DPRA))     |
| Acetic acid, 2-phenylhydrazide<br>114-83-0           | positive        | Activation of keratinocytes            | human keratinocytes, in vitro test   | OECD Guideline 442D (ARE-Nrf2 Luciferase Test Method)            |
| Acetic acid, 2-phenylhydrazide<br>114-83-0           | positive        | activation of dendritic cells          | human monocytes, in vitro test       | OECD Guideline 442E (H-CLAT: Human Cell Line Activation Test)    |
| methacrylic acid<br>79-41-4                          | not sensitising | Buehler test                           | guinea pig                           | equivalent or similar to OECD Guideline 406 (Skin Sensitisation) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>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.

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

| Hazardous substances<br>CAS-No.                         | Result   | Type of study /<br>Route of<br>administration                                                     | Metabolic<br>activation /<br>Exposure time | Species | Method                                                                                                                                               |
|---------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------|--------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9  | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                                                                                          |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9              | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                                                                                          |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9              | positive | in vitro mammalian<br>chromosome<br>aberration test                                               | with and without                           |         | OECD Guideline 473 (In vitro<br>Mammalian Chromosome<br>Aberration Test)                                                                             |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9              | negative | mammalian cell<br>gene mutation assay                                                             | with and without                           |         | OECD Guideline 476 (In vitro<br>Mammalian Cell Gene<br>Mutation Test)                                                                                |
| Acrylic acid<br>79-10-7                                 | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | equivalent or similar to OECD<br>Guideline 471 (Bacterial<br>Reverse Mutation Assay)                                                                 |
| Acrylic acid<br>79-10-7                                 | negative | mammalian cell<br>gene mutation assay                                                             | with and without                           |         | equivalent or similar to OECD<br>Guideline 476 (In vitro<br>Mammalian Cell Gene<br>Mutation Test)                                                    |
| Acrylic acid<br>79-10-7                                 | negative | DNA damage and<br>repair assay,<br>unscheduled DNA<br>synthesis in<br>mammalian cells in<br>vitro | without                                    |         | equivalent or similar to OECD<br>Guideline 482 (Genetic<br>Toxicology: DNA Damage<br>and Repair, Unscheduled<br>DNA Synthesis in Mammalian<br>Cells) |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                                                                                          |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | positive | in vitro mammalian<br>chromosome<br>aberration test                                               | with and without                           |         | Chromosome Aberration Test                                                                                                                           |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | negative | mammalian cell<br>gene mutation assay                                                             | with and without                           |         | OECD Guideline 476 (In vitro<br>Mammalian Cell Gene<br>Mutation Test)                                                                                |
| Cumene hydroperoxide<br>80-15-9                         | positive | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | without                                    |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                                                                                          |
| maleic acid<br>110-16-7                                 | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | no data                                    |         | Ames Test                                                                                                                                            |
| maleic acid<br>110-16-7                                 | negative | mammalian cell<br>gene mutation assay                                                             | with and without                           |         | OECD Guideline 476 (In vitro<br>Mammalian Cell Gene<br>Mutation Test)                                                                                |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0          | positive | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                                                                                          |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0          | negative | in vitro mammalian<br>cell micronucleus<br>test                                                   | with and without                           |         | OECD Guideline 487 (In vitro<br>Mammalian Cell<br>Micronucleus Test)                                                                                 |
| methacrylic acid<br>79-41-4                             | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | equivalent or similar to OECD<br>Guideline 471 (Bacterial<br>Reverse Mutation Assay)                                                                 |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0 | negative | mammalian cell<br>gene mutation assay                                                             | with and without                           |         | OECD Guideline 476 (In vitro<br>Mammalian Cell Gene<br>Mutation Test)                                                                                |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0 | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test)                                            | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                                                                                          |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0 | negative | in vitro mammalian<br>cell micronucleus<br>test                                                   | with and without                           |         | OECD Guideline 487 (In vitro<br>Mammalian Cell<br>Micronucleus Test)                                                                                 |

**Carcinogenicity**

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

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

| <b>Hazardous components<br/>CAS-No.</b>        | <b>Result</b>    | <b>Route of<br/>application</b> | <b>Exposure<br/>time /<br/>Frequency<br/>of treatment</b> | <b>Species</b> | <b>Sex</b>  | <b>Method</b>                                                               |
|------------------------------------------------|------------------|---------------------------------|-----------------------------------------------------------|----------------|-------------|-----------------------------------------------------------------------------|
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9     | not carcinogenic | inhalation                      | 2 y<br>6 h/d, 5 d/w                                       | rat            | female      | equivalent or similar<br>OECD Guideline 451<br>(Carcinogenicity<br>Studies) |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9     | not carcinogenic | inhalation                      | 2 y<br>6 h/d, 5 d/w                                       | rat            | male        | equivalent or similar<br>OECD Guideline 451<br>(Carcinogenicity<br>Studies) |
| Acrylic acid<br>79-10-7                        | not carcinogenic | oral: drinking<br>water         | 26 - 28 m<br>continuously                                 | rat            | male/female | OECD Guideline 451<br>(Carcinogenicity<br>Studies)                          |
| Acrylic acid<br>79-10-7                        | not carcinogenic | dermal                          | 21 m<br>3 times/w                                         | mouse          | male/female | not specified                                                               |
| Hydroxypropyl<br>methacrylate<br>27813-02-1    | not carcinogenic | inhalation                      | 2 y<br>6 h/d, 5 d/w                                       | rat            | male        | equivalent or similar<br>OECD Guideline 451<br>(Carcinogenicity<br>Studies) |
| maleic acid<br>110-16-7                        | not carcinogenic | oral: feed                      | 2 y<br>daily                                              | rat            | male/female | OECD Guideline 451<br>(Carcinogenicity<br>Studies)                          |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0 | carcinogenic     | oral: drinking<br>water         | continuous                                                | mouse          | male/female | not specified                                                               |
| methacrylic acid<br>79-41-4                    | not carcinogenic | inhalation                      | 2 y                                                       | mouse          | male/female | OECD Guideline 451<br>(Carcinogenicity<br>Studies)                          |

**Reproductive toxicity:**

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

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

| Hazardous substances<br>CAS-No.                         | Result / Value                                               | Test type                   | Route of<br>application    | Species | Method                                                                                                                                  |
|---------------------------------------------------------|--------------------------------------------------------------|-----------------------------|----------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9              | NOAEL P $\geq$ 1.000 mg/kg<br>NOAEL F1 $\geq$ 1.000 mg/kg    | screening                   | oral: gavage               | rat     | equivalent or similar to<br>OECD Guideline 422<br>(Combined Repeated Dose<br>Toxicity Study)                                            |
| Acrylic acid<br>79-10-7                                 | NOAEL P 83 mg/kg<br>NOAEL F1 250 mg/kg                       | one-<br>generation<br>study | oral:<br>drinking<br>water | rat     | equivalent or similar to<br>OECD Guideline 415 (One-<br>Generation Reproduction<br>Toxicity Study)                                      |
| Acrylic acid<br>79-10-7                                 | NOAEL P 240 mg/kg<br>NOAEL F1 53 mg/kg<br>NOAEL F2 53 mg/kg  | two-<br>generation<br>study | oral:<br>drinking<br>water | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study)                                                                  |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | NOAEL P 300 mg/kg<br>NOAEL F1 1.000 mg/kg                    | screening                   | oral: gavage               | rat     | OECD Guideline 422<br>(Combined Repeated Dose<br>Toxicity Study with the<br>Reproduction /<br>Developmental Toxicity<br>Screening Test) |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | NOAEL P 400 mg/kg<br>NOAEL F1 400 mg/kg                      | two-<br>generation<br>study | oral: gavage               | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study)                                                                  |
| maleic acid<br>110-16-7                                 | NOAEL F1 150 mg/kg<br>NOAEL F2 55 mg/kg                      | Two<br>generation<br>study  | oral: gavage               | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study)                                                                  |
| methacrylic acid<br>79-41-4                             | NOAEL P 50 mg/kg<br>NOAEL F1 400 mg/kg<br>NOAEL F2 400 mg/kg | Two<br>generation<br>study  | oral: gavage               | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study)                                                                  |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0 | NOAEL P 1.000 mg/kg<br>NOAEL F1 1.000 mg/kg                  |                             | oral: gavage               | rat     | OECD Guideline 422<br>(Combined Repeated Dose<br>Toxicity Study with the<br>Reproduction /<br>Developmental Toxicity<br>Screening Test) |

**STOT-single exposure:**

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

| Hazardous substances<br>CAS-No.                        | Assessment                        | Route of<br>exposure | Target Organs | Remarks |
|--------------------------------------------------------|-----------------------------------|----------------------|---------------|---------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9 | May cause respiratory irritation. |                      |               |         |
| Acrylic acid<br>79-10-7                                | May cause respiratory irritation. |                      |               |         |
| Cumene hydroperoxide<br>80-15-9                        | May cause respiratory irritation. |                      |               |         |
| maleic acid<br>110-16-7                                | May cause respiratory irritation. |                      |               |         |
| methacrylic acid<br>79-41-4                            | May cause respiratory irritation. |                      |               |         |

**STOT-repeated exposure:**

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

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

| Hazardous substances<br>CAS-No.                         | Result / Value    | Route of<br>application    | Exposure time /<br>Frequency of<br>treatment | Species | Method                                                                                                                                  |
|---------------------------------------------------------|-------------------|----------------------------|----------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9  | NOAEL 1.000 mg/kg | oral: gavage               | 28 d                                         | rat     | OECD Guideline 422<br>(Combined Repeated<br>Dose Toxicity Study with<br>the Reproduction /<br>Developmental Toxicity<br>Screening Test) |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9              | NOAEL 100 mg/kg   | oral: gavage               | 49 d                                         | rat     | OECD Guideline 422<br>(Combined Repeated<br>Dose Toxicity Study with<br>the Reproduction /<br>Developmental Toxicity<br>Screening Test) |
| 2-Hydroxyethyl<br>methacrylate<br>868-77-9              | NOAEL 0,352 mg/l  | inhalation                 | 90 d                                         | rat     | OECD Guideline 413<br>(Subchronic Inhalation<br>Toxicity: 90-Day)                                                                       |
| Acrylic acid<br>79-10-7                                 | NOAEL 40 mg/kg    | oral:<br>drinking<br>water | 12 Months                                    | rat     | equivalent or similar to<br>OECD Guideline 452<br>(Chronic Toxicity<br>Studies)                                                         |
| Acrylic acid<br>79-10-7                                 | NOAEL 0,015 mg/l  | inhalation:<br>vapour      | 90 d                                         | mouse   | equivalent or similar to<br>OECD Guideline 413<br>(Subchronic Inhalation<br>Toxicity: 90-Day)                                           |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | NOAEL 300 mg/kg   | oral: gavage               | 49 d                                         | rat     | OECD Guideline 422<br>(Combined Repeated<br>Dose Toxicity Study with<br>the Reproduction /<br>Developmental Toxicity<br>Screening Test) |
| Hydroxypropyl<br>methacrylate<br>27813-02-1             | NOAEL 0,352 mg/l  | inhalation                 | 90 d                                         | rat     | OECD Guideline 413<br>(Subchronic Inhalation<br>Toxicity: 90-Day)                                                                       |
| Cumene hydroperoxide<br>80-15-9                         |                   | inhalation:<br>aerosol     | 6 h/d<br>5 d/w                               | rat     | not specified                                                                                                                           |
| maleic acid<br>110-16-7                                 | NOAEL >= 40 mg/kg | oral: feed                 | 90 d                                         | rat     | OECD Guideline 408<br>(Repeated Dose 90-Day<br>Oral Toxicity in Rodents)                                                                |
| methacrylic acid<br>79-41-4                             |                   | inhalation                 | 90 d<br>6 h/d, 5 d/w                         | rat     | OECD Guideline 413<br>(Subchronic Inhalation<br>Toxicity: 90-Day)                                                                       |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0 | NOAEL 1.000 mg/kg | oral: gavage               |                                              | rat     | OECD Guideline 422<br>(Combined Repeated<br>Dose Toxicity Study with<br>the Reproduction /<br>Developmental Toxicity<br>Screening Test) |

**Aspiration hazard:**

No data available.

**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

No substance data available.

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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.

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

| Hazardous substances<br>CAS-No.                                                | Value<br>type | Value        | Exposure time | Species                                            | Method                                                      |
|--------------------------------------------------------------------------------|---------------|--------------|---------------|----------------------------------------------------|-------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9                         | LC50          | 1,9 mg/l     | 96 h          | Brachydanio rerio (new name:<br>Danio rerio)       | OECD Guideline 203 (Fish,<br>Acute Toxicity Test)           |
| 2-Hydroxyethyl methacrylate<br>868-77-9                                        | LC50          | > 100 mg/l   | 96 h          | Oryzias latipes                                    | OECD Guideline 203 (Fish,<br>Acute Toxicity Test)           |
| Acrylic acid<br>79-10-7                                                        | LC50          | 27 mg/l      | 96 h          | Salmo gairdneri (new name:<br>Oncorhynchus mykiss) | EPA OTS 797.1400 (Fish<br>Acute Toxicity Test)              |
| Acrylic acid<br>79-10-7                                                        | NOEC          | >= 10,1 mg/l | 45 d          | Oryzias latipes                                    | OECD Guideline 210 (fish<br>early life stage toxicity test) |
| Hydroxypropyl methacrylate<br>27813-02-1                                       | LC50          | 493 mg/l     | 48 h          | Leuciscus idus melanotus                           | DIN 38412-15                                                |
| Cumene hydroperoxide<br>80-15-9                                                | LC50          | 3,9 mg/l     | 96 h          | Oncorhynchus mykiss                                | OECD Guideline 203 (Fish,<br>Acute Toxicity Test)           |
| maleic acid<br>110-16-7                                                        | LC50          | > 245 mg/l   | 48 h          | Leuciscus idus                                     | DIN 38412-15                                                |
| methacrylic acid<br>79-41-4                                                    | LC50          | 85 mg/l      | 96 h          | Salmo gairdneri (new name:<br>Oncorhynchus mykiss) | EPA OTS 797.1400 (Fish<br>Acute Toxicity Test)              |
| methacrylic acid<br>79-41-4                                                    | NOEC          | 10 mg/l      | 35 d          | Danio rerio                                        | OECD Guideline 210 (fish<br>early life stage toxicity test) |
| 2,2'-Ethyleneoxydiethyl<br>dimethacrylate<br>109-16-0                          | LC50          | 16,4 mg/l    | 96 h          | Danio rerio                                        | OECD Guideline 203 (Fish,<br>Acute Toxicity Test)           |
| 2-Propenoic acid, 2-methyl-,<br>2-(2-hydroxyethoxy)ethyl<br>ester<br>2351-43-1 | LC50          | > 100 mg/l   | 96 h          | Oryzias latipes                                    | OECD Guideline 203 (Fish,<br>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<br>CAS-No.                        | Value<br>type | Value      | Exposure time | Species       | Method                                                                                    |
|--------------------------------------------------------|---------------|------------|---------------|---------------|-------------------------------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9 | EC50          | 14,43 mg/l | 48 h          | Daphnia magna | OECD Guideline 202<br>(Daphnia sp. Acute<br>Immobilisation Test)                          |
| 2-Hydroxyethyl methacrylate<br>868-77-9                | EC50          | 380 mg/l   | 48 h          | Daphnia magna | OECD Guideline 202<br>(Daphnia sp. Acute<br>Immobilisation Test)                          |
| Acrylic acid<br>79-10-7                                | EC50          | 95 mg/l    | 48 h          | Daphnia magna | EPA OTS 797.1300<br>(Aquatic Invertebrate Acute<br>Toxicity Test, Freshwater<br>Daphnids) |
| Hydroxypropyl methacrylate<br>27813-02-1               | EC50          | > 143 mg/l | 48 h          | Daphnia magna | OECD Guideline 202<br>(Daphnia sp. Acute<br>Immobilisation Test)                          |
| Cumene hydroperoxide<br>80-15-9                        | EC50          | 18,84 mg/l | 48 h          | Daphnia magna | OECD Guideline 202<br>(Daphnia sp. Acute<br>Immobilisation Test)                          |
| maleic acid<br>110-16-7                                | EC50          | 42,81 mg/l | 48 h          | Daphnia magna | OECD Guideline 202<br>(Daphnia sp. Acute<br>Immobilisation Test)                          |

|                                                                          |      |            |      |               |                                                                                  |
|--------------------------------------------------------------------------|------|------------|------|---------------|----------------------------------------------------------------------------------|
| Acetic acid, 2-phenylhydrazide<br>114-83-0                               | EC50 | 1,1 mg/l   | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)                       |
| methacrylic acid<br>79-41-4                                              | EC50 | > 130 mg/l | 48 h | Daphnia magna | EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids) |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester<br>2351-43-1 | EC50 | 380 mg/l   | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)                       |

**Chronic 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<br>CAS-No.                                          | Value<br>type | Value     | Exposure time | Species       | Method                                           |
|--------------------------------------------------------------------------|---------------|-----------|---------------|---------------|--------------------------------------------------|
| 2-Hydroxyethyl methacrylate<br>868-77-9                                  | NOEC          | 24,1 mg/l | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)      |
| Acrylic acid<br>79-10-7                                                  | NOEC          | 19 mg/l   | 21 d          | Daphnia magna | EPA OTS 797.1330 (Daphnid Chronic Toxicity Test) |
| Hydroxypropyl methacrylate<br>27813-02-1                                 | NOEC          | 45,2 mg/l | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)      |
| maleic acid<br>110-16-7                                                  | NOEC          | 10 mg/l   | 21 d          | Daphnia magna | other guideline:                                 |
| methacrylic acid<br>79-41-4                                              | NOEC          | 53 mg/l   | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)      |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0                     | NOEC          | 32 mg/l   | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)      |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester<br>2351-43-1 | NOEC          | 24,1 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<br>CAS-No.                                                | Value<br>type | Value       | Exposure time | Species                                                                     | Method                                               |
|--------------------------------------------------------------------------------|---------------|-------------|---------------|-----------------------------------------------------------------------------|------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9                         | EC10          | 0,43 mg/l   | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| 2-Hydroxyethyl methacrylate<br>868-77-9                                        | EC50          | 345 mg/l    | 72 h          | Selenastrum capricornutum<br>(new name: Pseudokirchneriella<br>subcapitata) | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| 2-Hydroxyethyl methacrylate<br>868-77-9                                        | NOEC          | 160 mg/l    | 72 h          | Selenastrum capricornutum<br>(new name: Pseudokirchneriella<br>subcapitata) | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| Acrylic acid<br>79-10-7                                                        | EC10          | 0,03 mg/l   | 72 h          | Scenedesmus subspicatus (new<br>name: Desmodesmus<br>subspicatus)           | EU Method C.3 (Algal<br>Inhibition test)             |
| Acrylic acid<br>79-10-7                                                        | EC50          | 0,13 mg/l   | 72 h          | Scenedesmus subspicatus (new<br>name: Desmodesmus<br>subspicatus)           | EU Method C.3 (Algal<br>Inhibition test)             |
| Hydroxypropyl methacrylate<br>27813-02-1                                       | EC50          | > 97,2 mg/l | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| Hydroxypropyl methacrylate<br>27813-02-1                                       | NOEC          | > 97,2 mg/l | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| Cumene hydroperoxide<br>80-15-9                                                | EC50          | 3,1 mg/l    | 72 h          | Desmodesmus subspicatus<br>(reported as Scenedesmus<br>subspicatus)         | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| Cumene hydroperoxide<br>80-15-9                                                | NOEC          | 1 mg/l      | 72 h          | Desmodesmus subspicatus<br>(reported as Scenedesmus<br>subspicatus)         | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| maleic acid<br>110-16-7                                                        | EC50          | 74,35 mg/l  | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| maleic acid<br>110-16-7                                                        | EC10          | 11,8 mg/l   | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0                                 | EC50          | 0,258 mg/l  | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| Acetic acid, 2-<br>phenylhydrazide<br>114-83-0                                 | NOEC          | 0,012 mg/l  | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| methacrylic acid<br>79-41-4                                                    | NOEC          | 8,2 mg/l    | 72 h          | Selenastrum capricornutum<br>(new name: Pseudokirchneriella<br>subcapitata) | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| methacrylic acid<br>79-41-4                                                    | EC50          | 45 mg/l     | 72 h          | Selenastrum capricornutum<br>(new name: Pseudokirchneriella<br>subcapitata) | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0                        | EC50          | > 100 mg/l  | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| 2,2'-Ethylenedioxydiethyl<br>dimethacrylate<br>109-16-0                        | NOEC          | 18,6 mg/l   | 72 h          | Pseudokirchneriella subcapitata                                             | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| 2-Propenoic acid, 2-methyl-,<br>2-(2-hydroxyethoxy)ethyl<br>ester<br>2351-43-1 | EC50          | 836 mg/l    | 72 h          | Selenastrum capricornutum<br>(new name: Pseudokirchneriella<br>subcapitata) | OECD Guideline 201 (Alga,<br>Growth Inhibition Test) |
| 2-Propenoic acid, 2-methyl-,<br>2-(2-hydroxyethoxy)ethyl<br>ester<br>2351-43-1 | NOEC          | 400 mg/l    | 72 h          | Selenastrum capricornutum<br>(new name: Pseudokirchneriella<br>subcapitata) | OECD Guideline 201 (Alga,<br>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<br>CAS-No.         | Value<br>type | Value        | Exposure time | Species                    | Method             |
|-----------------------------------------|---------------|--------------|---------------|----------------------------|--------------------|
| 2-Hydroxyethyl methacrylate<br>868-77-9 | EC0           | > 3.000 mg/l | 16 h          | Pseudomonas fluorescens    | other guideline:   |
| Acrylic acid                            | EC20          | 900 mg/l     | 30 min        | activated sludge, domestic | ISO 8192 (Test for |

|                                       |      |            |        |                    |                                                          |
|---------------------------------------|------|------------|--------|--------------------|----------------------------------------------------------|
| 79-10-7                               |      |            |        |                    | 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

### Biodegradability (Screening Tests):

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                                                                      |
|-----------------------------------------------------------------------|----------------------------|-----------|---------------|---------------|-----------------------------------------------------------------------------|
| 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) |
| 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)           |
| Acetic acid, 2-phenylhydrazide 114-83-0                               | not readily biodegradable. | aerobic   | 39 %          | 28 d          | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle 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))       |

No substance data available.

### (Bio)degradability (Simulation Tests):

No data available.

**12.3. Bioaccumulative potential****Partition Coefficient (octanol/water)**

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

| Hazardous substances<br>CAS-No.                                          | LogPow | Temperature | Method                                                                             |
|--------------------------------------------------------------------------|--------|-------------|------------------------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl methacrylate<br>7779-31-9                      | 5,25   | 20 °C       | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)        |
| 2-Hydroxyethyl methacrylate<br>868-77-9                                  | 0,42   | 25 °C       | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Acrylic acid<br>79-10-7                                                  | 0,46   | 25 °C       | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Hydroxypropyl methacrylate<br>27813-02-1                                 | 0,97   | 20 °C       | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Cumene hydroperoxide<br>80-15-9                                          | 1,6    | 25 °C       | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)        |
| maleic acid<br>110-16-7                                                  | -1,3   | 20 °C       | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Acetic acid, 2-phenylhydrazide<br>114-83-0                               | 0,74   |             | QSAR (Quantitative Structure Activity Relationship)                                |
| methacrylic acid<br>79-41-4                                              | 0,93   | 22 °C       | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate<br>109-16-0                     | 2,3    |             | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)        |
| 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester<br>2351-43-1 | 0,03   | 25 °C       | QSAR (Quantitative Structure Activity Relationship)                                |

**Bioconcentration factor (BCF)**

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

| Hazardous substances<br>CAS-No.         | Bioconcentration factor (BCF) | Exposure time | Temperature | Species     | Method                                                        |
|-----------------------------------------|-------------------------------|---------------|-------------|-------------|---------------------------------------------------------------|
| 2-Hydroxyethyl methacrylate<br>868-77-9 | 3,16                          |               |             |             | QSAR (Quantitative Structure Activity Relationship)           |
| Acrylic acid<br>79-10-7                 | 3,16                          |               |             |             | QSAR (Quantitative Structure Activity Relationship)           |
| Cumene hydroperoxide<br>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<br>CAS-No.                        | LogKoc | pH | Method                                                                                          |
|--------------------------------------------------------|--------|----|-------------------------------------------------------------------------------------------------|
| 3,3,5 Trimethylcyclohexyl<br>methacrylate<br>7779-31-9 | 3,19   |    | QSAR (Quantitative Structure Activity Relationship)                                             |
| 2-Hydroxyethyl methacrylate<br>868-77-9                | 0,164  |    | QSAR (Quantitative Structure Activity Relationship)                                             |
| Hydroxypropyl methacrylate<br>27813-02-1               | 0,985  |    | QSAR (Quantitative Structure Activity Relationship)                                             |
| Cumene hydroperoxide<br>80-15-9                        | 1,6    |    | OECD Guideline 121 (OECD 121: Estimation of the Koc on Soil and on<br>Sewage Sludge using HPLC) |

#### 12.5. Results of PBT / vPvB / PMT / vPvM assessment

##### PBT/vPvB

This mixture does not contain any substances that are assessed to be a PBT or vPvB.  
Based on available data, the classification criteria are not met.

##### PMT/vPvM

This mixture does not contain any substances that are assessed to be a PMT or vPvM.  
Based on available data, the classification criteria are not met.

#### 12.6. Endocrine disrupting properties

No substance data available.

No data available.

#### 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 2024/590): | Not applicable |
| Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):    | Not applicable |
| Persistent organic pollutants (Regulation (EU) 2019/1021):     | Not applicable |

|                             |                |
|-----------------------------|----------------|
| VOC content<br>(2010/75/EC) | < 3 %          |
| Seveso III (2012/18/EU):    | Not applicable |

### 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.  
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.  
H410 Very toxic to aquatic life with long lasting effects.  
H411 Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADG(-Code): Australian Dangerous Goods (Code)  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road  
ASTM: American Society for Testing and Materials  
ATE: acute toxicity estimate  
AS: Australian Standard  
AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water  
CAS: Chemical Abstract Service  
CLP: Regulation (EC) No 1272/2008  
CMR: cancerogenic, mutagenic or reprotoxic  
DIN: German Institute for Standardization  
ECx: Effective concentration (x% effective level)  
ECHA: European Chemicals Agency  
EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS  
ECTLV: European community threshold limit value  
ED: Substance identified as having endocrine disrupting properties  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
EN : European Standard  
ENCS: Japanese chemical inventory  
EPA: US Environmental Protection Agency  
EU: European Union  
EU EXPLD1: Substance listed in Annex I, Reg (EC) No. 2019/1148  
EU EXPLD2: Substance listed in Annex II, Reg (EC) No. 2019/1148  
EWC: European Waste Catalogue  
GHS: Globally Harmonised System for Classification and Labelling of Chemicals  
GLP: Good Laboratory Practice  
HSNO: Hazardous Substances and New Organisms  
IARC: International Agency for Research of Cancer  
IATA: International Air Transport Association  
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IC50: half maximal inhibitory concentration  
ICAO: International Civil Aviation Organization  
IMDG-Code: International Maritime Code for Dangerous Goods  
IMO: International Maritime Organization  
ISO: International Standardization Organisation  
LC50: Median lethal concentration  
LD50: Median lethal dose  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
n.o.s.: not otherwise specified

NO(A)EC: No (adverse) effect concentration  
NO(A)EL: No (adverse) effect level  
NZS: New Zealand Standard  
OECD: Organisation for Economic Co-operation and Development  
OEL: Occupational Exposure Limit  
OPPT: US EPA Office of Pollution Prevention and Toxics  
OPPTS: US EPA Office of Prevention, Pesticides and Toxic Substances  
PBT: Persistent, bioaccumulative, toxic  
PMT: Persistent, mobile and toxic  
(Q)SAR: (Quantitative) structure–activity relationship  
REACH: Regulation (EC) No. 1907/2006  
RID: Regulations concerning the International Transport of Dangerous Goods by Rail  
SADT: Self Accelerating Decomposition Temperature  
SDS: Safety Data Sheet  
STOT: Specific Target Organ Toxicity  
STOT SE: Specific Target Organ Toxicity - single exposure  
STOT RE: Specific Target Organ Toxicity - repeated exposure  
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons  
SVHC: Substance of very high concern (REACH Candidate List)  
TRGS: German Technical Rules for hazardous substances  
UN: United Nations  
VOC: Volatile Organic Compound  
814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds  
vPvB: Very persistent, very bioaccumulative  
vPvM: Very persistent and very mobile  
VwVwS: Administrative Regulation on Substances Hazardous to Waters  
WGK: Water hazard class

**Further information:**

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