**Manufacturer:**
Covestro

**Product Name:**
Covestro Cablelite® 950-706 Optical Fiber Coating (Matrix Coating), UV Cure (10 kg).

**Manufacturer Part Number:**
COV-950-706-10KG

Click here for more details on the Covestro Cablelite® 950-706 Optical Fiber Coating (Matrix Coating), UV Cure (10 kg).

Safety Data Sheet according to Regulation (EU) No. 1907/2006 as amended

# Cablelite 950-706

Version 2.0 Revision Date 31.07.2025 Print Date 01.08.2025

This document is formatted for A4 paper size

# Cablelite 950-706

Version 2.0 Revision Date 31.07.2025 Print Date 01.08.2025

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

### 1.1 Product identifier

**CABLELITE 950-706**

**Material number:** 50025028

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

**Use:**
UV-curable coatings, inks and matrix materials.
For details of the identified uses according to REACH-Regulation (EU) No. 1907/2006 refer to the annex of this safety data sheet.

### 1.3 Details of the supplier of the safety data sheet

Covestro Deutschland AG
COV Global Product Safety
51365 Leverkusen

Tel.: +49 214 6009 8134
Email: ProductSafetyEMLA@covestro.com

### 1.4 Emergency telephone number

+1-703-527-3887 (Chemtrec)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Skin irritation, Category 2 (H315)
Eye irritation, Category 2 (H319)
Sensitization of the skin, Category 1 (H317)
Reproductive toxicity, Category 1B (H360Fd)
Specific target organ toxicity (single exposure), Category 3 (H335 (Respiratory system))
Chronically hazardous to the aquatic environment, Category 2 (H411)

### 2.2 Label elements

Danger

**Hazardous components which must be listed on the label**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
2-phenoxyethyl acrylate
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
hexamethylene diacrylate
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

**Hazard statements:**
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H360Fd May damage fertility. Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements:**
P201 Obtain special instructions before use.
P261 Avoid breathing mist or vapours.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

**Type of product:** Mixture

### 3.2 Mixtures

optical fiber coatings

**Hazardous components**

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Concentration [wt.-%]: >= 25 - < 50
EC-No.: 500-130-2
REACH Registration Number: 01-2119490020-53-0014, 01-2119490020-53-0007
CAS-No.: 55818-57-0
Classification (1272/2008/CE): Skin Sens. 1 H317 Aquatic Chronic 2 H411

2-phenoxyethyl acrylate
Concentration [wt.-%]: >= 5 - < 10
EC-No.: 256-360-6
REACH Registration Number: 01-2119980532-35-0014, 01-2119980532-35-0013
Classification (1272/2008/CE): Skin Sens. 1A H317 Repr. 2 H361d Aquatic Chronic 2 H411

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Concentration [wt.-%]: >= 5 - < 10
Index-No.: 607-133-00-9
EC-No.: 227-561-6
REACH Registration Number: 01-2119957862-25
CAS-No.: 5888-33-5
Classification (1272/2008/CE): Skin Sens. 1A H317 Aquatic Acute 1 H400 Aquatic Chronic 1 H410
Specific threshold concentration (GHS):
STOT SE 3 H335 >= 10 %
M-factor (acute aquat. tox.): 1
M-factor (chron. aquat. tox.): 1

hexamethylene diacrylate
Concentration [wt.-%]: >= 5 - < 10
Index-No.: 607-109-00-8
EC-No.: 235-921-9
REACH Registration Number: 01-2119484737-22-0025, 01-2119484737-22-0008
CAS-No.: 13048-33-4
Classification (1272/2008/CE): Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 Aquatic Acute 1 H400 Aquatic Chronic 2 H411
M-factor (acute aquat. tox.): 1

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Concentration [wt.-%]: >= 5 - < 10

Index-No.: 607-249-00-X
EC-No.: 256-032-2
REACH Registration Number: 01-2119484613-34-0018, 01-2119484613-34-0008
CAS-No.: 42978-66-5
Classification (1272/2008/CE): Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 STOT SE 3 H335 (Respiratory system) Aquatic Chronic 2 H411
Specific threshold concentration (GHS):
STOT SE 3 H335 >= 10 %

Hydroxycyclohexyl phenyl ketone
Concentration [wt.-%]: >= 1 - < 2,5
EC-No.: 213-426-9
CAS-No.: 947-19-3
Classification (1272/2008/CE): Aquatic Chronic 3 H412

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Concentration [wt.-%]: >= 0,3 - < 1
EC-No.: 278-355-8
CAS-No.: 75980-60-8
Classification (1272/2008/CE): Skin Sens. 1B H317 Repr. 1B H360Fd Aquatic Chronic 2 H411

**Candidate List of Substances of Very High Concern for Authorisation**
This product contains substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 59).

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
CAS-No.: 75980-60-8

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General advice:** Take off all contaminated clothing immediately.

For effective first-aid, special training / education is needed.

**If inhaled:** Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required. If unconscious, place in recovery position and seek medical advice. Oxygen or artificial respiration if needed. If breathing is irregular or stopped, administer artificial respiration. Keep respiratory tract clear. Consult a physician if necessary.

Inhalation may provoke the following symptoms: respiratory tract irritation coughing

In the case of hazardous fumes, wear self contained breathing apparatus.

**In case of skin contact:** In case of skin contact wash affected areas thoroughly with soap and plenty of water. Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Thoroughly clean shoes before reuse. Consult a doctor in the event of a skin reaction.

Most important symptoms Skin irritation Redness

**In case of eye contact:** Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist. Remove contact lenses.

Eye contact may provoke the following symptoms irritant effects eye redness

**If swallowed:** Do not induce vomiting without medical advice. Rinse mouth. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person.

If victim is conscious: Give small amounts of water to drink.

If symptoms persist, call a physician or Poison Control Centre immediately.

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

**Notes to physician:** Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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

**Therapeutic measures:** No information available.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### 5.2 Special hazards arising from the substance or mixture

Formation of carbon monoxide, carbon dioxide and other toxic gases in the event of fire or during thermal decomposition. Fire will produce dense black smoke containing hazardous combustion products (see section 10). In case of fire, may produce hazardous decomposition products such as: Acrylate monomers Aldehydes Organic acids

In the event of fire and/or explosion do not breathe fumes. Cool endangered vessels and containers with sprayed water. Heating raises pressure with consequent risk of bursting and explosion.

### 5.3 Advice for fire-fighters

Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear. Wear a positive-pressure supplied-air respirator with full facepiece. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters. Immediately evacuate personnel to safe areas.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Avoid breathing mist or vapours. Put on protective equipment (see section 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away. In case of insufficient ventilation, wear suitable respiratory equipment.

### 6.2 Environment related measures

Do not allow to escape into waterways, wastewater or soil. If the product contaminates rivers and lakes or drains inform respective authorities. Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains. Collect spillage. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### 6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Dispose of wastes in an approved waste disposal facility. Do not discharge large quantities of concentrated spills or residues into

surface water or sanitary sewer system.

### 6.4 Reference to other sections

For personal protection see section 8. For further disposal measures see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

General conditions of use are further specified in the annex according to REACH-Regulation (EU) No. 1907/2006.

For personal protection see section 8. Avoid contact with skin, eyes and clothing. Do not breathe mist or vapours. Do not ingest. Ensure adequate ventilation and, if necessary, exhaust ventilation when handling or transferring the product. In case of insufficient ventilation, wear suitable respiratory equipment. The precautions required in the handling of acrylic acid esters must be taken. Do not re-use empty containers.

Smoking, eating and drinking should be prohibited in the application area. Wash skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.

Persons who suffer from skin complaints or other hypersensitivity reactions of skin should not work with the product.

The personal protective measures described in section 8 must be observed. Avoid contact with skin and eyes absolutely.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Change contaminated or soaked clothing immediately.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container dry and tightly closed in a cool and well ventilated place. Store in original container. Protect against heat and direct sunlight. Store locked up. When not in use, keep containers tightly closed. Keep in properly labelled containers. Use appropriate container to avoid environmental contamination. Polymerisation is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers. Inhibitor only effective in the presence of oxygen.

Storage class (TRGS 510) : 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

Recommended storage temperature: 15 - 30 °C

### 7.3 Specific end use(s)

UV-curable coatings, inks and matrix materials.

## SECTION 8: Exposure controls/personal protection

Risk management measures are further specified in the annex according to REACH-Regulation (EU) No. 1907/2006.

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

**Derived No Effect Level (DNEL)**

**Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate**

| Value type | Route of exposure | Health Effects | Value | Remarks |
|---|---|---|---|---|
| Workers | Inhalation | Long-term systemic effects | 1,17 mg/m3 | Repeated dose toxicity oral |

| | | | | |
|---|---|---|---|---|
| Workers | Inhalation | Acute systemic effects | | No hazard identified Most sensitive endpoint: Acute toxicity (By inhalation) |
| Workers | Inhalation | Long-term local effects | | No hazard identified Most sensitive endpoint: Repeated dose toxicity |
| Workers | Inhalation | Acute local effects | | No hazard identified Most sensitive endpoint: Acute toxicity |
| Workers | Dermal | Long-term systemic effects | 33 mg/kg bw/day | Most sensitive endpoint: Repeated dose toxicity oral |
| Workers | Dermal | Acute systemic effects | | No hazard identified |
| Workers | Dermal | Long-term local effects | | Medium hazard (no threshold derived) Most sensitive endpoint: Sensitisation (skin) |
| Workers | Dermal | Acute local effects | | No hazard identified Most sensitive endpoint: skin irritation/corrosion |
| Workers | Eye contact | Local effects | | No hazard identified |
| Consumers | Inhalation | Long-term systemic effects | | No hazard identified |
| Consumers | Inhalation | Acute systemic effects | | No hazard identified |
| Consumers | Inhalation | Long-term local effects | | No hazard identified |
| Consumers | Inhalation | Acute local effects | | No hazard identified |
| Consumers | Dermal | Long-term systemic effects | | No hazard identified |
| Consumers | Dermal | Acute systemic effects | | No hazard identified |
| Consumers | Dermal | Long-term local effects | | No hazard identified |
| Consumers | Dermal | Acute local effects | | No hazard identified |
| Consumers | Oral | Long-term systemic effects | | No hazard identified |
| Consumers | Oral | Acute systemic effects | | No hazard identified |
| Consumers | Eye contact | Local effects | | No hazard identified |

**2-phenoxyethyl acrylate**

| Value type | Route of exposure | Health Effects | Value | Remarks |
|---|---|---|---|---|
| Workers | Inhalation | Long-term systemic effects | 12 mg/m3 | Most sensitive endpoint: Repeated dose toxicity |
| Workers | Inhalation | Acute systemic effects | | Hazard unknown (no further information necessary) |
| Workers | Inhalation | Long-term local effects | 77 mg/m3 | Most sensitive endpoint: Repeated dose toxicity |
| Workers | Inhalation | Acute local effects | | Hazard unknown (no further information necessary) |
| Workers | Dermal | Long-term systemic effects | 3,5 mg/kg bw/day | Most sensitive endpoint: Repeated dose toxicity |
| Workers | Dermal | Acute systemic effects | | No hazard identified |

| | | | | |
|---|---|---|---|---|
| Workers | Dermal | Long-term local effects | | No hazard identified |
| Workers | Dermal | Acute local effects | | High hazard (no threshold derived) |
| Workers | Eye contact | Local effects | | No hazard identified |
| Consumers | Inhalation | Long-term systemic effects | | No hazard identified |
| Consumers | Inhalation | Acute systemic effects | | No hazard identified |
| Consumers | Inhalation | Long-term local effects | | No hazard identified |
| Consumers | Inhalation | Acute local effects | | No hazard identified |
| Consumers | Dermal | Long-term systemic effects | | No hazard identified |
| Consumers | Dermal | Acute systemic effects | | No hazard identified |
| Consumers | Dermal | Long-term local effects | | No hazard identified |
| Consumers | Dermal | Acute local effects | | No hazard identified |
| Consumers | Oral | Long-term systemic effects | | No hazard identified |
| Consumers | Oral | Acute systemic effects | | No hazard identified |
| Consumers | Eye contact | Local effects | | No hazard identified |

**exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate**

| Value type | Route of exposure | Health Effects | Value | Remarks |
|---|---|---|---|---|
| Workers | Dermal | Long-term systemic effects | 1,39 mg/kg bw/day | |
| Consumers | Dermal | Long-term systemic effects | 0,83 mg/kg bw/day | |
| Consumers | Oral | Long-term systemic effects | 0,83 mg/kg bw/day | |

**hexamethylene diacrylate**

| Value type | Route of exposure | Health Effects | Value | Remarks |
|---|---|---|---|---|
| Workers | Inhalation | Long-term systemic effects | 24,5 mg/m3 | |
| Workers | Inhalation | Acute systemic effects | | No hazard identified |
| Workers | Inhalation | Long-term local effects | | Low hazard (no threshold derived) |
| Workers | Inhalation | Acute local effects | | Low hazard (no threshold derived) |
| Workers | Dermal | Long-term systemic effects | 2,77 mg/kg bw/day | Repeated dose toxicity dermal |
| Workers | Dermal | Acute systemic effects | | No hazard identified (no threshold derived) |
| Workers | Dermal | Long-term local effects | | Medium hazard (no threshold derived) |
| Workers | Dermal | Acute local effects | | Medium hazard (no threshold derived) |

| | | | | |
|---|---|---|---|---|
| Workers | Eye contact | Local effects | | Low hazard (no threshold derived) |
| Consumers | Inhalation | Long-term systemic effects | 7,2 mg/m3 | Repeated dose toxicity oral |
| Consumers | Inhalation | Acute systemic effects | | No hazard identified |
| Consumers | Inhalation | Long-term local effects | | Medium hazard (no threshold derived) |
| Consumers | Inhalation | Acute local effects | | Medium hazard (no threshold derived) |
| Consumers | Dermal | Long-term systemic effects | 1,66 mg/kg bw/day | Repeated dose toxicity dermal |
| Consumers | Dermal | Acute systemic effects | | No hazard identified |
| Consumers | Dermal | Long-term local effects | | Medium hazard (no threshold derived) |
| Consumers | Dermal | Acute local effects | | Medium hazard (no threshold derived) |
| Consumers | Oral | Long-term systemic effects | 2,1 mg/kg bw/day | Repeated dose toxicity oral |
| Consumers | Oral | Acute systemic effects | | No hazard identified |
| Consumers | Eye contact | Local effects | | Low hazard (no threshold derived) |

**Hydroxycyclohexyl phenyl ketone**

| Value type | Route of exposure | Health Effects | Value | Remarks |
|---|---|---|---|---|
| Workers | Inhalation | Long-term systemic effects | 6,8 mg/m3 | |
| Workers | Inhalation | Acute systemic effects | | No hazard identified |
| Workers | Inhalation | Long-term local effects | | No hazard identified |
| Workers | Inhalation | Acute local effects | | No hazard identified |
| Workers | Dermal | Long-term systemic effects | 1,94 mg/kg bw/day | |
| Workers | Dermal | Acute systemic effects | | No hazard identified |
| Workers | Dermal | Long-term local effects | | No hazard identified |
| Workers | Dermal | Acute local effects | | No hazard identified |
| Workers | Eye contact | Local effects | | No hazard identified |
| Consumers | Inhalation | Long-term systemic effects | 1,21 mg/m3 | |
| Consumers | Inhalation | Acute systemic effects | | No hazard identified |
| Consumers | Inhalation | Long-term local effects | | No hazard identified |
| Consumers | Inhalation | Acute local effects | | No hazard identified |
| Consumers | Dermal | Long-term systemic effects | 0,694 mg/kg bw/day | |
| Consumers | Dermal | Acute systemic effects | | No hazard identified |

| | | | | |
|---|---|---|---|---|
| Consumers | Dermal | Long-term local effects | | No hazard identified |
| Consumers | Dermal | Acute local effects | | No hazard identified |
| Consumers | Oral | Long-term systemic effects | 0,694 mg/kg bw/day | |
| Consumers | Oral | Acute systemic effects | | No hazard identified |
| Consumers | Eye contact | Local effects | | No hazard identified |

**diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide**

| Value type | Route of exposure | Health Effects | Value | Remarks |
|---|---|---|---|---|
| Workers | Inhalation | Long-term systemic effects | 0,822 mg/m3 | Most sensitive endpoint: Repeated dose toxicity oral |
| Workers | Inhalation | Acute systemic effects | | No hazard identified |
| Workers | Inhalation | Long-term local effects | | No hazard identified |
| Workers | Inhalation | Acute local effects | | No hazard identified |
| Workers | Dermal | Long-term systemic effects | 0,233 mg/kg bw/day | Most sensitive endpoint: Repeated dose toxicity oral |
| Workers | Dermal | Acute systemic effects | | No hazard identified |
| Workers | Dermal | Long-term local effects | | Medium hazard (no threshold derived) Most sensitive endpoint: Sensitisation (skin) |
| Workers | Dermal | Acute local effects | | Medium hazard (no threshold derived) Most sensitive endpoint: Sensitisation (skin) |
| Workers | Eye contact | Local effects | | No hazard identified |
| Consumers | Inhalation | Long-term systemic effects | 0,145 mg/m3 | Most sensitive endpoint: Repeated dose toxicity oral |
| Consumers | Inhalation | Acute systemic effects | | No hazard identified |
| Consumers | Inhalation | Long-term local effects | | No hazard identified |
| Consumers | Inhalation | Acute local effects | | No hazard identified |
| Consumers | Dermal | Long-term systemic effects | 0,0833 mg/kg bw/day | Most sensitive endpoint: Repeated dose toxicity oral |
| Consumers | Dermal | Acute systemic effects | | No hazard identified |
| Consumers | Dermal | Long-term local effects | | Medium hazard (no threshold derived) Most sensitive endpoint: Sensitisation (skin) |
| Consumers | Dermal | Acute local effects | | Medium hazard (no threshold derived) Most sensitive endpoint: Sensitisation (skin) |
| Consumers | Oral | Long-term systemic effects | 0,0833 mg/kg bw/day | Most sensitive endpoint: Repeated dose toxicity oral |
| Consumers | Oral | Acute systemic effects | | No hazard identified |
| Consumers | Eye contact | Local effects | | No hazard identified |

**Predicted No Effect Concentration (PNEC)**

**Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate**

| Compartment | Value | Remarks |
|---|---|---|
| Fresh water | 0,025 mg/l | |
| Fresh water sediment | 8,96 mg/kg dry weight | |
| Marine water | 0,003 mg/l | |
| Marine sediment | 0,896 mg/kg dry weight | |
| Sewage treatment plant | 10 mg/l | |
| Air | | No hazard identified |
| Soil | 1,78 mg/kg dry weight | |
| Oral | | Does not bioaccumulate. |

**2-phenoxyethyl acrylate**

| Compartment | Value | Remarks |
|---|---|---|
| Fresh water | 0,002 mg/l | |
| Fresh water sediment | 0,02 mg/kg dry weight | |
| Marine water | 0,0002 mg/l | |
| Marine sediment | 0,002 mg/kg dry weight | |
| Sewage treatment plant | 1,77 mg/l | |
| Air | | No hazard identified |
| Soil | 0,006 mg/kg dry weight | |
| Oral | | Does not bioaccumulate. |
| Intermittent use/release | 0,012 mg/l | Fresh water |

**exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate**

| Compartment | Value | Remarks |
|---|---|---|
| Fresh water | 0,00092 mg/l | |
| Fresh water sediment | 0,145 mg/kg dry weight | |
| Marine water | 0,000092 mg/l | |
| Marine sediment | 0,0145 mg/kg dry weight | |
| Sewage treatment plant | 2 mg/l | |
| Soil | 0,0285 mg/kg dry weight | |
| Intermittent use/release | 0,007 mg/l | |

**hexamethylene diacrylate**

| Compartment | Value | Remarks |
|---|---|---|
| Fresh water | 0,007 mg/l | |
| Fresh water sediment | 0,493 mg/kg dry weight | |
| Marine water | 0,001 mg/l | |
| Marine sediment | 0,049 mg/kg dry weight | |
| Sewage treatment plant | 2,7 mg/l | |
| Air | | No hazard identified |
| Soil | 0,094 mg/kg dry weight | |
| Oral | | Does not bioaccumulate. |

**Hydroxycyclohexyl phenyl ketone**

| Compartment | Value | Remarks |
|---|---|---|
| Fresh water | 0,003 mg/l | |
| Fresh water sediment | 0,0356 mg/kg dry weight | |
| Marine water | 0,0003 mg/l | |
| Marine sediment | 0,00356 mg/kg dry weight | |
| Sewage treatment plant | 10 mg/l | |
| Air | | No hazard identified |
| Soil | 0,00537 mg/kg dry weight | |
| Oral | | Does not bioaccumulate. |
| Intermittent use/release | 0,144 mg/l | Fresh water |
| Intermittent use/release | 0,0144 mg/l | Marine water |

**diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide**

| Compartment | Value | Remarks |
|---|---|---|
| Fresh water | 1,4 µg/l | |
| Fresh water sediment | 0,115 mg/kg dry weight | |
| Marine water | 0,14 µg/l | |
| Marine sediment | 0,0115 mg/kg dry weight | |
| Sewage treatment plant | | No hazard identified |
| Air | | No hazard identified |
| Soil | 0,0222 mg/kg dry weight | |
| Oral | | Does not bioaccumulate. |
| Intermittent use/release | 14 µg/l | Fresh water |

### 8.2 Exposure controls

**Appropriate engineering controls**
If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Respiratory protection**
Respirator with a gas filter

**Hand protection**
Protective gloves complying with EN 374.
Nitrile rubber: thickness >=0,12mm; Break through time: < 60 min
Contaminated and/or damaged gloves must be changed. Avoid natural rubber gloves. Do not wear PVC gloves, as PVC absorbs acrylates.

**Eye protection**
Safety glasses with side-shields
Equipment should conform to EN 166

**Skin and body protection**
Use protective clothing (chemically resistant). Protective suit
Equipment should conform to EN 1149

**Further protective measures**
Wash face, hands and any exposed skin thoroughly after handling. Use appropriate degowning techniques to remove potentially contaminated clothing. Take off contaminated clothing and wash it before reuse. Ensure that eyewash stations and safety showers are close to the workstation location.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state: | liquid at 20 °C at 1.013 hPa |
| Appearance: | liquid |
| Colour: | amber |
| Odour: | characteristic |
| Odour Threshold: | not established |
| pH: | not applicable |
| Melting point/freezing point: | not established |
| Boiling point/boiling range: | not established |
| Flash point: | > 93 °C, closed cup |
| Evaporation rate: | not established |
| Flammability (solid, gas): | not applicable |
| Burning number: | not applicable |
| Upper/lower flammability or explosive limits: | not established |
| Vapour pressure: | not established |
| Relative vapour density: | not established |
| Density: | 1,05 g/cm³ at 20 °C |
| Miscibility with water: | not established |
| Water solubility: | not established |
| Surface tension: | not established |
| Partition coefficient (n−octanol/water): | not established |
| Auto-ignition temperature: | not applicable |
| Ignition temperature: | not established |
| Decomposition temperature: | not established |
| Heat of combustion: | not established |
| Viscosity, dynamic: | 3.990 - 5.750 mPa.s at 20 °C |
| Viscosity, kinematic: | > 20,5 mm²/s at 40 °C<br>> 3800 mm²/s at 20 °C |

### 9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.

| | |
|---|---|
| Explosive properties: | not established |
| Dust explosion class: | not applicable |
| Oxidising properties: | not established |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None known.

### 10.2 Chemical stability

Stable under recommended storage conditions. The product is chemically stable.

### 10.3 Possibility of hazardous reactions

In case of heating risk of exothermic polymerisation. Strong exothermic reactions with peroxides may occur in presence of heavy metal ions.

### 10.4 Conditions to avoid

Keep away from heat and sources of ignition.
Exposure to sunlight.

### 10.5 Incompatible materials

Exothermic reaction with: Strong acids and strong bases polymerisation initiators Avoid radical-forming starting agents, peroxides and reactive metals.

### 10.6 Hazardous decomposition products

No hazardous decomposition products when stored and handled correctly.

## SECTION 11: Toxicological information

Toxicological studies on the product are not yet available.

Please find below the toxicological data available to us for the components (hazardous components).

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

**Acute toxicity, oral**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LD50 rat, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 401

2-phenoxyethyl acrylate
LD50 rat, male/female: > 5.000 mg/kg
Method: OECD Test Guideline 401

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
LD50 rat, male: 4.350 mg/kg

hexamethylene diacrylate
LD50 rat: > 5.000 mg/kg
Method: OECD Test Guideline 401

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
LD50 rat, female: > 2.000 mg/kg
Method: OECD Test Guideline 423

Hydroxycyclohexyl phenyl ketone
LD50 rat, male/female: > 2.500 mg/kg
Method: OECD Test Guideline 401

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
LD50 rat, male/female: > 5.000 mg/kg
Method: OECD Test Guideline 401

**Acute toxicity, dermal**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LD50 rat, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 402

2-phenoxyethyl acrylate
LD50 rat, male/female: > 2.000 mg/kg
Method: Regulation (EC) No. 440/2008, Annex, B.3

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
LD50 rabbit, male: > 3.000 mg/kg

hexamethylene diacrylate
LD50 rabbit: 3.650 mg/kg
Method: OECD Test Guideline 402

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
LD50 rabbit, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 402

Hydroxycyclohexyl phenyl ketone
LD50 rat: > 5.000 mg/kg
Method: OECD Test Guideline 402

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
LD50 rat, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 402

**Acute toxicity, inhalation**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
No data available.

2-phenoxyethyl acrylate
Assessment: Study scientifically not justified.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
No data available, supplier information

hexamethylene diacrylate
LC0 rat, male/female: > 0,41 mg/l, 7 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Inhalation risk test (IRT): No mortality after 8 h exposure in studies with rats.

Hydroxycyclohexyl phenyl ketone
LC50 rat, male/female: > 1 mg/l
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Method: OECD Test Guideline 403

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**Primary skin irritation**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

2-phenoxyethyl acrylate
Species: rabbit
Result: slight irritant
Classification: No skin irritation

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Species: rabbit
Result: non-irritant
Classification: No skin irritation

hexamethylene diacrylate
Species: rabbit
Result: irritating
Classification: Causes skin irritation.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Species: rabbit
Result: irritating
Classification: Causes skin irritation.

Hydroxycyclohexyl phenyl ketone
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Species: rabbit
Result: slight irritant
Classification: No skin irritation

**Primary mucosae irritation**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

2-phenoxyethyl acrylate
Species: rabbit
Result: slight irritant
Classification: No eye irritation

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Species: rabbit
Result: slight irritant
Classification: No eye irritation

hexamethylene diacrylate
Species: rabbit
Result: irritating
Classification: Causes serious eye irritation.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Species: rabbit
Result: irritating
Classification: Causes serious eye irritation.

Hydroxycyclohexyl phenyl ketone
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Species: rabbit
Result: slight irritant
Classification: No eye irritation

**Sensitisation**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429

Respiratory sensitization
No data available.

2-phenoxyethyl acrylate
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1A)
Method: OECD Test Guideline 406

Respiratory sensitization
No data available.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1A)
Method: OECD Test Guideline 429

Respiratory sensitization
No data available.

hexamethylene diacrylate
Skin sensitisation:
Result: positive
Classification: May cause sensitization by skin contact.

Respiratory sensitization
No data available.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429

Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Method: OECD Test Guideline 429

Respiratory sensitization
no data available

Hydroxycyclohexyl phenyl ketone
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Respiratory sensitization
No data available.

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1B)
Method: OECD Test Guideline 429

Respiratory sensitization
No data available.

**Subacute, subchronic and prolonged toxicity**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LOAEL (Lowest observable adverse effect level): 100 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 100 - 300 - 1000 mg/kg bw/day
Exposure duration: 92 - 93 d
Frequency of treatment: daily
Method: OECD Test Guideline 408

2-phenoxyethyl acrylate
NOAEL: 300 mg/kg

Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 800
Method: OECD Test Guideline 422

NOAEL: 350 mg/kg
Application Route: Oral
Species: rat, male/female
Method: OECD Test Guideline 408

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
NOAEL: 100 mg/kg
Application Route: Oral
Species: rat, male/female
Method: OECD Test Guideline 422

hexamethylene diacrylate
NOAEL: 250 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 75 - 250 - 750 mg/kg/day
Method: OECD Test Guideline 422

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
NOAEL: 375 mg/kg bw/day
Application Route: Oral
Species: rat, male/female
Frequency of treatment: daily
Method: OECD Test Guideline 422

NOAEL: 66,7 mg/kg bw/day
Application Route: Dermal
Species: rat, male/female
Frequency of treatment: 5 days/week
Method: OECD Test Guideline 424

Hydroxycyclohexyl phenyl ketone
NOAEL: 300 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 5 - 50 - 300 mg/kg bw/day
Exposure duration: 28 d
Frequency of treatment: daily
Method: OECD Test Guideline 407

NOAEL: 300 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 1000 mg/kg bw/day
Exposure duration: 90 d
Frequency of treatment: daily
Method: OECD Test Guideline 408

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
NOAEL: 100 mg/kg bw/day
LOAEL (Lowest observable adverse effect level): 300 mg/kg bw/day
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 1000 mg/kg bw/day
Method: OECD Test Guideline 408

NOAEL: 50 mg/kg bw/day
LOAEL (Lowest observable adverse effect level): 250 mg/kg bw/day
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 50 - 250 - 750 mg/kg bw/day

**Carcinogenicity**

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
No data available.

2-phenoxyethyl acrylate
No data available.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
No data available.

hexamethylene diacrylate
No data available.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
NOAEL (Toxicity): > 25 mg/kg bw/day
Species: Mouse, male
Application Route: Dermal
Frequency of treatment: 2 times/week

Hydroxycyclohexyl phenyl ketone
No data available.

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
no data available

**Reproductive toxicity/Fertility**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
NOAEL (parents, generelly toxicity): >= 200 mg/kg bw/day
NOAEL (parents, fertility): >= 200 mg/kg bw/day
NOAEL (offspring): >= 200 mg/kg bw/day
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 40 - 100 - 200 mg/kg bw/day
Method: OECD Test Guideline 443

NOAEL (parents, generelly toxicity): > 900 mg/kg
NOAEL (parents, fertility): > 900 mg/kg
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, male/female
Application Route: Oral
Method: OECD Test Guideline 422

2-phenoxyethyl acrylate
NOAEL (parents, generelly toxicity): 100 mg/kg bw/day
NOAEL (parents, fertility): 300 mg/kg bw/day
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 800 mg/kg bw/day
Method: OECD Test Guideline 422

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
NOAEL - Parents: 100 mg/kg
NOAEL – F1: 100 mg/kg
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 25 - 100 - 500 mg/kg body weight/day
Frequency of treatment: daily

hexamethylene diacrylate
NOAEL (parents, generelly toxicity): 250 mg/kg
NOAEL (parents, fertility): 750 mg/kg
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, male/female

Application Route: Oral
Method: OECD Test Guideline 422

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
NOAEL (parents, generelly toxicity): 375 mg/kg bw/day
NOAEL (offspring): 375 mg/kg bw/day
Species: rat, male/female
Application Route: Oral
Frequency of treatment: daily
Method: OECD Test Guideline 422

NOAEL (parents, generelly toxicity): 100 mg/kg bw/day
NOAEL (parents, fertility): 100 mg/kg bw/day
NOAEL (offspring): 100 mg/kg bw/day
Species: rat, male/female
Application Route: Oral
Frequency of treatment: daily
Method: OECD Test Guideline 443

Hydroxycyclohexyl phenyl ketone
NOAEL (parents, generelly toxicity): 900 mg/kg bw/day
NOAEL (parents, fertility): 900 mg/kg bw/day
NOAEL (offspring): 900 mg/kg bw/day
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 900 mg/kg bw/day
Method: OECD Test Guideline 443

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
NOAEL (parents, generelly toxicity): 200 mg/kg bw/day
NOAEL (parents, fertility): 60 mg/kg bw/day
NOAEL (offspring): 200 mg/kg bw/day
Test type: One-generation study
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 60 - 200 - 600 mg/kg bw/day
Frequency of treatment: daily
Method: OECD Test Guideline 421

**Reproductive toxicity/Developmental Toxicity/Teratogenicity**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
NOAEL (teratogenicity): 1000 mg/kg bw/day
NOAEL (maternal): > 1000 mg/kg bw/day
Species: rat, female
Application Route: Oral
Method: OECD Test Guideline 414

NOAEL (teratogenicity): 1000 mg/kg bw/day
NOAEL (maternal): 1000 mg/kg bw/day
Species: rabbit, female
Application Route: Oral
Method: OECD Test Guideline 414

2-phenoxyethyl acrylate
NOAEL (teratogenicity): 600 mg/kg bw/day
NOAEL (maternal): 600 mg/kg bw/day
NOAEL (developmental toxicity): 600 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rat
Application Route: Oral
Dose Levels: 0 - 65- 200 - 600 mg/kg bw/day
Method: OECD Test Guideline 414

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
NOAEL (teratogenicity): 500 mg/kg
NOAEL (maternal): 100 mg/kg
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test

Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 25 - 100 - 500 mg/kg body weight/day
Method: OECD Test Guideline 422

hexamethylene diacrylate
NOAEL (teratogenicity): 750 mg/kg
NOAEL (maternal): 250 mg/kg
Species: rat, male and female
Application Route: Oral
Dose Levels: 75 - 250 - 750 mg/kg/day
Method: OECD Test Guideline 422
Did not show teratogenic effects in animal experiments.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
NOAEL (maternal): > 375 mg/kg bw/day
NOAEL (developmental toxicity): > 375 mg/kg bw/day
Test type: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Species: rat, female
Application Route: Oral
Frequency of treatment: daily
Method: OECD Test Guideline 422

NOAEL (maternal): 450 mg/kg bw/day
NOAEL (developmental toxicity): 450 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rabbit, female
Application Route: Oral
Frequency of treatment: daily
Method: OECD Test Guideline 414

NOAEL (teratogenicity): 250 mg/kg bw/day
NOAEL (maternal): 250 mg/kg bw/day
NOAEL (developmental toxicity): 250 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rat, female
Application Route: Oral
Frequency of treatment: daily
Method: OECD Test Guideline 414

Hydroxycyclohexyl phenyl ketone
NOAEL (maternal): 300 mg/kg
NOAEL (developmental toxicity): 900 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 900 mg/kg bw/day
Frequency of treatment: daily
Method: OECD Test Guideline 414

NOAEL (maternal): 500 mg/kg
NOAEL (developmental toxicity): 250 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rabbit, female
Application Route: Oral
Dose Levels: 0 - 250 - 500 - 750 mg/kg bw/day
Frequency of treatment: daily
Method: OECD Test Guideline 414

NOAEL (maternal): 900 mg/kg
NOAEL (developmental toxicity): 900 mg/kg bw/day
Test type: extended one-generation study
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 900 mg/kg bw/day
Frequency of treatment: daily
Method: OECD Test Guideline 443

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
NOAEL (teratogenicity): 150 mg/kg bw/day
NOAEL (maternal): 150 mg/kg bw/day
LOAEL (teratogenicity): 500 mg/kg bw/day
LOAEL (maternal): 500 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 50 - 150 - 500 mg/kg bw/day
Method: OECD Test Guideline 414

NOAEL (teratogenicity): >100 mg/kg bw/day
NOAEL (maternal): >100 mg/kg bw/day
LOAEL (developmental toxicity): 100 mg/kg bw/day
Test type: Pre-/postnatal development
Species: rabbit, female
Application Route: Oral
Dose Levels: 0 - 10 - 30 - 100 mg/kg bw/day
Method: OECD Test Guideline 414

**Genotoxicity in vitro**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

2-phenoxyethyl acrylate
Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Test type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster V79 cell line
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Test type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 487

hexamethylene diacrylate
Test type: Ames test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Test type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with/without
Result: positive

Hydroxycyclohexyl phenyl ketone
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster V79 cell line
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

**Genotoxicity in vivo**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Test type: In vivo micronucleus test
Species: Mouse, male
Application Route: Oral
Result: negative
Method: OECD Test Guideline 474

2-phenoxyethyl acrylate
no data available

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
No data available, supplier information

hexamethylene diacrylate
Test type: In vivo micronucleus test
Species: Mouse, male
Result: negative
Method: OECD Test Guideline 474
Studies of a comparable product.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Test type: In vivo micronucleus test
Species: Mouse, male/female
Application Route: intraperitoneal
Result: negative
Method: OECD Test Guideline 474

Test type: In vivo micronucleus test
Species: Mouse, female
Application Route: intraperitoneal
Result: negative

Hydroxycyclohexyl phenyl ketone
Test type: In vivo micronucleus test
Species: Chinese hamster, male/female
Application Route: Oral
Result: negative
Method: OECD Test Guideline 474

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**STOT evaluation – one-time exposure**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Based on available data, the classification criteria are not met.

2-phenoxyethyl acrylate
Based on available data, the classification criteria are not met.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Based on available data, the classification criteria are not met.

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

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Target Organs: Respiratory tract
May cause respiratory irritation.

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

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**STOT evaluation – repeated exposure**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Based on available data, the classification criteria are not met.

2-phenoxyethyl acrylate
Based on available data, the classification criteria are not met.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Based on available data, the classification criteria are not met.

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

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Based on available data, the classification criteria are not met.

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

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**Aspiration toxicity**

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Based on available data, the classification criteria are not met.

2-phenoxyethyl acrylate
No data available.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Based on available data, the classification criteria are not met.

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

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Based on available data, the classification criteria are not met.

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

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**CMR Assessment**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

2-phenoxyethyl acrylate
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Suspected of damaging the unborn child (Repr. 2).
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

hexamethylene diacrylate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

Hydroxycyclohexyl phenyl ketone
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Suspected of damaging the unborn child (Repr. 2).
Reproductive toxicity/Fertility: May damage fertility (Repr. 1B).

**Toxicology Assessment**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: May cause an allergic skin reaction.

2-phenoxyethyl acrylate
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: May cause an allergic skin reaction.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: May cause an allergic skin reaction.

hexamethylene diacrylate
Acute effects: Causes skin irritation. Causes serious eye irritation.
Sensitization: May cause an allergic skin reaction.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Acute effects: Causes skin irritation. Causes serious eye irritation.
Sensitization: May cause an allergic skin reaction.

Hydroxycyclohexyl phenyl ketone
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: May cause an allergic skin reaction.

### 11.2 Information on other hazards

**Endocrine disrupting properties**
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 12: Ecological information

Ecotoxicological studies of the product are not available.

Do not allow to escape into waterways, wastewater or soil.

Please find below the ecotoxicological data available to us for the components.

### 12.1 Toxicity

**Acute Fish toxicity**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
LC50 > 0,082 mg/l
Species: Cyprinus carpio (Carp)
Exposure duration: 96 h
Method: ISO 7346/1
No toxic effects in the water-soluble range.

2-phenoxyethyl acrylate
LC50 10 mg/l
Species: Leuciscus idus (Golden orfe)
Exposure duration: 96 h
Method: OECD Test Guideline 203

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
LC50 0,704 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203

hexamethylene diacrylate
LC50 0,38 mg/l
Species: Oryzias latipes (Japanese medaka)
Exposure duration: 96 h
Method: OECD Test Guideline 203

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
LC50 1 - 10 mg/l
Species: Leuciscus idus (Golden orfe)
Exposure duration: 96 h
Method: DIN 38412

Hydroxycyclohexyl phenyl ketone
LC50 24 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: Regulation (EC) No. 440/2008, Annex, C.1

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
LC50 1,4 mg/l
Species: Cyprinus carpio (Carp)
Exposure duration: 96 h
Method: OECD Test Guideline 203

**Chronic Fish toxicity**

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EC10 0,43 mg/l
Species: Pimephales promelas (fathead minnow)
Exposure duration: 33 d
Method: OECD Test Guideline 210

2-phenoxyethyl acrylate
No data available.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Study scientifically not justified.

hexamethylene diacrylate
NOEC 0,072 mg/l
Species: Oryzias latipes (Orange-red killifish)
Exposure duration: 39 d
Method: OECD Test Guideline 210

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
No data available.

Hydroxycyclohexyl phenyl ketone
EC10 > 10 mg/l
Species: Pimephales promelas (fathead minnow)
Exposure duration: 32 d
Method: OECD Test Guideline 210

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**Acute toxicity for daphnia**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EL50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

2-phenoxyethyl acrylate
EC50 1,21 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Study scientifically not justified.

hexamethylene diacrylate
EC50 2,7 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
EC50 10 - 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

Hydroxycyclohexyl phenyl ketone
EC50 53,9 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
EC50 3,53 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

**Chronic toxicity to daphnia**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EC10 > 0,51 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

2-phenoxyethyl acrylate
EC10 0,1 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211
Studies of a comparable product.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
NOEC 0,092 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

hexamethylene diacrylate
NOEC 0,14 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
No data available.

Hydroxycyclohexyl phenyl ketone
EC10 (mortality) 0,04 - 0,5 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
No data available.

**Acute toxicity for algae**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EL50 105 mg/l
endpoint: Growth inhibition
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

EL10 29 mg/l
endpoint: Growth inhibition
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

2-phenoxyethyl acrylate
EC50 4,4 mg/l
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: ISO 8692

EC10 0,71 mg/l
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: ISO 8692

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
EC50 1,98 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

NOEC 0,405 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

hexamethylene diacrylate
EC50 2,33 mg/l
Species: Selenastrum capricornutum (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

NOEC 0,9 mg/l
Species: Selenastrum capricornutum (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
ErC50 10 - 100 mg/l
Species: scenedesmus subspicatus
Exposure duration: 72 h
Method: OECD Test Guideline 201

Hydroxycyclohexyl phenyl ketone
EC50 14,4 mg/l
endpoint: Growth inhibition
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

EC10 2,51 mg/l
endpoint: Growth inhibition
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
EC50 > 2,01 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

EC10 1,56 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

**Acute bacterial toxicity**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
EC50 > 1.000 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

2-phenoxyethyl acrylate
EC50 177 mg/l
Species: activated sludge
Method: OECD Test Guideline 209

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Study scientifically not justified.

hexamethylene diacrylate
EC50 270 mg/l
Species: activated sludge
Exposure duration: 30 min
Method: OECD Test Guideline 209

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
EC50 > 10.000 mg/l
Species: Pseudomonas putida
Exposure duration: 0,5 h
Method: DIN 38412

Hydroxycyclohexyl phenyl ketone
EC50 > 100 mg/l
Species: activated sludge
Exposure duration: 3 h

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
EC50 > 1.000 mg/l
Species: activated sludge
Method: OECD Test Guideline 209

**Ecotoxicology Assessment**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

2-phenoxyethyl acrylate
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Acute aquatic toxicity: Very toxic to aquatic life.
Chronic aquatic toxicity: Very toxic to aquatic life with long lasting effects.

hexamethylene diacrylate
Acute aquatic toxicity: Very toxic to aquatic life.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

Hydroxycyclohexyl phenyl ketone
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Harmful to aquatic life with long lasting effects.

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

**M-Factor**
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
M-factor (acute aquat. tox.): 1
M-factor (chron. aquat. tox.): 1

hexamethylene diacrylate
M-factor (acute aquat. tox.): 1

**12.2 Persistence and degradability**

**Biodegradability**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Biodegradation: 42 %, 28 d, i.e. not readily biodegradable (10 day time window criterion is not met)
Method: OECD Test Guideline 301 F

2-phenoxyethyl acrylate
Test type: aerobic
Inoculum: Sewage sludge
Biodegradation: 22 %, 28 d, i.e. readily biodegradable
Method: OECD Test Guideline 301 D

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Test type: aerobic
Inoculum: activated sludge, non-adapted
Biodegradation: 51 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 F

Test type: aerobic
Inoculum: activated sludge, non-adapted
Biodegradation: 73,9 %, 60 d, i.e. not readily biodegradable (10 day time window criterion is not met)
Method: OECD Test Guideline 301 F

Test type: aerobic
Inoculum: activated sludge, non-adapted
Biodegradation: 57 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 310

hexamethylene diacrylate
Biodegradation: 60 - 70 %, 28 d, i.e. readily biodegradable
Method: OECD Test Guideline 310

Biodegradation: 60 - 70 %, 28 d, i.e. inherently degradable
Method: OECD Test Guideline 302 B

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Biodegradation: 40 - 50 %, i.e. not readily degradable
Method: OECD Test Guideline 301 B

Hydroxycyclohexyl phenyl ketone
Test type: aerobic
Inoculum: activated sludge, non-adapted
Biodegradation: 73 %, 28 d, i.e. readily biodegradable
Method: Regulation (EC) No. 440/2008, Annex, C.4-C

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Test type: aerobic
Inoculum: activated sludge, non-adapted
Biodegradation: 0 - 10 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 F

**Stability in water**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Test type: Hydrolysis
Half life: 110 h at 25 °C (pH: 7)
Method: OECD Test Guideline 111

Test type: Hydrolysis
Half life: 38 h at 25 °C (pH: 9)
Method: OECD Test Guideline 111

**12.3 Bioaccumulative potential**

**Bioaccumulation**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Species: Lepomis macrochirus (Bluegill sunfish)
Exposure duration: 14 d
Method: OECD Test Guideline 305
An accumulation in aquatic organisms is not to be expected.

2-phenoxyethyl acrylate
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate
Bioconcentration factor (BCF): 37
Species: Danio rerio (zebra fish)
Exposure duration: 56 h
Method: OECD Test Guideline 305
Studies of a comparable product.

hexamethylene diacrylate
no data available

(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Accumulation in aquatic organisms is unlikely.

Hydroxycyclohexyl phenyl ketone
Bioconcentration factor (BCF): 4 - 12
Species: Cyprinus carpio (Carp)
Method: OECD Test Guideline 305 C

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Bioconcentration factor (BCF): 18 - 22
Species: Cyprinus carpio (Carp)
Exposure duration: 8 Weeks

**Partition coefficient (n−octanol/water)**
2-phenoxyethyl acrylate

log Pow: 2,58
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

log Pow: 4,09(value log Pow: calculated)

### 12.4 Mobility in soil

**Distribution among environmental compartments**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
Adsorption/Soil
log Koc value: 3,55
Method: OECD Test Guideline 121

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
The product contains none organically bound halogens.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. Reference number 2008/98/EC

Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. The classification of the product may meet the criteria for a hazardous waste. Offer surplus and non-recyclable solutions to a licensed disposal company. Do not dispose of waste into sewer.

### 13.1 Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Empty containers retain residue and can be dangerous. Containers must be recycled in compliance with national legislation and environmental regulations. Dispose of empty containers and wastes safely. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Where possible recycling is preferred to disposal or incineration.

No disposal into waste water.

## SECTION 14: Transport information

**ADR/RID**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | UN 3082 |
| 14.2 UN proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BADGE epoxy acrylate, 2-Phenoxyethyl acrylate) |
| 14.3 Transport hazard class(es) | : | 9 |
| Hazard Identification Number | : | 90 |
| 14.4 Packing group | : | III |
| 14.5 Environmental hazards | : | yes |

Limited quantity regulations applicable in accordance with chapter 3.4 ADR/RID in compliance with threshold value

**ADN**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | UN 3082 |
| 14.2 UN proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BADGE epoxy acrylate, 2-Phenoxyethyl acrylate) |
| 14.3 Transport hazard class(es) | : | 9 |
| Hazard Identification Number | : | 90 |
| 14.4 Packing group | : | III |
| 14.5 Environmental hazards | : | yes |

This classification data does not apply to transportation by tanker. If required, additional information can be requested from the manufacturer.

**IATA**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | UN 3082 |
| 14.2 UN proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BADGE epoxy acrylate, 2-Phenoxyethyl acrylate) |
| 14.3 Transport hazard class(es) | : | 9 |
| 14.4 Packing group | : | III |
| 14.5 Environmental hazards | : | yes |

**IMDG**

| | | |
|---|---|---|
| 14.1 UN number or ID number | : | UN 3082 |
| 14.2 UN proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BADGE epoxy acrylate, 2-Phenoxyethyl acrylate) |
| 14.3 Transport hazard class(es) | : | 9 |
| 14.4 Packing group | : | III |
| 14.5 Environmental hazards | : | Marine pollutant |
| EmS Code | : | F-A - S-F |
| Segregation Group IMDG | : | not applicable |

### 14.6 Special precautions for user

See section 6 - 8.

Additional information : Environmentally hazardous substance. Keep separated from foodstuffs.

**14.7 Maritime transport in bulk according to IMO instruments**

Product is not transported by us in bulk.

## SECTION 15: Regulatory information

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

**Candidate List of Substances of Very High Concern for Authorisation**
This product contains substances identified as SVHC according to REACH Regulation (EC) no. 1907/2006, Article 59. Please refer to section 3.

**Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.**
E2 Environmental hazards
Quantity1: 200 t Quantity2: 500 t

**REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)**
Conditions of restriction for the following entries should be considered: 3

**TA Luft List (Germany)**
Type: 5.2.1 Total dust
Fraction of other substances: 2,53 %

Type: 5.2.5 Organic Substances
portion Class 1: 10,38 %

Fraction of other substances: 86,92 %

Type: 5.2.7.1.3 Substances toxic to reproduction
Fraction of other substances: 0,5 %

**Water contaminating class (Germany)**
2 obviously hazardous to water
Classification according to AwSV, Annex 1 (5.2)

**Other regulations**
Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.
The product is subject to the supply restrictions of the German Ordinance on the Prohibition of Chemicals

**15.2 Chemical Safety Assessment**

**A Chemical Safety Assessment has been carried out for:**
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

## SECTION 16: Other information

**Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H360Fd | May damage fertility. Suspected of damaging the unborn child. |
| H361d | Suspected of damaging the unborn child. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

**Abbreviations and acronyms**

| | |
|---|---|
| ADN | Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieure |
| ADR | Accord européen relatif au transport international des marchandises Dangereuses par Route |
| ANSI | American National Standards Institute |
| ASTM | American Society of Testing and Materials (US) |
| ATE | Acute Toxic Estimate |
| AwSv | Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen |
| BCF | Bioconcentration Factor |
| CAS | Chemical Abstract Service |
| CLP | Regulation on Classification, Labelling and Packaging of Substances and Mixtures |
| CMR | Cancerogenic Mutagenic Reprotoxic |
| DIN | Deutsches Institut für Normung |
| DNEL | Derived No-Effect Level |
| EC… | Effect Concentration ... % |
| EWC | European Waste Catalogue |
| IATA | International Air Transport Association |
| IBC | Intermediate Bulk Container |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| IUPAC | International Union of Pure and Applied Chemistry |
| LOAEL | Lowest Observable Adverse Effect Level |
| LC… | Lethal Concentration, ...% |
| LD… | Lethal Dose, ...% |
| MARPOL | International Convention for the Prevention of Pollution From Ships |
| NOAEL | No Observed Adverse Effect Level |
| NOEL/NOEC | No Observed Effect Level/Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| PBT | persistent, bioaccumulative, toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire de marchandises Dangereuses |
| STOT | Specific Target Organ Toxicity |
| TRGS | Technische Regeln für Gefahrstoffe |
| vPvB | very Persistent, very Bioaccumulative |
| WGK | Wassergefährdungsklasse |

Relevant changes since the last version are highlighted in the margin. This version replaces all previous versions.

**Further information**

| Classification of the mixture: | Classification procedure: |
|---|---|
| Skin Irrit. 2 H315 | Calculation method |
| Eye Irrit. 2 H319 | Calculation method |
| Skin Sens. 1 H317 | Calculation method |
| Repr. 1B H360Fd | Calculation method |
| STOT SE 3 H335 | Calculation method |
| Aquatic Chronic 2 H411 | Calculation method |

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**Annex**

**The operational conditions and the implementation of Risk Management Measures (RMM) are dependent on the following priority-/lead substances for the respective exposure routes:**

**Lead substance(s), aquatic environment:**
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

**Lead substance(s), ozone layer:**
Not relevant

**Lead substance(s), Inhalation:**
2-phenoxyethyl acrylate
No exposure scenarios available

**Lead substance(s), Dermal:**
2-phenoxyethyl acrylate
No exposure scenarios available

**Lead substance(s), Oral:**
Not relevant

**Local effects, Skin:**
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate
For RMMs see chapter 8 of the SDS.
hexamethylene diacrylate
For RMMs see chapter 8 of the SDS.

**Local effects, Inhalation:**
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
For RMMs see chapter 8 of the SDS.

**Local effects, Eyes:**
hexamethylene diacrylate
For RMMs see chapter 8 of the SDS.

**Attention, advice for uses of the product:**
A finalized assessment of save uses is not possible because exposure scenarios are not available for all determined lead substances.

**Exposure Scenario**

| Number | Title |
|---|---|
| ES1 | Formulation or re-packing |
| ES2 | Use at industrial sites; End Use; Formulation. |
| ES3 | Use at industrial sites; End Use; Monomers; Dry polymerisation; Wet polymerisation. |
| ES4 | Widespread use by professional workers |

**ES1: Formulation or re-packing**

**1.1. Title section**

| | | |
|---|---|---|
| **Exposure Scenario name** | : | Formulation or re-packing |
| **Structured Short Title** | : | Formulation or re-packing |

| **Environment** | | |
|---|---|---|
| **CS1** | **Formulation or re-packing**<br>[exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate] | ERC2 |

**1.2. Conditions of use affecting exposure**

**1.2.1. Control of environmental exposure: Formulation into mixture (ERC2) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| **Product (article) characteristics** | | |
|---|---|---|
| Molar Mass | : | 208,3 g/mol |
| Vapour pressure | : | 1,3 Pa at 20 °C |
| Water solubility | : | 19,8 mg/l |
| Partition coefficient (n−octanol/water) | : | log Pow: 4,52 |
| Biodegradation | : | Inherently biodegradable. |
| **Amount used, frequency and duration of use (or from service life)** | | |
| Fraction of regional tonnage used locally: | : | 1 |
| Fraction used at main local source: | : | 1 |
| Annual amount per site | : | 200 tonnes/year |
| Daily amount per site | : | 1000 kg/day |
| Daily amount per site (Msafe) | : | 2.701,449 kg |
| Critical compartment for Msafe | : | Soil |
| Emission days | : | 200 |
| Remarks | : | days/year |
| **Conditions and measures related to sewage treatment plant** | | |
| STP type | : | Municipal Sewage Treatment Plant |
| STP sludge treatment | : | Sewage sludge incineration |
| STP effluent | : | 2.000 m³/d |
| Effectiveness (of a measure) | : | 100 % |
| **Conditions and measures related to treatment of waste (including article waste)** | | |
| Waste treatment | : | Incineration |
| **Other conditions affecting environmental exposure** | | |

| | | |
|---|---|---|
| Receiving surface water flow | : | 18.000 m³/d |
| Local freshwater dilution factor | : | 10 |
| Local marine water dilution factor | : | 100 |

**1.3. Exposure estimation and reference to its source**

**1.3.1. Environmental release and exposure: Formulation into mixture (ERC2) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| Release route | Release rate | Release estimation method | Remarks |
|---|---|---|---|
| Waste water | 0 % | ERC based estimation | |
| Air | 2,5 % | ERC based estimation | |
| Soil | 0 % | ERC based estimation | |

| Compartment | Exposure level | RCR | Remarks |
|---|---|---|---|
| Freshwater | 0,000000960 mg/L (EasyTRA, EU TGD) | 0,001043 | |
| Freshwater sediment | 0,000151 mg/kg dry weight (EasyTRA, EU TGD) | 0,001045 | |
| Marine water | 0,000000154 mg/L (EasyTRA, EU TGD) | 0,001677 | |
| Marine sediment | 0,000024 mg/kg dry weight (EasyTRA, EU TGD) | 0,001679 | |
| STP (sewage-treatment plant) | 0 mg/L (EasyTRA, EU TGD) | 0 | |
| Soil | 0,006336 mg/kg dry weight (EasyTRA, EU TGD) | 0,222314 | |

| Additional information on exposure estimation |
|---|
| Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR ≤ 1). |

**1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**ES2: Use at industrial sites; End Use; Formulation.**

**2.1. Title section**

| | | |
|---|---|---|
| **Exposure Scenario name** | : | End Use, Formulation |
| **Structured Short Title** | : | Use at industrial sites; End Use; Formulation. |

| **Environment** | | |
|---|---|---|
| **CS1** | **End Use, Formulation**<br>[exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate] | ERC5 |

**2.2. Conditions of use affecting exposure**

**2.2.1. Control of environmental exposure: Use at industrial site leading to inclusion into/onto article (ERC5) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| | | |
|---|---|---|
| **Product (article) characteristics** | | |
| Molar Mass | : | 208,3 g/mol |
| Vapour pressure | : | 1,3 Pa at 20 °C |
| Water solubility | : | 19,8 mg/l |
| Partition coefficient (n−octanol/water) | : | log Pow: 4,52 |
| Biodegradation | : | Inherently biodegradable. |
| **Amount used, frequency and duration of use (or from service life)** | | |
| Fraction of regional tonnage used locally: | : | 0,1 |
| Fraction used at main local source: | : | 1 |
| Annual amount per site | : | 180 tonnes/year |
| Daily amount per site | : | 90 kg/day |
| Daily amount per site (Msafe) | : | 3.947,239 kg |
| Critical compartment for Msafe | : | Soil |
| Emission days | : | 200 |
| Remarks | : | days/year |
| **Conditions and measures related to sewage treatment plant** | | |
| STP type | : | Municipal Sewage Treatment Plant |
| STP sludge treatment | : | Sewage sludge incineration |
| STP effluent | : | 2.000 m³/d |
| Effectiveness (of a measure) | : | 100 % |
| **Conditions and measures related to treatment of waste (including article waste)** | | |
| Waste treatment | : | Incineration |
| **Other conditions affecting environmental exposure** | | |

| | | |
|---|---|---|
| Receiving surface water flow | : | 18.000 m³/d |
| Local freshwater dilution factor | : | 10 |
| Local marine water dilution factor | : | 100 |

**2.3. Exposure estimation and reference to its source**

**2.3.1. Environmental release and exposure: Use at industrial site leading to inclusion into/onto article (ERC5) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| Release route | Release rate | Release estimation method | Remarks |
|---|---|---|---|
| Waste water | 0 % | ERC based estimation | |
| Air | 1,7 % | SpERC = FEICA 7 | |
| Soil | 0 % | ERC based estimation | |

| Compartment | Exposure level | RCR | Remarks |
|---|---|---|---|
| Freshwater | 0,000000960 mg/L (EasyTRA, EU TGD) | 0,001043 | |
| Freshwater sediment | 0,000151 mg/kg dry weight (EasyTRA, EU TGD) | 0,001045 | |
| Marine water | 0,000000154 mg/L (EasyTRA, EU TGD) | 0,001677 | |
| Marine sediment | 0,000024 mg/kg dry weight (EasyTRA, EU TGD) | 0,001679 | |
| STP (sewage-treatment plant) | 0 mg/L (EasyTRA, EU TGD) | 0 | |
| Soil | 0,000392 mg/kg dry weight (EasyTRA, EU TGD) | 0,013752 | |

| Additional information on exposure estimation |
|---|
| Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR ≤ 1). |

**2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**ES3: Use at industrial sites; End Use; Monomers; Dry polymerisation; Wet polymerisation.**

**3.1. Title section**

| | | |
|---|---|---|
| **Exposure Scenario name** | : | End Use, Monomers, Dry polymerisation, Wet polymerisation |
| **Structured Short Title** | : | Use at industrial sites; End Use; Monomers; Dry polymerisation; Wet polymerisation. |

| **Environment** | | |
|---|---|---|
| **CS1** | **End Use, Monomers, Dry polymerisation, Wet polymerisation**<br>[exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate] | ERC6c |

**3.2. Conditions of use affecting exposure**

**3.2.1. Control of environmental exposure: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)**
**[exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| **Product (article) characteristics** | | |
|---|---|---|
| Molar Mass | : | 208,3 g/mol |
| Vapour pressure | : | 1,3 Pa at 20 °C |
| Water solubility | : | 19,8 mg/l |
| Partition coefficient (n−octanol/water) | : | log Pow: 4,52 |
| Biodegradation | : | Inherently biodegradable. |
| **Amount used, frequency and duration of use (or from service life)** | | |
| Fraction of regional tonnage used locally: | : | 0,1 |
| Fraction used at main local source: | : | 1 |
| Annual amount per site | : | 1400 tonnes/year |
| Remarks | : | Dry polymerisation |
| Annual amount per site | : | 400 tonnes/year |
| Remarks | : | Wet polymerisation |
| Daily amount per site | : | 466,667 kg/day |
| Remarks | : | Dry polymerisation |
| Daily amount per site | : | 133,333 kg/day |
| Remarks | : | Wet polymerisation |
| Daily amount per site (Msafe) | : | 87.500 kg |
| Critical compartment for Msafe | : | Soil |
| Remarks | : | Dry polymerisation |
| Daily amount per site (Msafe) | : | 3.737,239 kg |
| Critical compartment for Msafe | : | Marine sediment |
| Remarks | : | Wet polymerisation |
| Emission days | : | 300 |

| | | |
|---|---|---|
| Remarks | : | days/year |
| **Conditions and measures related to sewage treatment plant** | | |
| STP type | : | Municipal Sewage Treatment Plant |
| STP sludge treatment | : | Sewage sludge incineration |
| STP effluent | : | 2.000 m³/d |
| Effectiveness (of a measure) | : | 100 % |
| **Conditions and measures related to treatment of waste (including article waste)** | | |
| Waste treatment | : | Incineration |
| **Other conditions affecting environmental exposure** | | |
| Receiving surface water flow | : | 18.000 m³/d |
| Local freshwater dilution factor | : | 10 |
| Local marine water dilution factor | : | 100 |

### 3.3. Exposure estimation and reference to its source

#### 3.3.1. Environmental release and exposure: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]

| Release route | Release rate | Release estimation method | Remarks |
|---|---|---|---|
| Waste water | 0 % | ERC based estimation | Dry polymerisation |
| Waste water | 0,001 % | ERC based estimation | Wet polymerisation |
| Air | 0,05 % | ERC based estimation | |
| Soil | 0 % | ERC based estimation | |

| Compartment | Exposure level | RCR | Remarks |
|---|---|---|---|
| Freshwater | 0,000000960 mg/L (EasyTRA, EU TGD) | 0,001043 | Dry polymerisation |
| Freshwater sediment | 0,000151 mg/kg dry weight (EasyTRA, EU TGD) | 0,001045 | Dry polymerisation |
| Marine water | 0,000000154 mg/L (EasyTRA, EU TGD) | 0,001677 | Dry polymerisation |
| Marine sediment | 0,000024 mg/kg dry weight (EasyTRA, EU TGD) | 0,001679 | Dry polymerisation |
| STP (sewage-treatment plant) | 0 mg/L (EasyTRA, EU TGD) | 0 | Dry polymerisation |
| Soil | 0,000093 mg/kg dry weight (EasyTRA, EU TGD) | 0,003266 | Dry polymerisation |
| | | | |
| Freshwater | 0,000032 mg/L (EasyTRA, EU TGD) | 0,035 | Wet polymerisation |
| Freshwater sediment | 0,005081 mg/kg dry weight (EasyTRA, EU TGD) | 0,035043 | Wet polymerisation |
| Marine water | 0,00000328 mg/L (EasyTRA, EU TGD) | 0,035634 | Wet polymerisation |

| | | | |
|---|---|---|---|
| Marine sediment | 0,000517 mg/kg dry weight (EasyTRA, EU TGD) | 0,035677 | Wet polymerisation |
| STP (sewage-treatment plant) | 0,000313 mg/L (EasyTRA, EU TGD) | 0,000157 | Wet polymerisation |
| Soil | 0,00003 mg/kg dry weight (EasyTRA, EU TGD) | 0,001045 | Wet polymerisation |

| **Additional information on exposure estimation** |
|---|
| Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR ≤ 1). |

**3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**ES4: Widespread use by professional workers**

**4.1. Title section**

| | | |
|---|---|---|
| **Exposure Scenario name** | : | End Use, Formulation |
| **Structured Short Title** | : | Widespread use by professional workers |

| **Environment** | | |
|---|---|---|
| **CS1** | **End Use, Formulation**<br>[exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate] | ERC8c, ERC8f |

**4.2. Conditions of use affecting exposure**

**4.2.1. Control of environmental exposure: Widespread use leading to inclusion into/onto article (indoor) (ERC8c) / Widespread use leading to inclusion into/onto article (outdoor) (ERC8f) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| **Product (article) characteristics** | | |
|---|---|---|
| Molar Mass | : | 208,3 g/mol |
| Vapour pressure | : | 1,3 Pa at 20 °C |
| Water solubility | : | 19,8 mg/l |
| Partition coefficient (n−octanol/water) | : | log Pow: 4,52 |
| Biodegradation | : | Inherently biodegradable. |
| **Amount used, frequency and duration of use (or from service life)** | | |
| Fraction of regional tonnage used locally: | : | 1 |
| Fraction used at main local source: | : | 0,002 |
| Annual amount per site | : | 20 tonnes/year |
| Daily amount per site | : | 0,109589 kg/day |
| Daily amount per site (Msafe) | : | 1,791 kg |
| Critical compartment for Msafe | : | Marine sediment |
| Emission days | : | 365 |
| Remarks | : | days/year |
| **Conditions and measures related to treatment of waste (including article waste)** | | |
| Waste treatment | : | External treatment and disposal of waste should comply with applicable local and/or national regulations. |
| **Other conditions affecting environmental exposure** | | |
| Local freshwater dilution factor | : | 10 |
| Local marine water dilution factor | : | 100 |

**4.3. Exposure estimation and reference to its source**

**4.3.1. Environmental release and exposure: Widespread use leading to inclusion into/onto article (indoor) (ERC8c) / Widespread use leading to inclusion into/onto article (outdoor) (ERC8f) [exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate]**

| Release route | Release rate | Release estimation method | Remarks |
|---|---|---|---|
| Waste water | 1 % | ERC based estimation | |
| Air | 15 % | ERC based estimation | |
| Soil | 0,5 % | ERC based estimation | |

| Compartment | Exposure level | RCR | Remarks |
|---|---|---|---|
| Freshwater | 0,000056 mg/L (EasyTRA, EU TGD) | 0,060465 | |
| Freshwater sediment | 0,008778 mg/kg dry weight (EasyTRA, EU TGD) | 0,060538 | |
| Marine water | 0,00000562 mg/L (EasyTRA, EU TGD) | 0,061099 | |
| Marine sediment | 0,000887 mg/kg dry weight (EasyTRA, EU TGD) | 0,061173 | |
| Soil | 0,00000444 mg/kg dry weight (EasyTRA, EU TGD) | 0,000156 | |

| Additional information on exposure estimation |
|---|
| Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR ≤ 1). |

**4.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.