



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

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LOCTITE 270

SDS No. : 346906
V007.1

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

1.1. Product identifier

LOCTITE 270

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

Intended use:

Adhesive

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000

Fax-no.: +44 1442 278071

ua-productsafety.uk@henkel.com

1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

| | |
|---|------------|
| Skin irritation | Category 2 |
| H315 Causes skin irritation. | |
| Serious eye irritation | Category 2 |
| H319 Causes serious eye irritation. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| Specific target organ toxicity - single exposure | Category 3 |
| H335 May cause respiratory irritation. | |
| Target organ: respiratory tract irritation | |
| Chronic hazards to the aquatic environment | Category 2 |
| H411 Toxic to aquatic life with long lasting effects. | |

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Contains**

3,3,5 Trimethylcyclohexyl methacrylate
 2,2'-Ethylenedioxydiethyl dimethacrylate
 maleic acid
 Acetic acid, 2-phenylhydrazide

Signal word:

Warning

Hazard statement:

H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statement:

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

**Precautionary statement:
Prevention**

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

**Precautionary statement:
Response**

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

None if used properly.

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures**General chemical description:**

Anaerobic adhesive

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

| Hazardous components CAS-No. | EC Number REACH-Reg No. | content | Classification |
|--|------------------------------------|---|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | 231-927-0 01-2120748527-45 | 25- 50 % | Aquatic Chronic 2 H411 Skin Sens. 1B H317 STOT SE 3 H335 Skin Irrit. 2 H315 Eye Irrit. 2 H319 |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | 203-652-6 01-2119969287-21 | 5- < 10 % | Skin Sens. 1B H317 |
| Cumene hydroperoxide 80-15-9 | 201-254-7 01-2119475796-19 | 1- < 2,5 % | Acute Tox. 4; Dermal H312 STOT RE 2 H373 Acute Tox. 4; Oral H302 Org. Perox. E H242 Acute Tox. 3; Inhalation H331 Aquatic Chronic 2 H411 Skin Corr. 1B H314 |
| maleic acid 110-16-7 | 203-742-5 01-2119488705-25 | 0,1- < 1 % | Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 STOT SE 3 H335 |
| Acetic acid, 2-phenylhydrazide 114-83-0 | 204-055-3 | 0,1- < 1 % | Acute Tox. 3; Oral H301 Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 STOT SE 3; Inhalation H335 Carc. 2 H351 |
| 1,4-Naphthalenedione 130-15-4 | 204-977-6 | 0,01- < 0,025 % (100 ppm- < 250 ppm) | Acute Tox. 3; Oral H301 Skin Irrit. 2; Dermal H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 Acute Tox. 1; Inhalation H330 STOT SE 3; Inhalation H335 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M factor (Acute Aquat Tox): 10 M factor (Chron Aquat Tox): 10 |

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

Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

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

Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

Eye contact:

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

Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

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

SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

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

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide, foam, powder

Fine water spray

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:

In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

Avoid contact with skin and eyes.

Wear protective equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

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

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Use only in well-ventilated areas.

Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

Avoid skin and eye contact.

See advice in section 8

Hygiene measures:

Good industrial hygiene practices should be observed.

Do not eat, drink or smoke while working.

Wash hands before work breaks and after finishing work.

7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.

Store in a cool, well-ventilated place.

Refer to Technical Data Sheet

Do not store together with food or other consumables (coffee, tea, tobacco, etc.).

7.3. Specific end use(s)

Adhesive

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational Exposure Limits**

Valid for

Great Britain

None

Occupational Exposure Limits

Valid for

Ireland

None

Predicted No-Effect Concentration (PNEC):

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|--|------------------------------|-----------------|---------------|-----|--------------|--------|----------------------------------|
| | | | mg/l | ppm | mg/kg | others | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | aqua (freshwater) | | 0,00059 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | aqua (marine water) | | 0,000059 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | aqua (intermittent releases) | | 0,0059 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sewage treatment plant (STP) | | 100 mg/l | | | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sediment (freshwater) | | | | 0,044 mg/kg | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sediment (marine water) | | | | 0,004 mg/kg | | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Soil | | | | 0,008 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | aqua (freshwater) | | 0,164 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | aqua (marine water) | | 0,0164 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | aqua (intermittent releases) | | 0,164 mg/l | | | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sediment (freshwater) | | | | 1,85 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sediment (marine water) | | | | 0,185 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Soil | | | | 0,274 mg/kg | | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Air | | | | | | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Predator | | | | | | no potential for bioaccumulation |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | aqua (freshwater) | | 0,0031 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | aqua (marine water) | | 0,00031 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | aqua (intermittent releases) | | 0,031 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | Sewage treatment plant | | 0,35 mg/l | | | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | sediment (freshwater) | | | | 0,023 mg/kg | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | sediment (marine water) | | | | 0,0023 mg/kg | | |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | Soil | | | | 0,0029 mg/kg | | |
| Maleic acid 110-16-7 | aqua (freshwater) | | 0,1 mg/l | | | | |
| Maleic acid 110-16-7 | aqua (intermittent releases) | | 0,4281 mg/l | | | | |
| Maleic acid 110-16-7 | sediment (freshwater) | | | | 0,334 mg/kg | | |
| Maleic acid 110-16-7 | sewage treatment plant (STP) | | 44,6 mg/l | | | | |
| Maleic acid 110-16-7 | aqua (marine water) | | 0,01 mg/l | | | | |

| | | | | | | | |
|-------------------------|----------------------------|--|--|--|-----------------|--|--|
| Maleic acid 110-16-7 | sediment (marine water) | | | | 0,0334 mg/kg | | |
| Maleic acid 110-16-7 | Soil | | | | 0,0415 mg/kg | | |

Derived No-Effect Level (DNEL):

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|---|--------------------|-------------------|--|---------------|-------------|----------------------|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Workers | inhalation | Long term exposure - systemic effects | | 16,45 mg/m3 | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Workers | dermal | Long term exposure - systemic effects | | 46,7 mg/kg | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | General population | inhalation | Long term exposure - systemic effects | | 2,9 mg/m3 | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | General population | dermal | Long term exposure - systemic effects | | 16,7 mg/kg | |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | General population | oral | Long term exposure - systemic effects | | 1,67 mg/kg | |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Workers | inhalation | Long term exposure - systemic effects | | 48,5 mg/m3 | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Workers | dermal | Long term exposure - systemic effects | | 13,9 mg/kg | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | General population | inhalation | Long term exposure - systemic effects | | 14,5 mg/m3 | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | General population | dermal | Long term exposure - systemic effects | | 8,33 mg/kg | no hazard identified |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | General population | oral | Long term exposure - systemic effects | | 8,33 mg/kg | no hazard identified |
| .alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9 | Workers | inhalation | Long term exposure - systemic effects | | 6 mg/m3 | |
| Maleic acid 110-16-7 | Workers | dermal | Acute/short term exposure - local effects | | 0,55 mg/cm2 | |
| Maleic acid 110-16-7 | Workers | dermal | Long term exposure - local effects | | 0,04 mg/cm2 | |
| Maleic acid 110-16-7 | Workers | dermal | Acute/short term exposure - systemic effects | | 58 mg/kg | |
| Maleic acid 110-16-7 | Workers | dermal | Long term exposure - systemic effects | | 3,3 mg/kg | |
| Maleic acid 110-16-7 | Workers | inhalation | Acute/short term exposure - local effects | | 3 mg/m3 | |
| Maleic acid 110-16-7 | Workers | inhalation | Long term exposure - systemic effects | | 3 mg/m3 | |
| Maleic acid 110-16-7 | Workers | inhalation | Long term exposure - local effects | | 3 mg/m3 | |
| Maleic acid 110-16-7 | Workers | inhalation | Acute/short term exposure - systemic effects | | 3 mg/m3 | |

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A (EN 14387)

Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR; ≥ 0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR; ≥ 0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

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

Protective eye equipment should conform to EN166.

Skin protection:

Wear suitable protective clothing.

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

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.

Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|------------------------------------|------------------------------------|
| Appearance | liquid liquid green |
| Odor | characteristic |
| Odour threshold | No data available / Not applicable |
| pH | No data available / Not applicable |
| Melting point | No data available / Not applicable |
| Solidification temperature | No data available / Not applicable |
| Initial boiling point | > 65 °C (> 149 °F) |
| Flash point | 110 °C (230 °F) |
| Evaporation rate | No data available / Not applicable |
| Flammability | No data available / Not applicable |
| Explosive limits | No data available / Not applicable |
| Vapour pressure (25 °C (77 °F)) | 2,85 mbar |
| Relative vapour density: | No data available / Not applicable |
| Density | 1,10 g/cm ³ |

| | |
|--|------------------------------------|
| (20 °C (68 °F)) | |
| Bulk density | No data available / Not applicable |
| Solubility | No data available / Not applicable |
| Solubility (qualitative) | Insoluble |
| (23 °C (73.4 °F); Solvent: Water) | |
| Solubility (qualitative) | Soluble |
| (Solvent: Acetone) | |
| Partition coefficient: n-octanol/water | No data available / Not applicable |
| Auto-ignition temperature | No data available / Not applicable |
| Decomposition temperature | No data available / Not applicable |
| Viscosity | No data available / Not applicable |
| Viscosity (kinematic) | No data available / Not applicable |
| Explosive properties | No data available / Not applicable |
| Oxidising properties | No data available / Not applicable |

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Peroxides.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

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

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|---|---------------|---------------|---------|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD0 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | LD50 | 10.837 mg/kg | rat | not specified |
| Cumene hydroperoxide 80-15-9 | LD50 | 382 mg/kg | rat | other guideline: |
| maleic acid 110-16-7 | LD50 | 708 mg/kg | rat | not specified |
| Acetic acid, 2- phenylhydrazide 114-83-0 | LD50 | 270 mg/kg | rat | not specified |
| 1,4-Naphthalenedione 130-15-4 | LD50 | 190 mg/kg | rat | not specified |

Acute dermal toxicity:

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

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|---|--|----------------------|---------|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD0 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | LD50 | > 2.000 mg/kg | mouse | not specified |
| Cumene hydroperoxide 80-15-9 | LD50 | 530 - 1.060 mg/kg | rat | other guideline: |
| Cumene hydroperoxide 80-15-9 | Acute toxicity estimate (ATE) | 1.100 mg/kg | | Expert judgement |
| maleic acid 110-16-7 | LD50 | 1.560 mg/kg | rabbit | not specified |

Acute inhalative toxicity:

No data available.

Skin corrosion/irritation:

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

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|---|----------------|------------------|---------|-------------|
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | not irritating | 24 h | rabbit | Draize Test |
| Cumene hydroperoxide 80-15-9 | corrosive | | rabbit | Draize Test |
| maleic acid 110-16-7 | irritating | 24 h | human | Patch Test |

Serious eye damage/irritation:

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

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|---|----------------------|------------------|---------|---|
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| maleic acid 110-16-7 | highly irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

Respiratory or skin sensitization:

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

| Hazardous substances CAS-No. | Result | Test type | Species | Method |
|---|-------------|---------------------------------------|------------|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| maleic acid 110-16-7 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| maleic acid 110-16-7 | sensitising | Mouse local lymphnode assay (LLNA) | guinea pig | OECD Guideline 406 (Skin Sensitisation) |

Germ cell mutagenicity:

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

| Hazardous substances CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|---|----------|--|--|---------|---|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | negative | in vitro mammalian cell micronucleus test | with and without | | OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| Cumene hydroperoxide 80-15-9 | positive | bacterial reverse mutation assay (e.g Ames test) | without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| maleic acid 110-16-7 | negative | bacterial reverse mutation assay (e.g Ames test) | no data | | Ames Test |
| maleic acid 110-16-7 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |

Carcinogenicity

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

| Hazardous components CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|---------------------------------|------------------|-------------------------|---|---------|-------------|--|
| maleic acid 110-16-7 | not carcinogenic | oral: feed | 2 y daily | rat | male/female | OECD Guideline 451 (Carcinogenicity Studies) |

Reproductive toxicity:

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

| Hazardous substances CAS-No. | Result / Value | Test type | Route of application | Species | Method |
|---|---|----------------------------|-------------------------|---------|---|
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOAEL P 1.000 mg/kg NOAEL F1 1.000 mg/kg | | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| maleic acid 110-16-7 | NOAEL F1 150 mg/kg NOAEL F2 55 mg/kg | Two generation study | oral: gavage | rat | OECD Guideline 416 (Two- Generation Reproduction Toxicity Study) |

STOT-single exposure:

No data available.

STOT-repeated exposure::

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

| Hazardous substances CAS-No. | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|---|-------------------|-------------------------|--|---------|---|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | NOAEL 1.000 mg/kg | oral: gavage | 28 d daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOAEL 1.000 mg/kg | oral: gavage | daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Cumene hydroperoxide 80-15-9 | | inhalation: aerosol | 6 h/d 5 d/w | rat | not specified |
| maleic acid 110-16-7 | NOAEL >= 40 mg/kg | oral: feed | 90 d daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |

Aspiration hazard:

No data available.

SECTION 12: Ecological information

General ecological information:

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

12.1. Toxicity

Toxicity (Fish):

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

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|------------|---------------|--|---|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | LC50 | 1,9 mg/l | 96 h | Brachydanio rerio (new name: Danio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | LC50 | 16,4 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Cumene hydroperoxide 80-15-9 | LC50 | 3,9 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| maleic acid 110-16-7 | LC50 | > 245 mg/l | 48 h | Leuciscus idus | DIN 38412-15 |

Toxicity (Daphnia):

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

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|------------|---------------|---------------|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | EC50 | 14,43 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Cumene hydroperoxide 80-15-9 | EC50 | 18 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| maleic acid 110-16-7 | EC50 | 42,81 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

Chronic toxicity to aquatic invertebrates

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

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|---------|---------------|---------------|--|
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOEC | 32 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| maleic acid 110-16-7 | NOEC | 10 mg/l | 21 d | Daphnia magna | other guideline: |

Toxicity (Algae):

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

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|------------|---------------|---------------------------------|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | EC10 | 0,43 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | EC50 | > 100 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | NOEC | 18,6 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Cumene hydroperoxide 80-15-9 | ErC50 | 3,1 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| maleic acid 110-16-7 | EC50 | 74,35 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| maleic acid 110-16-7 | EC10 | 11,8 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 1,4-Naphthalenedione 130-15-4 | EC50 | 0,011 mg/l | 72 h | Dunaliella bioculata | OECD Guideline 201 (Alga, Growth Inhibition Test) |

Toxicity to microorganisms

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

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---------------------------------|---------------|-----------|---------------|--------------------|--|
| Cumene hydroperoxide 80-15-9 | EC10 | 70 mg/l | 30 min | | not specified |
| maleic acid 110-16-7 | EC10 | 44,6 mg/l | 18 h | Pseudomonas putida | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test) |

12.2. Persistence and degradability

| Hazardous substances CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|---|----------------------------|-----------|---------------|------------------|---|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | not readily biodegradable. | aerobic | 16,8 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | readily biodegradable | aerobic | 85 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| Cumene hydroperoxide 80-15-9 | | no data | 0 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| maleic acid 110-16-7 | readily biodegradable | aerobic | 97,08 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| 1,4-Naphthalenedione 130-15-4 | not readily biodegradable. | no data | 0 - 60 % | | OECD 301 A - F |

12.3. Bioaccumulative potential

| Hazardous substances CAS-No. | Bioconcentratio n factor (BCF) | Exposure time | Temperature | Species | Method |
|---------------------------------|-----------------------------------|---------------|-------------|-------------|---|
| Cumene hydroperoxide 80-15-9 | 9,1 | | | calculation | OECD Guideline 305 (Bioconcentration: Flow-through Fish Test) |

12.4. Mobility in soil

Cured adhesives are immobile.

| Hazardous substances CAS-No. | LogPow | Temperature | Method |
|--|--------|-------------|--|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | 5,25 | 20 °C | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | 2,3 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| Cumene hydroperoxide 80-15-9 | 2,16 | | not specified |
| maleic acid 110-16-7 | -1,3 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Acetic acid, 2-phenylhydrazide 114-83-0 | 0,74 | | not specified |
| 1,4-Naphthalenedione 130-15-4 | 1,71 | | not specified |

12.5. Results of PBT and vPvB assessment

| Hazardous substances CAS-No. | PBT / vPvB |
|--|---|
| 3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Cumene hydroperoxide 80-15-9 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| maleic acid 110-16-7 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 1,4-Naphthalenedione 130-15-4 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of in accordance with local and national regulations.

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

Disposal of uncleaned packages:

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

Disposal must be made according to official regulations.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number

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

14.2. UN proper shipping name

| | |
|------|--|
| ADR | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3,3,5-Trimethylcyclohexyl methacrylate) |
| RID | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3,3,5-Trimethylcyclohexyl methacrylate) |
| ADN | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3,3,5-Trimethylcyclohexyl methacrylate) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3,3,5-Trimethylcyclohexyl methacrylate) |
| IATA | Environmentally hazardous substance, liquid, n.o.s. (3,3,5-Trimethylcyclohexyl methacrylate) |

14.3. Transport hazard class(es)

| | |
|------|---|
| ADR | 9 |
| RID | 9 |
| ADN | 9 |
| IMDG | 9 |
| IATA | 9 |

14.4. Packing group

| | |
|------|-----|
| ADR | III |
| RID | III |
| ADN | III |
| IMDG | III |
| IATA | III |

14.5. Environmental hazards

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

14.6. Special precautions for user

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

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), 197 (IATA), 969 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

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

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H242 Heating may cause a fire.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

Further information:

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