**Safety Data Sheet** according to Singapore Standard SS 586.



LOCTITE ABLESTIK 3230 known as Ablebond 3230 (36g),

SDS No. : 383058
V001.17
Revision: 17.12.2025
printing date: 25.03.2026

## Section 1. Identification of the substance/preparation and of the company/undertaking

**Product name:** LOCTITE ABLESTIK 3230 known as Ablebond 3230 (36g),

**Other means of identification:** LOCTITE ABLESTIK 3230
**Product code:** IDH1201327
**Recommended use of the chemical and restrictions on use**

**Intended use:** Die attach adhesive
**Manufacturer/Importer/Distributor Representative Company**

Henkel Singapore Pte Ltd
Science Park Drive 1B
Units 09-31 to 09-35
119315 Singapore

Singapore

Phone: +65 (6266) 0100
Fax-no.: +65 (6266) 1161

**E-mail address of person responsible for Safety Data Sheet:** ap-ua-psra.sea@henkel.com

**Emergency Telephone for Chemical Accidents:** FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +65 6424 7016

## Section 2. Hazards identification

**GHS Classification:**

| Hazard Class | Hazard Category | Target organ |
|---|---|---|
| Serious eye damage/eye irritation | Category 2 | |
| Respiratory sensitizer | Category 1 | |
| Skin sensitizer | Category 1 | |
| Germ cell mutagenicity | Category 2 | |
| Toxic to reproduction | Category 1B | |
| Specific target organ toxicity - repeated exposure | Category 2 | Nervous system |
| Acute hazards to the aquatic environment | Category 1 | |
| Chronic hazards to the aquatic environment | Category 1 | |

**GHS label elements:**

**Hazard pictogram:**



**Signal word:** Danger

| | |
|---|---|
| **Hazard statement:** | H317 May cause an allergic skin reaction.<br>H319 Causes serious eye irritation.<br>H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.<br>H341 Suspected of causing genetic defects.<br>H360 May damage fertility or the unborn child.<br>H373 May cause damage to organs through prolonged or repeated exposure.<br>H410 Very toxic to aquatic life with long lasting effects. |

**Precaution:**

| | |
|---|---|
| **Prevention:** | P201 Obtain special instructions before use.<br>P260 Do not breathe dust/fume/gas/mist/vapours/spray.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection. |
| **Response:** | P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.<br>P308+P313 IF exposed or concerned: Get medical advice/attention. |

## Section 3. Composition / information on ingredients

**Substance or Mixture:**
Mixture

**Declaration of hazardous chemical:**

| Hazard component CAS-No. | Content | GHS Classification |
|---|---|---|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | 60- 100 % | Reproductive toxicant. 2<br>H361<br>Target Organ Systemic Toxicant - Repeated exposure 2<br>H373<br>Acute hazards to the aquatic environment 1<br>H400<br>Chronic hazards to the aquatic environment 1<br>H410 |
| 2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane<br>39817-09-9 | 1- 10 % | Skin irritation 2<br>H315<br>Serious eye irritation 2<br>H319<br>Skin Sensitization 1<br>H317<br>Chronic hazards to the aquatic environment 2<br>H411 |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | 1- 10 % | Serious eye irritation 2<br>H319<br>Skin Sensitization 1A<br>H317<br>Target Organ Systemic Toxicant - Repeated exposure 2<br>H373 |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | 1- 10 % | Skin Sensitization 1B<br>H317<br>Germ cell mutagenicity 2<br>H341 |
| Dodecyloxirane<br>3234-28-4 | 1- 10 % | Skin irritation 2<br>H315<br>Acute hazards to the aquatic environment 1<br>H400<br>Chronic hazards to the aquatic environment 1<br>H410 |
| hexahydro-4-methylphthalic anhydride<br>19438-60-9 | 1- 10 % | Serious eye damage/eye irritation 1<br>H318<br>Respiratory Sensitization 1<br>H334<br>Skin Sensitization 1<br>H317 |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | 1- 10 % | Acute toxicity 4; Oral<br>H302<br>Acute toxicity 4; Inhalation<br>H332<br>Acute toxicity 4; Dermal<br>H312<br>Skin irritation 2<br>H315<br>Serious eye damage/eye irritation 1<br>H318<br>Skin Sensitization 1<br>H317<br>Reproductive toxicant. 1B<br>H360 |
| Copper oxide<br>1317-38-0 | 0.1- 1 % | Acute hazards to the aquatic environment 1<br>H400<br>Chronic hazards to the aquatic environment 1<br>H410 |
| maleic anhydride<br>108-31-6 | < 0.1 % | Acute toxicity 4; Oral<br>H302 |

| | | |
|---|---|---|
| | | Skin corrosion 1B<br>H314<br>Serious eye damage/eye irritation 1<br>H318<br>Respiratory Sensitization 1<br>H334<br>Skin Sensitization 1A<br>H317<br>Target Organ Systemic Toxicant - Repeated exposure 1; Inhalation<br>H372 |

## Section 4. First aid measures

**Inhalation:** Should not be a problem as product is of low volatility. However, if feeling unwell remove patient to fresh air.
In case of adverse health effects 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.

**Indication of immediate medical attention and special treatment needed:** See section: Description of first aid measures

## Section 5. Fire fighting measures

**Suitable extinguishing media:** water, carbon dioxide, foam, powder

**Improper extinguishing media:** High pressure waterjet

**Specific hazards arising from the chemical:** In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

**Special protection equipment and precautions for firefighters:** Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Hazardous combustion products:** Oxides of carbon, oxides of nitrogen, irritating organic vapors.

## Section 6. Accidental release measures

**Personal precautions:** Avoid contact with skin and eyes.
Wear protective equipment.

**Environmental precautions:** Do not empty into drains / surface water / ground water.

**Clean-up methods:** 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.

## Section 7. Handling and storage

**Handling:** Avoid skin and eye contact.
See advice in section 8

**Storage:** Refer to Technical Data Sheet.
Keep away from sources of ignition.

## Section 8. Exposure controls / personal protection

**Components with specific control parameters for workplace:**

| | | |
|---|---|---|
| Silver, Metal<br>7440-22-4 | **Value type** | Time Weighted Average (TWA): |
| | **mg/m³** | 0.1 |
| | **Remarks** | SG OEL |
| Silver, metal, dust and fume<br>7440-22-4 | **Value type** | Time Weighted Average (TWA): |
| | **mg/m³** | 0.1 |
| | **Remarks** | ACGIH |
| Copper, fume as Cu<br>1317-38-0 | **Value type** | Time Weighted Average (TWA): |
| | **mg/m³** | 0.2 |
| | **Remarks** | ACGIH |
| Copper, dusts and mists, as Cu<br>1317-38-0 | **Value type** | Time Weighted Average (TWA): |
| | **mg/m³** | 1 |
| | **Remarks** | ACGIH |
| MALEIC ANHYDRIDE, INHALABLE FRACTION AND VAPOR<br>108-31-6 | **Value type** | Time Weighted Average (TWA): |
| | **mg/m³** | 0.01 |
| | **Remarks** | ACGIH |
| MALEIC ANHYDRIDE<br>108-31-6 | **Value type** | Time Weighted Average (TWA): |
| | **ppm** | 0.25 |
| | **mg/m³** | 1 |
| | **Remarks** | SG OEL |

**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.

| | |
|---|---|
| **Body protection:** | Wear suitable protective clothing.<br>Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts. |
| **Engineering controls:** | Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product. |
| **General protection and hygiene measures:** | The workplace should be equipped with an emergency shower and eye-rinsing facility. |
| **Hygienic measures:** | Wash hands before work breaks and after finishing work.<br>Do not eat, drink or smoke while working.<br>Take off contaminated clothing and wash before reuse. |

## Section 9. Physical and chemical properties

| | |
|---|---|
| **Appearance:** | Gray / Grey<br>liquid |
| **Odor:** | Mild |
| **Odor threshold (CA):** | No data available. |
| **pH:** | Not applicable, Product is non-soluble (in water). |
| **Melting point / freezing point:** | Not applicable, Product is a liquid |
| **Specific gravity:** | No data available. |
| **Boiling point:** | No data available. |
| **Flash point:** | > 93 °C (> 199.4 °F) |
| **Evaporation rate:** | No data available. |
| **Flammability (solid, gas):** | No data available. |
| **Lower explosive limit:** | No data available. |
| **Upper explosive limit:** | No data available. |
| **Vapor pressure:** (; 20 °C (68 °F)) | < 0.1 hPa |
| **Vapor density:** | Heavier than air |
| **Density:** | 3.6 g/cm3 |
| **Solubility:** | Insoluble |
| **Partition coefficient: n-octanol/water:** | No data available. |
| **Auto ignition:** | Not available. |
| **Decomposition temperature:** | > 200 °C |
| **Viscosity:** | No data available. (; Method: no method / method unknown) |
| **VOC content:** (2010/75/EC) | < 3 % |

## Section 10. Stability and reactivity

| | |
|---|---|
| **Reactivity/Incompatible materials:** | Reacts with alcohols and amines.<br>Reacts with oxidants, acids and lyes<br>Reaction with some curing agents may produce an exothermic reaction which in large masses could cause runaway polymerization.<br>See section reactivity. |
| **Chemical stability:** | Stable under recommended storage conditions. |
| **Possibility of hazardous reactions:** | Rapid polymerization may generate excessive heat and pressure. |
| **Conditions to avoid:** | No decomposition if stored and applied as directed. |
| **Hazardous decomposition products:** | Hydrocarbons<br>carbon oxides.<br>nitrogen oxides |

## Section 11. Toxicological information

| | |
|---|---|
| **Oral toxicity:** | Acute toxicity estimate (ATE) : > 2,000 mg/kg<br>Method: Calculation method |

**Inhalative toxicity:** Acute toxicity estimate (ATE) : > 20 mg/l
Exposure time: 4 h
Test atmosphere: Vapor
Method: Calculation method

**Dermal toxicity:** Acute toxicity estimate (ATE) : > 2,000 mg/kg
Method: Calculation method

Symptoms of Overexposure**:** RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
SKIN: Rash, Urticaria.
Prolonged or repeated contact may cause skin irritation.
EYE: Irritation, conjunctivitis.
Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

**Acute oral toxicity:**

| | | |
|---|---|---|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Value type | LD50 |
| | Value | > 2,000 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 401 (Acute Oral Toxicity) |
| 2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane<br>39817-09-9 | Value type | LD50 |
| | Value | > 5,000 mg/kg |
| | Species | rat |
| | Method | |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | LD50 |
| | Value | 2,900 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 423 (Acute Oral toxicity) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Value type | LD50 |
| | Value | 2,800 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 401 (Acute Oral Toxicity) |
| Dodecyloxirane<br>3234-28-4 | Value type | LD50 |
| | Value | > 10,000 mg/kg |
| | Species | rat |
| | Method | not specified |
| hexahydro-4-methylphthalic anhydride<br>19438-60-9 | Value type | LD50 |
| | Value | > 2,000 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 423 (Acute Oral toxicity) |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Value type | LD50 |
| | Value | 1,118 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 401 (Acute Oral Toxicity) |
| maleic anhydride<br>108-31-6 | Value type | LD50 |
| | Value | 1,090 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 401 (Acute Oral Toxicity) |

**Acute inhalative toxicity:**

| | | |
|---|---|---|
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | LC50 |
| | Value | 5.3 mg/l |
| | Exposure time | 4 h |
| | Species | rat |
| | Method | not specified |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Value type | LC50 |
| | Value | 6.09 mg/l |
| | Exposure time | 4 h |
| | Species | rat |
| | Method | not specified |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Value type | Acute toxicity estimate (ATE) |
| | Value | 11.01 mg/l |
| | Exposure time | 4 h |
| | Species | |
| | Method | Expert judgement |

**Acute dermal toxicity:**

| | | |
|---|---|---|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Value type | LD50 |
| | Value | > 2,000 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane<br>39817-09-9 | Value type | LD50 |
| | Value | > 6,000 mg/kg |
| | Species | rabbit |
| | Method | |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | LD50 |
| | Value | 6,200 mg/kg |
| | Species | rabbit |
| | Method | OECD Guideline 402 (Acute Dermal Toxicity) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Value type | LD50 |
| | Value | > 2,000 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 402 (Acute Dermal Toxicity) |
| hexahydro-4-methylphthalic | Value type | LD50 |

| | | |
|---|---|---|
| anhydride<br>19438-60-9 | Value | > 2,000 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 402 (Acute Dermal Toxicity) |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Value type | LD50 |
| | Value | 1,130 mg/kg |
| | Species | rabbit |
| | Method | not specified |
| maleic anhydride<br>108-31-6 | Value type | LD50 |
| | Value | 2,620 mg/kg |
| | Species | rabbit |
| | Method | not specified |

**Skin corrosion/irritation:**

| | | |
|---|---|---|
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | not irritating |
| | Exposure time | |
| | Species | rabbit |
| | Method | other guideline: |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | not irritating |
| | Exposure time | 4 h |
| | Species | rabbit |
| | Method | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Dodecyloxirane<br>3234-28-4 | Result | irritating |
| | Exposure time | 4 h |
| | Species | rabbit |
| | Method | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| hexahydro-4-methylphthalic anhydride<br>19438-60-9 | Result | moderately irritating |
| | Exposure time | 24 h |
| | Species | rabbit |
| | Method | Expert judgement |
| maleic anhydride<br>108-31-6 | Result | highly irritating |
| | Exposure time | |
| | Species | rabbit |
| | Method | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |

**Serious eye damage/irritation:**

| | | |
|---|---|---|
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | irritating |
| | Exposure time | |
| | Species | rabbit |
| | Method | Evaluated according F.H.S.A.= Federal Hazardous Substance Act. |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | not irritating |
| | Exposure time | |
| | Species | rabbit |
| | Method | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Dodecyloxirane<br>3234-28-4 | Result | not irritating |
| | Exposure time | |
| | Species | rabbit |
| | Method | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Result | Category 1 (irreversible effects on the eye) |
| | Exposure time | |
| | Species | rabbit |
| | Method | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| maleic anhydride<br>108-31-6 | Result | corrosive |
| | Exposure time | |
| | Species | rabbit |
| | Method | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

**Respiratory or skin sensitization:**

| | | |
|---|---|---|
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | sensitising |
| | Test type | Guinea pig maximisation test |
| | Species | guinea pig |
| | Method | OECD Guideline 406 (Skin Sensitisation) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | sensitising |
| | Test type | Guinea pig maximisation test |
| | Species | guinea pig |
| | Method | OECD Guideline 406 (Skin Sensitisation) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | Sub-Category 1B (sensitising) |
| | Test type | |
| | Species | |
| | Method | Weight of evidence |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Result | sensitising |
| | Test type | Guinea pig maximisation test |
| | Species | guinea pig |
| | Method | OECD Guideline 406 (Skin Sensitisation) |
| maleic anhydride<br>108-31-6 | Result | sensitising |
| | Test type | Guinea pig maximisation test |
| | Species | guinea pig |
| | Method | OECD Guideline 406 (Skin Sensitisation) |

**Germ cell mutagenicity:**

| | | |
|---|---|---|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Result | negative |
| | Type of study / Route of administration | in vitro mammalian cell micronucleus test |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | negative |
| | Type of study / Route of administration | bacterial reverse mutation assay (e.g Ames test) |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | negative |
| | Type of study / Route of administration | in vitro mammalian chromosome aberration test |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | negative |
| | Type of study / Route of administration | mammalian cell gene mutation assay |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | positive |
| | Type of study / Route of administration | bacterial reverse mutation assay (e.g Ames test) |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | positive |
| | Type of study / Route of administration | intraperitoneal |
| | Metabolic activation / Exposure time | |
| | Species | mouse |
| | Method | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| hexahydro-4-methylphthalic anhydride<br>19438-60-9 | Result | negative |
| | Type of study / Route of administration | mammalian cell gene mutation assay |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |

| | | |
|---|---|---|
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Result | positive |
| | Type of study / Route of administration | bacterial reverse mutation assay (e.g Ames test) |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Result | positive |
| | Type of study / Route of administration | in vitro mammalian chromosome aberration test |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Result | positive |
| | Type of study / Route of administration | mammalian cell gene mutation assay |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Result | negative |
| | Type of study / Route of administration | oral: gavage |
| | Metabolic activation / Exposure time | |
| | Species | mouse |
| | Method | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| maleic anhydride 108-31-6 | Result | negative |
| | Type of study / Route of administration | bacterial reverse mutation assay (e.g Ames test) |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| maleic anhydride 108-31-6 | Result | negative |
| | Type of study / Route of administration | inhalation |
| | Metabolic activation / Exposure time | |
| | Species | rat |
| | Method | OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test) |

**Repeated dose toxicity:**

| | | |
|---|---|---|
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Result | NOAEL=50 mg/kg |
| | Route of application | oral: gavage |
| | Exposure time / Frequency of treatment | 28 days |
| | Species | rat |
| | Method | EPA Guideline |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Result | NOAEL=600 mg/kg |
| | Route of application | oral: gavage |
| | Exposure time / Frequency of treatment | 13 weeksdaily |
| | Species | rat |
| | Method | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Result | NOAEL=200 mg/kg |
| | Route of application | oral: gavage |
| | Exposure time / Frequency of treatment | 28 ddaily |
| | Species | rat |
| | Method | OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents) |
| maleic anhydride<br>108-31-6 | Result | NOAEL=40 mg/kg |
| | Route of application | oral: feed |
| | Exposure time / Frequency of treatment | 90 ddaily |
| | Species | rat |
| | Method | not specified |

## Section 12. Ecological information

**General ecological information:** Do not empty into drains / surface water / ground water.

**Ecotoxicity:** H410 Very toxic to aquatic life with long lasting effects.

**Toxicity:**

| | | |
|---|---|---|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Value type | LC50 |
| | Value | 0.0012 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | Pimephales promelas |
| | Method | other guideline: |
| | Value type | EC10 |
| | Value | 0.00019 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 217 d |
| | Species | Salmo trutta |

| | | |
|---|---|---|
| | Method | OECD Guideline 210 (fish early life stage toxicity test) |
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Value type | EC50 |
| | Value | 0.00022 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | other guideline: |
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Value type | EC10 |
| | Value | 0.00016 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 15 d |
| | Species | other: |
| | Method | other guideline: |
| 2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane<br>39817-09-9 | Value type | LC50 |
| | Value | > 1 - 10 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | not specified |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane<br>39817-09-9 | Value type | EC50 |
| | Value | > 1 - 10 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | LC50 |
| | Value | Toxicity > Water solubility |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | Oncorhynchus mykiss |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | EC50 |
| | Value | Toxicity > Water solubility |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | EC50 |
| | Value | Toxicity > Water solubility |
| | Acute Toxicity Study | Algae |
| | Exposure time | 96 h |
| | Species | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | Value type | NOEC |
| | Value | Toxicity > Water solubility |
| | Acute Toxicity Study | Algae |
| | Exposure time | 96 h |
| | Species | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | Value type | EC50 |
| | Value | Toxicity > Water solubility |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | 3 h |
| | Species | activated sludge, domestic |
| | Method | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Dodecyloxirane<br>3234-28-4 | Value type | LC50 |
| | Value | 1.11 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 14 d |
| | Species | Poecilia reticulata |
| | Method | not specified |
| Dodecyloxirane<br>3234-28-4 | Value type | EC50 |
| | Value | 0.171 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

| | | |
|---|---|---|
| Dodecyloxirane 3234-28-4 | Value type | EC50 |
| | Value | 0.00236 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | Value type | NOEC |
| | Value | 0.00165 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Dodecyloxirane 3234-28-4 | Value type | EC0 |
| | Value | 10,000 mg/l |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | 30 min |
| | Species | |
| | Method | not specified |
| hexahydro-4-methylphthalic anhydride 19438-60-9 | Value type | LC50 |
| | Value | > 100 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | Oncorhynchus mykiss |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| hexahydro-4-methylphthalic anhydride 19438-60-9 | Value type | EC50 |
| | Value | > 100 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| hexahydro-4-methylphthalic anhydride 19438-60-9 | Value type | EC50 |
| | Value | 135 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Pseudokirchneriella subcapitata |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | Value type | EC10 |
| | Value | 77.5 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Pseudokirchneriella subcapitata |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| hexahydro-4-methylphthalic anhydride 19438-60-9 | Value type | EC10 |
| | Value | 85 mg/l |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | 18 h |
| | Species | |
| | Method | not specified |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Value type | LC50 |
| | Value | 19.8 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | Danio rerio |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| | Value type | EC10 |
| | Value | 1.11 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 35 d |
| | Species | Danio rerio |
| | Method | OECD Guideline 210 (fish early life stage toxicity test) |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Value type | EC50 |
| | Value | 75 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 24 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Value type | EC50 |
| | Value | > 160 mg/l |

| | | |
|---|---|---|
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | Value type | NOELR |
| | Value | 40 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 1,4-bis(2,3 epoxypropoxy)butane 2425-79-8 | Value type | IC50 |
| | Value | > 100 mg/l |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | 3 h |
| | Species | activated sludge |
| | Method | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| maleic anhydride 108-31-6 | Value type | LC50 |
| | Value | 75 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | Lepomis macrochirus |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| maleic anhydride 108-31-6 | Value type | EC50 |
| | Value | 77 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| maleic anhydride 108-31-6 | Value type | EC50 |
| | Value | 29 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | Value type | EC10 |
| | Value | 23 mg/l |
| | Acute Toxicity Study | Algae |
| | Exposure time | 72 h |
| | Species | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) |
| | Method | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| maleic anhydride 108-31-6 | Value type | EC10 |
| | Value | 44.6 mg/l |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | |
| | Species | Pseudomonas putida |
| | Method | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |

**Persistence and degradability:**

| | | |
|---|---|---|
| 2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane 39817-09-9 | Result | not readily biodegradable. |
| | Route of application | aerobic |
| | Degradability | < 10 % |
| | Method | OECD 301 A - F |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7 | Result | not readily biodegradable. |
| | Route of application | aerobic |
| | Degradability | 9.9 % |
| | Method | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |
| A mixture of: 4-allyl-2,6-bis (2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-[6-[3-(4-allyl- | Result | |
| | Route of application | |
| | Degradability | 7 % |

| | | |
|---|---|---|
| 2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-2-(2,3-epoxypropyl)phenol; 4-allyl-6-[3-[6-[3-(4-allyl-2,6-bis(2,3-epoxypropyl)phenoxy)-2-hydroxypropyl]-4-allyl-2-(2,3-epoxypropyl)phenoxy]-2-hydroxy-propyl]-2-(2,3-epoxypropyl)phenol | Method | not specified |
| Dodecyloxirane<br>3234-28-4 | Result | not readily biodegradable. |
| | Route of application | aerobic |
| | Degradability | 60 - 70 % |
| | Method | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| hexahydro-4-methylphthalic anhydride<br>19438-60-9 | Result | not readily biodegradable. |
| | Route of application | aerobic |
| | Degradability | 2 % |
| | Method | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | Result | not readily biodegradable. |
| | Route of application | aerobic |
| | Degradability | 38 % |
| | Method | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |
| | Result | inherently biodegradable |
| | Route of application | aerobic |
| | Degradability | 98 % |
| | Method | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| maleic anhydride<br>108-31-6 | Result | readily biodegradable |
| | Route of application | aerobic |
| | Degradability | 98 % |
| | Method | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |

**Bioaccumulative potential / Mobility in soil:**

| | | |
|---|---|---|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment<br>7440-22-4 | Bioconcentration factor (BCF) | 70 |
| | Exposure time | 42 d |
| | Species | Cyprinus carpio |
| | Temperature | 20 °C |
| | Method | other guideline: |
| Dihydro-3-(tetrapropenyl)furan-2,5-dione<br>26544-38-7 | LogPow | 4.39 |
| | Temperature | 22 °C |
| | Method | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Dodecyloxirane<br>3234-28-4 | LogPow | 5.77 |
| | Temperature | 25 °C |
| | Method | QSAR (Quantitative Structure Activity Relationship) |
| hexahydro-4-methylphthalic anhydride<br>19438-60-9 | LogPow | 2.09 |
| | Temperature | 40 °C |
| | Method | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| 1,4-bis(2,3 epoxypropoxy)butane<br>2425-79-8 | LogPow | -0.269 |
| | Temperature | 25 °C |
| | Method | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| maleic anhydride<br>108-31-6 | LogPow | -2.61 |
| | Temperature | 19.8 °C |
| | Method | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |

## Section 13. Disposal considerations

**Product**

**Method of disposal:** Dispose of in accordance with local and national regulations.

**Packaging**

**Disposal of uncleaned packages:** Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

## Section 14. Transport information

**Road transport ADR:**

| | |
|---|---|
| Class: | 9 |
| Packing group: | III |
| Classification code: | M7 |
| Hazard ident. number: | 90 |
| UN no.: | 3077 |
| Label: | 9 |
| Technical name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver) |

**Railroad transport RID:**

| | |
|---|---|
| Class: | 9 |
| Packing group: | III |
| Classification code: | M7 |
| Hazard ident. number: | 90 |
| UN no.: | 3077 |
| Label: | 9 |
| Technical name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver) |

**Inland water transport ADN:**

| | |
|---|---|
| Class: | 9 |
| Packing group: | III |
| Classification code: | M7 |
| Hazard ident. number: | 90 |
| UN no.: | 3077 |
| Label: | 9 |
| Technical name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver) |

**Marine transport IMDG:**

| | |
|---|---|
| Class: | 9 |
| Packing group: | III |
| UN no.: | 3077 |
| Label: | 9 |
| EmS: | F-A ,S-F |
| Seawater pollutant: | Marine pollutant |
| Proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver) |

**Air transport IATA:**

| | |
|---|---|
| Class: | 9 |
| Packing group: | III |
| Packaging instructions (passenger): | 956 |
| Packaging instructions (cargo): | 956 |
| UN no.: | 3077 |
| Label: | 9 |
| Proper shipping name: | Environmentally hazardous substance, solid, n.o.s. (Silver) |

**Further information for transport:**

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), A197 (IATA), 2.10.2.7 (IMDG), NZ 4.3(10) may be applied, which can result in a deviation from the transport classification for packed goods.

## Section 15. Regulatory information

**Regulatory Information:** Workplace Safety And Health Act (Chapter 354A, Section 40B) Workplace Safety And Health (Approved Codes of Practice) Notification 2020.
Workplace Safety And Health Act (Chapter 354A, Section 65) Workplace Safety And Health (General Provisions) (Amendment No.2) Regulations 2024

**Global inventory status:**

| | |
|---|---|
| Regulatory list | Notification |
| IECSC | yes |

## Section 16. Other information

**Disclaimer:** This Safety Data Sheet has been generated based on Workplace Safety And Health Act (Chapter 354A, Section 40B) Workplace Safety And Health (Approved Codes of Practice) Notification 2020 and Workplace Safety And Health Act (Chapter 354A, Section 65) Workplace Safety And Health (General Provisions) (Amendment No.2) Regulations 2024 only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.
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