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



SDS No. : 153932
V004.0

LOCTITE MF R301 known as FLUX MFR301 20L

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Replaces version from: 16.10.2013

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

**1.1. Product identifier**
LOCTITE MF R301 known as FLUX MFR301 20L

**Contains:**
Propan-2-ol
Hydrocarbon aliphatic aromatic naphthenic C9-12
Rosin

**1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use:
Liquid Flux

**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@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):**

| | |
|---|---|
| Flammable liquids | Category 2 |
| H225 Highly flammable liquid and vapor. | |
| 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 |
| H336 May cause drowsiness or dizziness. | |
| Target organ: Central Nervous System | |
| Specific target organ toxicity - repeated exposure | Category 1 |
| H372 Causes damage to organs through prolonged or repeated exposure. | |
| Aspiration hazard | Category 1 |
| H304 May be fatal if swallowed and enters airways. | |
| Chronic hazards to the aquatic environment | Category 3 |
| H412 Harmful to aquatic life with long lasting effects. | |

**2.2. Label elements**

**Label elements (CLP):**

**Hazard pictogram:**

**Signal word:** Danger

**Hazard statement:**
H225 Highly flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

**Precautionary statement: Prevention**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing vapours.
P273 Avoid release to the environment.
P280 Wear protective gloves.

**Precautionary statement: Response**
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P331 Do NOT induce vomiting.
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**
Fumes evolved at soldering temperatures will irritate the nose, throat and lungs. Prolonged or repeated exposure to flux fumes may result in sensitisation in sensitive workers.
Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

## SECTION 3: Composition/information on ingredients

**3.2. Mixtures**

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

| Hazardous components<br>CAS-No. | EC Number<br>REACH-Reg No. | content | Classification |
|---|---|---|---|
| Propan-2-ol<br>67-63-0 | 200-661-7<br>01-2119457558-25 | 50- 100 % | Flam. Liq. 2<br>H225<br>Eye Irrit. 2<br>H319<br>STOT SE 3<br>H336 |
| Hydrocarbon aliphatic aromatic naphthenic C9-12<br>64742-88-7 | 265-191-7 | 10- 20 % | Asp. Tox. 1<br>H304<br>STOT RE 1<br>H372<br>Aquatic Chronic 2<br>H411 |
| Glutaric acid<br>110-94-1 | 203-817-2 | 1- < 5 % | Eye Irrit. 2<br>H319 |
| Rosin<br>8050-09-7 | 232-475-7<br>01-2119480418-32 | 1- < 5 % | Skin Sens. 1<br>H317 |
| Adipic acid<br>124-04-9 | 204-673-3<br>01-2119457561-38 | 1- < 5 % | Eye Irrit. 2<br>H319 |
| Dodecylamine<br>124-22-1 | 204-690-6 | 0,01- < 0,1 % | Skin Corr. 1A<br>H314<br>Aquatic Chronic 2<br>H411<br>STOT SE 3<br>H335<br>STOT RE 2<br>H373<br>M factor (Acute 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.
Seek medical advice.

Eye contact:
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical advice.

Ingestion:
Do not induce vomiting.
Seek medical advice.

**4.2. Most important symptoms and effects, both acute and delayed**
SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

ASPIRATION: Coughing, shortness of breath, nausea. Delayed effect: bronchopneumonia or pulmonary oedema

Vapors may cause drowsiness and dizziness.

Flux fumes may irritate the nose, throat and lungs and may after prolonged/repeated exposure give an allergic reaction (asthma).

**4.3. Indication of any immediate medical attention and special treatment needed**
See section: Description of first aid measures
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.
Do not induce vomiting.
Seek medical attention from a specialist.

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**
**Suitable extinguishing media:**
Alcohol-resistant foam.
Carbon dioxide, foam, powder

**5.2. Special hazards arising from the substance or mixture**
Can form explosive gas/air mixtures.
Oxides of carbon.
Thermal decomposition can lead to release of irritating gases and vapors.

**5.3. Advice for firefighters**
Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Avoid contact with skin and eyes.
Wear protective equipment.

**6.2. Environmental precautions**
Do not let product enter drains.
Prevent further leakage or spillage if safe to do so.

**6.3. Methods and material for containment and cleaning up**
Remove all sources of ignition.
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.

**6.4. Reference to other sections**
See advice in section 8

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**
Use only in well-ventilated areas.
Keep away from sources of ignition - no smoking.
Wear suitable protective clothing, safety glasses and gloves.
See advice in section 8
Take measures to prevent the build-up of electrostatic charges.

Hygiene measures:
Good industrial hygiene practices should be observed.
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.

**7.2. Conditions for safe storage, including any incompatibilities**
Store in a cool, well-ventilated place.
Keep away from sources of ignition.

**7.3. Specific end use(s)**
Liquid Flux

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Occupational Exposure Limits**

Valid for
Great Britain

| Ingredient [Regulated substance] | ppm | mg/m³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|---|---|---|---|---|
| Propan-2-ol<br>67-63-0<br>[PROPAN-2-OL] | 500 | 1.250 | Short Term Exposure Limit (STEL): | | EH40 WEL |
| Propan-2-ol<br>67-63-0<br>[PROPAN-2-OL] | 400 | 999 | Time Weighted Average (TWA): | | EH40 WEL |
| Rosin<br>8050-09-7<br>[ROSIN-BASED SOLDER FLUX FUME] | | 0,05 | Time Weighted Average (TWA): | | EH40 WEL |
| Rosin<br>8050-09-7<br>[ROSIN-BASED SOLDER FLUX FUME] | | 0,15 | Short Term Exposure Limit (STEL): | | EH40 WEL |

**Occupational Exposure Limits**

Valid for
Ireland

| Ingredient [Regulated substance] | ppm | mg/m³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|---|---|---|---|---|
| Propan-2-ol<br>67-63-0<br>[ISOPROPYL ALCOHOL] | 400 | | Short Term Exposure Limit (STEL): | | IR_OEL |
| Propan-2-ol<br>67-63-0<br>[ISOPROPYL ALCOHOL] | 200 | | Time Weighted Average (TWA): | | IR_OEL |
| Propan-2-ol<br>67-63-0<br>[ISOPROPYL ALCOHOL] | | | Skin designation: | Can be absorbed through the skin. | IR_OEL |
| Rosin<br>8050-09-7<br>[ROSIN CORE SOLDER PYROLYSIS PRODUCTS (AS AIRBORNE TOTAL RESIN ACID)] | | 0,05 | Time Weighted Average (TWA): | | IR_OEL |
| Rosin<br>8050-09-7<br>[ROSIN CORE SOLDER PYROLYSIS PRODUCTS (AS AIRBORNE TOTAL RESIN ACID)] | | 0,15 | Short Term Exposure Limit (STEL): | | IR_OEL |
| Adipic acid<br>124-04-9<br>[ADIPIC ACID] | | 5 | Time Weighted Average (TWA): | | IR_OEL |

**Biological Exposure Indices:**
None

**8.2. Exposure controls:**

Engineering controls:
Ensure adequate ventilation, especially in confined areas.
Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.
Extraction is necessary to remove fumes evolved during reflow.

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<br>Pale yellow |
| Odor | hydrocarbons |
| Odour threshold | No data available / Not applicable |
| pH | No data available / Not applicable |
| Initial boiling point | 82,0 °C (179.6 °F) |
| Flash point | 14 °C (57.2 °F) |
| Decomposition temperature | No data available / Not applicable |
| Vapour pressure<br>(25 °C (77 °F)) | 66 mbar |
| Density<br>(25,0 °C (77 °F)) | 0,8010 g/cm3 |
| Bulk density | 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 |
| Solubility (qualitative) (Solvent: Water) | Soluble |
| Solidification temperature | No data available / Not applicable |
| Melting point | Not determined |
| Flammability | No data available / Not applicable |
| Auto-ignition temperature | No data available / Not applicable |
| Explosive limits | |
| lower | 2 %(V) |
| upper | 12 %(V) |
| Partition coefficient: n-octanol/water | Not determined |
| Evaporation rate | No data available / Not applicable |
| Vapor density | Heavier than air |
| Oxidising properties | No data available / Not applicable |

**9.2. Other information**

No data available / Not applicable

## SECTION 10: Stability and reactivity

**10.1. Reactivity**
Reaction with strong oxidants.
Dissolves aluminium and zinc slowly with formation of hydrogen.

**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 stored and applied as directed.

**10.5. Incompatible materials**
None if used properly.

**10.6. Hazardous decomposition products**
Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 11: Toxicological information

**11.1. Information on toxicological effects**

**General toxicological information:**
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**STOT-single exposure:**
May cause drowsiness or dizziness.

**STOT-repeated exposure:**
Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard:**
May be fatal if swallowed and enters airways.

**Oral toxicity:**
May cause irritation to the digestive tract.
Ingestion of large quantities may cause liver or kidney damage.
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

**Inhalative toxicity:**
Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Fumes evolved at soldering temperatures will irritate the nose, throat and lungs.

**Skin irritation:**
Prolonged or repeated contact may cause skin irritation.

**Eye irritation:**
Irritating to eyes.
Liquid may cause conjunctival irritation.

**Sensitizing:**
May cause sensitization by skin contact.

**Acute oral toxicity:**

| Hazardous components<br>CAS-No. | Value type | Value | Route of application | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Propan-2-ol<br>67-63-0 | LD50 | 5.840 mg/kg | oral | | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| Rosin<br>8050-09-7 | LD50 | 2.800 mg/kg | oral | | rat | |
| Adipic acid<br>124-04-9 | LD50 | 5.560 mg/kg | oral | | rat | |

**Acute inhalative toxicity:**

| Hazardous components<br>CAS-No. | Value type | Value | Route of application | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Propan-2-ol<br>67-63-0 | LC50 | 72,6 mg/l | | 4 h | rat | |
| Adipic acid<br>124-04-9 | LC50 | > 7,7 mg/l | | 4 h | rat | |

**Acute dermal toxicity:**

| Hazardous components<br>CAS-No. | Value type | Value | Route of application | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Propan-2-ol<br>67-63-0 | LD50 | 12.870 mg/kg | dermal | | rabbit | |
| Rosin<br>8050-09-7 | LD50 | > 2.000 mg/kg | dermal | | rat | OECD Guideline 402 (Acute Dermal Toxicity) |

**Skin corrosion/irritation:**

| Hazardous components<br>CAS-No. | Result | Exposure time | Species | Method |
|---|---|---|---|---|
| Propan-2-ol<br>67-63-0 | slightly irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12<br>64742-88-7 | slightly irritating | | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Rosin<br>8050-09-7 | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Adipic acid<br>124-04-9 | slightly irritating | | rabbit | |

**Serious eye damage/irritation:**

| Hazardous components CAS-No. | Result | Exposure time | Species | Method |
|---|---|---|---|---|
| Propan-2-ol 67-63-0 | moderately irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | not irritating | | rabbit | Draize Test |
| Rosin 8050-09-7 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Adipic acid 124-04-9 | moderately irritating | | rabbit | |

**Respiratory or skin sensitization:**

| Hazardous components CAS-No. | Result | Test type | Species | Method |
|---|---|---|---|---|
| Propan-2-ol 67-63-0 | not sensitising | Buehler test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| Adipic acid 124-04-9 | not sensitising | | guinea pig | |

**Germ cell mutagenicity:**

| Hazardous components CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|---|---|---|---|---|---|
| Propan-2-ol 67-63-0 | negative with metabolic activation | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Propan-2-ol 67-63-0 | negative | intraperitoneal | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | |
| Rosin 8050-09-7 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Adipic acid 124-04-9 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | |

**Carcinogenicity:**

| Hazardous components CAS-No. | Result | Species | Sex | Exposure timeFrequency of treatment | Route of application | Method |
|---|---|---|---|---|---|---|
| Propan-2-ol 67-63-0 | | rat | male/female | 104 w 6 h/d, 5 d/w | inhalation: vapour | OECD Guideline 451 (Carcinogenicity Studies) |

**Reproductive toxicity:**

| Hazardous substances CAS-No. | Result / Classification | Species | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Propan-2-ol 67-63-0 | NOAEL P = 853 mg/kg | One generation study oral: drinking water | | rat | OECD Guideline 415 (One-Generation Reproduction Toxicity Study) |
| | NOAEL P = 500 mg/kg NOAEL F1 = 1.000 mg/kg | Two generation study oral: gavage | | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |

**Repeated dose toxicity**

| Hazardous components CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Method |
|---|---|---|---|---|---|
| Propan-2-ol 67-63-0 | | inhalation: vapour | at least 104 w6 h/d, 5 d/w | rat | |

## SECTION 12: Ecological information

**General ecological information:**
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**12.1. Toxicity**

**Ecotoxicity:**
Do not empty into drains / surface water / ground water.
Harmful to aquatic life with long lasting effects.

| Hazardous components CAS-No. | Value type | Value | Acute Toxicity Study | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Propan-2-ol 67-63-0 | LC50 | > 9.640 - 10.000 mg/l | Fish | 96 h | Pimephales promelas | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Propan-2-ol 67-63-0 | EC50 | > 1.000 mg/l | Algae | 96 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | NOEC | 1.000 mg/l | Algae | 96 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Propan-2-ol 67-63-0 | EC 50 | > 1.000 mg/l | Bacteria | 3 h | | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Propan-2-ol 67-63-0 | NOEC | 30 mg/l | chronic Daphnia | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | LC50 | > 2 - 5 mg/l | Fish | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | EC50 | 1,4 mg/l | Daphnia | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | EC50 | 4,1 mg/l | Algae | 96 h | Pseudokirchnerella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | NOEC | 0,76 mg/l | Algae | 96 h | Pseudokirchnerella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | EC0 | 1.000 mg/l | Bacteria | 30 min | | |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | NOEC | 0,48 mg/l | chronic Daphnia | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Glutaric acid 110-94-1 | LC50 | 330 mg/l | Fish | 24 h | Lepomis macrochirus | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Rosin 8050-09-7 | LC50 | > 1.000 mg/l | Fish | 96 h | Pimephales promelas | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Rosin 8050-09-7 | EC50 | 911 mg/l | Daphnia | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Rosin 8050-09-7 | EC50 | > 100 mg/l | Algae | 72 h | Scenedesmus subspicatus (new name: Desmodesmus subspicatus) | DIN 38412-09 |
| Adipic acid 124-04-9 | LC50 | 97 mg/l | Fish | 96 h | Pimephales promelas | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Adipic acid 124-04-9 | EC50 | 85,7 mg/l | Daphnia | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Adipic acid 124-04-9 | EC50 | > 100 mg/l | Algae | | | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | EC0 | > 100 mg/l | Algae | | | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Adipic acid 124-04-9 | EC0 | 10.000 mg/l | Bacteria | 16 h | | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |
| Dodecylamine 124-22-1 | LC50 | 0,42 mg/l | Fish | 96 h | Brachydanio rerio (new name: Danio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Dodecylamine 124-22-1 | EC50 | 0,05 mg/l | Algae | 72 h | Pseudokirchnerella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| | EC10 | 0,02 mg/l | Algae | 72 h | Pseudokirchnerella subcapitata | OECD Guideline |

| | | | | | | |
|---|---|---|---|---|---|---|
| Dodecylamine 124-22-1 | EC 50 | 28 mg/l | Bacteria | | | 201 (Alga, Growth Inhibition Test) OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Dodecylamine 124-22-1 | NOEC | 0,013 mg/l | chronic Daphnia | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |

**12.2. Persistence and degradability**

**Persistence and Biodegradability:**
No data available for the product.

| Hazardous components CAS-No. | Result | Route of application | Degradability | Method |
|---|---|---|---|---|
| Propan-2-ol 67-63-0 | readily biodegradable | aerobic | 70 - 84 % | EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test) |
| Hydrocarbon aliphatic aromatic naphthenic C9-12 64742-88-7 | | aerobic | 55 - 63 % | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| Glutaric acid 110-94-1 | inherently biodegradable | aerobic | 90 - 100 % | OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test) |
| | readily biodegradable | | 100 % | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |
| Rosin 8050-09-7 | | aerobic | 36 - 46 % | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| Adipic acid 124-04-9 | inherently biodegradable | no data | 100 % | OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test) |
| | readily biodegradable | no data | 96 % | OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test) |
| Dodecylamine 124-22-1 | readily biodegradable | aerobic | > 60 % | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |

**12.3. Bioaccumulative potential / 12.4. Mobility in soil**

**Mobility:**
The product evaporates readily.

**Bioaccumulative potential:**
Octanol/Water distribution coefficient: Not determined

| Hazardous components CAS-No. | LogKow | Bioconcentration factor (BCF) | Exposure time | Species | Temperature | Method |
|---|---|---|---|---|---|---|
| Propan-2-ol 67-63-0 | 0,05 | | | | | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Glutaric acid 110-94-1 | -0,29 | | | | | |
| Rosin 8050-09-7 | 3 - 6,2 | | | | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| Adipic acid 124-04-9 | 0,081 | | | | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |

**12.5. Results of PBT and vPvB assessment**

| Hazardous components CAS-No. | PBT/vPvB |
|---|---|

| | |
|---|---|
| Propan-2-ol<br>67-63-0 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Rosin<br>8050-09-7 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Adipic acid<br>124-04-9 | 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 as hazardous waste in compliance with local and national regulations.
Incineration under controlled conditions is recommended.

Disposal of uncleaned packages:
Dispose of as unused product.

Waste code

14 06 03 - other solvents and solvent mixtures
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 | 1993 |
| RID | 1993 |
| ADN | 1993 |
| IMDG | 1993 |
| IATA | 1993 |

**14.2. UN proper shipping name**

| | |
|---|---|
| ADR | FLAMMABLE LIQUID, N.O.S. (Isopropanol,Naphtha) |
| RID | FLAMMABLE LIQUID, N.O.S. (Isopropanol,Naphtha) |
| ADN | FLAMMABLE LIQUID, N.O.S. (Isopropanol,Naphtha) |
| IMDG | FLAMMABLE LIQUID, N.O.S. (Isopropanol,Naphtha) |
| IATA | Flammable liquid, n.o.s. (Isopropanol,Naphtha) |

**14.3. Transport hazard class(es)**

| | |
|---|---|
| ADR | 3 |
| RID | 3 |
| ADN | 3 |
| IMDG | 3 |
| IATA | 3 |

**14.4. Packing group**

| | |
|---|---|
| ADR | II |
| RID | II |
| ADN | II |
| IMDG | II |
| IATA | II |

**14.5. Environmental hazards**

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

**14.6. Special precautions for user**

| | |
|---|---|
| ADR | Special provision 640D<br>Tunnelcode: (D/E) |
| RID | Special provision 640D |
| ADN | Special provision 640D |
| IMDG | not applicable |
| IATA | not applicable |

**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 90 - 95 %

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

**National regulations/information (Great Britain):**

| | |
|---|---|
| Remarks | The Health & Safety at Work Act 1974.<br>The Control of Substances Hazardous to Health Regulations. L5:General Approved Code of Practice to the COSHH Regulations. HS(G)97:A Step by Step Guide to the COSHH Regulations. HS(G)193:COSHH essentials: Easy steps to control chemicals.<br>IND (G)248L:Solder fume and you. IND(G)249L:Controlling health risks from rosin (colophony) based solder fluxes.<br>HS(G)51:The Storage of Highly Flammable Liquids in Containers.<br>HS(G)140:The Safe Use and Handling of Highly Flammable Liquids EH9:The Spraying of Highly Flammable Liquids. |

## 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:

H225 Highly flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

**Further information:**
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.

**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.**