# Safety data sheet



Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)
Date / Revised: 03.08.2023 Version: 2.0
Product: **Luprosil®**

(ID no. 30041113/SDS_GEN_ZA/EN)
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## 1. Identification

### Product identifier

## Luprosil®

Chemical name: propionic acid
CAS Number: 79-09-4

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

Relevant identified uses: feed additive(s)

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

Company:

### Emergency telephone number

National emergency number:
+27 11 203 2420
International emergency number:
Telephone: +49 180 2273-112

## 2. Hazards Identification

### Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 3
Acute Tox. 5 (oral)
Acute Tox. 5 (dermal)
Skin Corr./Irrit. 1B
Eye Dam./Irrit. 1

STOT SE 3 (irritating to respiratory system)

Specific Concentration Limits According to UN GHS Criteria

STOT SE 3, irr. to respiratory syst.: >= 10 %
Skin Corr./Irrit. 2: 10 - < 25 %
Eye Dam./Irrit. 2: 10 - < 25 %
Skin Corr./Irrit. 1B: >= 25 %

For the classifications not written out in full in this section the full text can be found in section 16.

## Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Danger

Hazard Statement:

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H313 | May be harmful in contact with skin. |
| H303 | May be harmful if swallowed. |
| H335 | May cause respiratory irritation. |
| H314 | Causes severe skin burns and eye damage. |

Precautionary Statements (Prevention):

| | |
|---|---|
| P280 | Wear protective gloves, protective clothing and eye protection or face protection. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P243 | Take action to prevent static discharges. |
| P260 | Do not breathe dust or mist. |
| P241 | Use explosion-proof electrical, ventilating and lighting equipment. |
| P264 | Wash contaminated body parts thoroughly after handling. |
| P240 | Ground and bond container and receiving equipment. |
| P242 | Use non-sparking tools. |

Precautionary Statements (Response):

| | |
|---|---|
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTER or physician. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P301 + P330 + P331 | IF SWALLOWED: rinse mouth. Do NOT induce vomiting. |
| P370 + P378 | In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction. |

Precautionary Statements (Storage):

| | |
|---|---|
| P233 | Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |

Precautionary Statements (Disposal):

| | |
|---|---|
| P501 | Dispose of contents and container to hazardous or special waste collection point. |

According to UN GHS criteria

Hazard determining component(s) for labelling: propionic acid

### Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

## 3. Composition/Information on Ingredients

### Substances

Chemical nature

carboxylic acid

Hazardous ingredients (GHS)
According to UN GHS criteria

propionic acid

| | |
|---|---|
| Content (W/W): >= 99.5 % - <= 100 %<br>CAS Number: 79-09-4 | Flam. Liq. 3<br>Acute Tox. 5 (oral)<br>Acute Tox. 5 (dermal)<br>Skin Corr./Irrit. 1B<br>Eye Dam./Irrit. 1<br>STOT SE 3 (irr. to respiratory syst.)<br>H226, H335, H314, H303 + H313<br><br>Specific concentration limit:<br>Eye Dam./Irrit. 2: 10 - < 25 %<br>Skin Corr./Irrit. 1B: >= 25 %<br>Skin Corr./Irrit. 2: 10 - < 25 %<br>STOT SE 3, irr. to respiratory syst.: >= 10 % |

Acetic acid

| | |
|---|---|
| Content (W/W): >= 0 % - <= 0.2 %<br>CAS Number: 64-19-7<br>EC-Number: 200-580-7<br>INDEX-Number: 607-002-00-6 | Flam. Liq. 3<br>Skin Corr./Irrit. 1A<br>Eye Dam./Irrit. 1<br>H226, H314<br><br>Specific concentration limit:<br>Skin Corr./Irrit. 2: 10 - < 25 %<br>Eye Dam./Irrit. 2: 10 - < 25 %<br>Skin Corr./Irrit. 1A: >= 90 %<br>Skin Corr./Irrit. 1B: 25 - < 90 % |

For the classifications not written out in full in this section the full text can be found in section 16.

### Mixtures

Not applicable

## 4. First-Aid Measures

### Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:
Immediately administer a corticosteroid from a controlled/metered dose inhaler. Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

## 5. Fire-Fighting Measures

### Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

### Special hazards arising from the substance or mixture

carbon oxides, nitrogen oxides
The substances/groups of substances mentioned can be released in case of fire.

### Advice for fire-fighters

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

## 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: wear a tightly closed chemical protection suit and a self-contained breathing apparatus. Wear acid-resistant boots.

### Environmental precautions

Do not empty into drains.

### Methods and material for containment and cleaning up

For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.

## 7. Handling and Storage

### Precautions for safe handling

Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Change clothes immediately after contamination.

Protection against fire and explosion:
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

### Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances.
Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place.

Storage stability:
Storage temperature: < 30 °C
Storage duration: <= 36 Months
From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

### Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

## 8. Exposure Controls/Personal Protection

### Control parameters

Components with occupational exposure limits

64-19-7: Acetic acid
STEL value 30 ppm
TWA value 20 ppm

### Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
butyl rubber (butyl) - 0.7 mm coating thickness
Suitable materials for short-term contact (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN ISO 374-1)
nitrile rubber (NBR) - 0.4 mm coating thickness
chloroprene rubber (CR) - 0.5 mm coating thickness

Eye protection:
Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection:
acid-proof chemical protection suit (f.e. according to EN 14605)

General safety and hygiene measures

Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Avoid contact with skin and eyes. Take off immediately all contaminated clothing.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

| | | |
|---|---|---|
| Form: | liquid | |
| Colour: | colourless | |
| Odour: | pungent | |
| Odour threshold: | not determined | |
| pH value: | 2.5<br>(100 g/l, 20 °C)<br>Literature data. | |
| Melting point: | -20 °C | |
| Boiling point: | 140.7 - 141.6 °C | |
| Flash point: | 53 °C | (ISO 13736, closed cup) |
| Evaporation rate: | Value can be approximated from Henry's Law Constant or vapor pressure. | |
| Flammability: | Flammable liquid and vapour. | (derived from flash point) |
| Lower explosion limit: | For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point. | |
| Upper explosion limit: | For liquids not relevant for classification and labelling. | |
| Ignition temperature: | 485 °C | (DIN 51794) |
| Vapour pressure: | 5 mbar<br>(20 °C)<br>approx. 23 hPa<br>(50 °C) | |
| Density: | 0.993 g/cm3<br>(20 °C)<br>Literature data.<br>0.957 g/cm3<br>(55 °C)<br>Literature data.<br>0.9990 g/cm3<br>(15 °C)<br>0.9610 g/cm3<br>(50 °C) | |
| Relative vapour density (air): | > 1<br>(20 °C)<br>Heavier than air. | (estimated) |
| Solubility in water: | miscible<br>(20 °C) | |
| Partitioning coefficient n-octanol/water (log Kow): | 0.25<br>(25 °C)<br>0.33 | <br><br>(Calculation Hansch/Leo) |

| | | |
|---|---|---|
| Self ignition: | Based on its structural properties the product is not classified as self-igniting. | Test type: Spontaneous self-ignition at room-temperature. |
| Thermal decomposition: | not determined | |
| Viscosity, dynamic: | 1.102 mPa.s<br>(20 °C)<br>Literature data. | |
| Fire promoting properties: | Based on its structural properties the product is not classified as oxidizing. | |

### Other information

| | | |
|---|---|---|
| Self heating ability: | not applicable, the product is a liquid | |
| SADT: | Not a substance/mixture liable to self-decomposition according to GHS. | |
| pKA: | 4.87<br>(20 °C) | |
| Adsorption/water - soil: | KOC: 1.201; log KOC: 0.08<br>The data refer to the uncharged form of the substance. Under environmental conditions, the substance will almost completely be in its charged form. | (calculated) |
| Surface tension: | Based on chemical structure, surface activity is not to be expected. | |
| Grain size distribution: | Test substance | The substance / product is marketed or used in a non solid or granular form. |
| Molar mass: | 74.08 g/mol | |

## 10. Stability and Reactivity

### Reactivity

| | | |
|---|---|---|
| Corrosion to metals: | Corrosive effects to metal are not anticipated. In the presence of water or moisture metal corrosion cannot be excluded. | |
| Formation of flammable gases: | Remarks: | Forms no flammable gases in the presence of water. |

### Chemical stability
The product is chemically stable.

### Possibility of hazardous reactions
Reacts with strong alkalies. Exothermic reaction.

### Conditions to avoid
No conditions to avoid anticipated.

### Incompatible materials

Substances to avoid:
bases, non-coated metals, base metals

### Hazardous decomposition products

:
No hazardous decomposition products known.

## 11. Toxicological Information

### Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Of low toxicity after short-term skin contact. Inhalation-risk test (IRT): No mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard.

Experimental/calculated data:
LD50 rat (oral): 3,455 mg/kg (similar to OECD guideline 401)

LC50 rat (by inhalation): > 19.7 mg/l 1 h (OECD Guideline 403)
The vapour was tested.

LC0 rat (by inhalation): 24.4 mg/l 8 h (IRT)
Literature data. No mortality within the stated exposition time as shown in animal studies. The vapour was tested.

LD50 rat (dermal): 3,235 mg/kg (similar to OECD guideline 402)

Irritation

Assessment of irritating effects:
Corrosive! Damages skin and eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Corrosive. (BASF-Test)

Serious eye damage/irritation rabbit: irreversible damage (Draize test)
Literature data.

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (similar to OECD guideline 406)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in studies with mammals. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
In long-term animal studies in which the substance was given in high concentrations by feed, a carcinogenic effect was not observed.

Reproductive toxicity

Assessment of reproduction toxicity:
No data available. Study scientifically not justified.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Causes temporary irritation of the respiratory tract.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
No substance-specific organtoxicity was observed after repeated administration to animals. After repeated administration the prominent effect is the induction of corrosion.

Aspiration hazard

No aspiration hazard expected.

## 12. Ecological Information

### Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) > 10,000 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aquatic invertebrates:
EC50 (48 h) > 500 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aquatic plants:
EC50 (72 h) > 500 mg/l (biomass), Scenedesmus subspicatus (OECD Guideline 201, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Microorganisms/Effect on activated sludge:
EC20 (30 min) 500 - 1,040 mg/l, activated sludge, domestic (DIN EN ISO 8192, aquatic)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to fish:
Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:
Study scientifically not justified.

Assessment of terrestrial toxicity:
Toxic effects have been observed in studies with terrestric plants.

Soil living organisms:
No data available.

Terrestrial plants:
EC50 (3 d) 125.8 mg/l 188.7 mg/kg, Lactuca sativa
Literature data.

Other terrestrial non-mammals:
No data available.

## Persistence and degradability

Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria). Literature data.

Elimination information:
approx. 74 % BOD of the ThOD (30 d) (other) (aerobic, activated sludge, domestic)

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.
Information on Stability in Water (Hydrolysis):
The product has not been tested. The statement has been derived from the structure of the product.

## Bioaccumulative potential

Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:
Accumulation in organisms is not to be expected.

### Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

### Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

### Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

### Additional information

Sum parameter

Chemical oxygen demand (COD): 1,520 mg/g

Biochemical oxygen demand (BOD) Incubation period 5 d: 1,300 mg/g

## 13. Disposal Considerations

### Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

## 14. Transport Information

**Land transport**

ADR

| | |
|---|---|
| UN number or ID number: | UN3463 |
| UN proper shipping name: | PROPIONIC ACID |
| Transport hazard class(es): | 8, 3 |
| Packing group: | II |
| Environmental hazards: | no |
| Special precautions for user: | Tunnel code: D/E |

RID

| | |
|---|---|
| UN number or ID number: | UN3463 |
| UN proper shipping name: | PROPIONIC ACID |
| Transport hazard class(es): | 8, 3 |
| Packing group: | II |
| Environmental hazards: | no |
| Special precautions for user: | None known |

**Inland waterway transport**

ADN

| | |
|---|---|
| UN number or ID number: | UN3463 |
| UN proper shipping name: | PROPIONIC ACID |
| Transport hazard class(es): | 8, 3 |
| Packing group: | II |
| Environmental hazards: | no |
| Special precautions for user: | None known |

Transport in inland waterway vessel

| | |
|---|---|
| UN number or ID number: | UN3463 |
| UN proper shipping name: | PROPIONIC ACID |
| Transport hazard class(es): | 8, 3, N3 |
| Packing group: | II |
| Environmental hazards: | yes |
| Type of inland waterway vessel: | N |
| Cargo tank design: | 3 |
| Cargo tank type: | 3 |

**Sea transport**

IMDG

| | |
|---|---|
| UN number or ID number: | UN 3463 |
| UN proper shipping name: | PROPIONIC ACID |
| Transport hazard class(es): | 8, 3 |
| Packing group: | II |
| Environmental hazards: | no<br>Marine pollutant: NO |
| Special precautions for user: | EmS: F-E; S-C |

**Air transport**

IATA/ICAO

| | |
|---|---|
| UN number or ID number: | UN 3463 |
| UN proper shipping name: | PROPIONIC ACID |
| Transport hazard class(es): | 8, 3 |
| Packing group: | II |
| Environmental hazards: | No Mark as dangerous for the environment is needed |
| Special precautions for user: | None known |

### Maritime transport in bulk according to IMO instruments

| | |
|---|---|
| Regulation: | IBC-Code |
| Product name: | Propionic acid |
| Pollution category: | Y |
| Ship Type: | 3 |

## 15. Regulatory Information

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

Not applicable

## 16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

| | |
|---|---|
| Flam. Liq. | Flammable liquids |
| Acute Tox. | Acute toxicity |
| Skin Corr./Irrit. | Skin corrosion/irritation |
| Eye Dam./Irrit. | Serious eye damage/eye irritation |
| STOT SE | Specific target organ toxicity — single exposure |
| H226 | Flammable liquid and vapour. |
| H335 | May cause respiratory irritation. |
| H314 | Causes severe skin burns and eye damage. |
| H303 + H313 | May be harmful if swallowed or in contact with skin. |

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.