

# Safety data sheet

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BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)

Date / Revised: 21.07.2023

Version: 4.0

Product: **Luprosil®**

(ID no. 30041113/SDS\_GEN\_00/EN)

Date of print 24.06.2024

## 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:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Nutrition and Health

Telephone: +49 621 60-48434

E-mail address: EN-global-safety-data@basf.com

### Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

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## 2. Hazards Identification

### Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 3

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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.:  $\geq 10\%$   
Skin Corr./Irrit. 2:  $10 - < 25\%$   
Eye Dam./Irrit. 2:  $10 - < 25\%$   
Skin Corr./Irrit. 1B:  $\geq 25\%$

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):

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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.
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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.

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## **3. Composition/Information on Ingredients**

### **Substances**

Chemical nature

carboxylic acid

Hazardous ingredients (GHS)

According to UN GHS criteria

propionic acid

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Content (W/W):  $\geq 99,5\%$  -  $\leq 100\%$   
 CAS Number: 79-09-4

Flam. Liq. 3  
 Acute Tox. 5 (oral)  
 Acute Tox. 5 (dermal)  
 Skin Corr./Irrit. 1B  
 Eye Dam./Irrit. 1  
 STOT SE 3 (irr. to respiratory syst.)  
 H226, H335, H314, H303 + H313

Specific concentration limit:

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

## Acetic acid

Content (W/W):  $\geq 0\%$  -  $\leq 0,2\%$   
 CAS Number: 64-19-7  
 EC-Number: 200-580-7  
 INDEX-Number: 607-002-00-6

Flam. Liq. 3  
 Skin Corr./Irrit. 1A  
 Eye Dam./Irrit. 1  
 H226, H314

Specific concentration limit:

Skin Corr./Irrit. 2: 10 - < 25 %  
 Eye Dam./Irrit. 2: 10 - < 25 %  
 Skin Corr./Irrit. 1A:  $\geq 90\%$   
 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.

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## **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.

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## **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.

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## **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 alkalis 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.

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## **8. Exposure Controls/Personal Protection**

### **Control parameters**

#### Components with occupational exposure limits

64-19-7: Acetic acid

79-09-4: propionic acid

503-74-2: Isovaleric acid

### **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

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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 (100 g/l, 20 °C) 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 (20 °C) approx. 23 hPa (50 °C)	
Density:	0,993 g/cm <sup>3</sup> (20 °C) Literature data. 0,957 g/cm <sup>3</sup> (55 °C) Literature data. 0,9990 g/cm <sup>3</sup> (15 °C) 0,9610 g/cm <sup>3</sup> (50 °C)	
Relative vapour density (air):> 1	(20 °C) Heavier than air.	(estimated)
Solubility in water:	miscible (20 °C)	
Partitioning coefficient n-octanol/water (log Kow):	0,25 (25 °C) 0,33	(Calculation Hansch/Leo)

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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 (20 °C) 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 (20 °C)	
Adsorption/water - soil:	KOC: 1,201; log KOC: 0,08	(calculated)
	The data refer to the uncharged form of the substance. Under environmental conditions, the substance will almost completely be in its charged form.	
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.

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## **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 organotoxicity was observed after repeated administration to animals. After repeated administration the prominent effect is the induction of corrosion.

**Aspiration hazard**

No aspiration hazard expected.

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## 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 terrestrial 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 (H<sub>2</sub>O):**

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

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## **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.

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## **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

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#### 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  
Special precautions for user: Marine pollutant: NO  
EmS: F-E; S-C

#### **Air transport**

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**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.

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