

## SAFETY DATA SHEET

Version 6.2  
Revision Date 12/18/2020  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Propionic acid

Product Number : 402907  
Brand : Sigma-Aldrich  
Index-No. : 607-089-00-0  
CAS-No. : 79-09-4

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

|                            |  |
|----------------------------|--|
| Hazard statement(s)        |  |
| H226                       | Flammable liquid and vapor.  |
| H314                       | Causes severe skin burns and eye damage.   |
| H335                       | May cause respiratory irritation.  |
| Precautionary statement(s) |  |
| P210                       | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  |
| P233                       | Keep container tightly closed.   |
| P240                       | Ground/bond container and receiving equipment.   |
| P241                       | Use explosion-proof electrical/ ventilating/ lighting/ equipment.  |
| P242                       | Use only non-sparking tools.   |
| P243                       | Take precautionary measures against static discharge.  |
| P261                       | Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  |
| P264                       | Wash skin thoroughly after handling.   |
| P271                       | Use only outdoors or in a well-ventilated area.  |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P301 + P330 + P331         | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.   |
| P303 + P361 + P353         | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.   |
| P304 + P340 + P310         | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.   |
| P305 + P351 + P338 + P310  | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. |
| P363                       | Wash contaminated clothing before reuse.   |
| P370 + P378                | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.   |
| P403 + P233                | Store in a well-ventilated place. Keep container tightly closed.   |
| P403 + P235                | Store in a well-ventilated place. Keep cool.   |
| P405                       | Store locked up.   |
| P501                       | Dispose of contents/ container to an approved waste disposal plant.  |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Rapidly absorbed through skin.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |  |
|------------------|--|
| Synonyms         | : Propanoic acid<br>Propanyl acid<br>Acid C3   |
| Formula          | : C <sub>3</sub> H <sub>6</sub> O <sub>2</sub> |
| Molecular weight | : 74.08 g/mol                                  |
| CAS-No.          | : 79-09-4                                      |
| EC-No.           | : 201-176-3                                    |
| Index-No.        | : 607-089-00-0                                 |

| Component | Classification | Concentration |
|-----------|----------------|---------------|
|-----------|----------------|---------------|

| propionic acid |   |          |
|----------------|---|----------|
|                | Flam. Liq. 3; Skin Corr. 1B; Eye Dam. 1; STOT SE 3; H226, H314, H318, H335<br>Concentration limits:<br>>= 25 %: Skin Corr. 1B, H314; 10 - < 25 %: Skin Irrit. 2, H315; 10 - < 25 %: Eye Irrit. 2, H319; >= 10 %: STOT SE 3, H335; | <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

## **5.2 Special hazards arising from the substance or mixture**

Nature of decomposition products not known.

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

## **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## **5.4 Further information**

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

#### **Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Storage class (TRGS 510): 3: Flammable liquids

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component      | CAS-No. | Value | Control parameters             | Basis   |
|----------------|---------|-------|--------------------------------|---|
| propionic acid | 79-09-4 | TWA   | 10 ppm                         | USA. ACGIH Threshold Limit Values (TLV)   |
|                |         | TWA   | 10 ppm<br>30 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits  |
|                |         | ST    | 15 ppm<br>45 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits  |
|                |         | PEL   | 10 ppm<br>30 mg/m <sup>3</sup> | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nature latex/chloroprene

Minimum layer thickness: 0.6 mm

Break through time: 41 min

Material tested: Lapren® (KCL 706 / Aldrich Z677558, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Flame retardant antistatic protective clothing.

**Respiratory protection**

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

|   |   |
|---|---|
| a) Appearance                                   | Form: liquid, clear<br>Color: colorless                             |
| b) Odor   | No data available   |
| c) Odor Threshold                               | No data available   |
| d) pH   | 2.5 at 100 g/l at 20 °C (68 °F)                                     |
| e) Melting point/freezing point                 | Melting point/range: -24 °C (-11 °F) - lit.                         |
| f) Initial boiling point and boiling range      | 141 °C 286 °F - lit.  |
| g) Flash point                                  | 54 °C (129 °F) - closed cup   |
| h) Evaporation rate                             | No data available   |
| i) Flammability (solid, gas)                    | No data available   |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 12.1 %(V)<br>Lower explosion limit: 2.9 %(V) |
| k) Vapor pressure                               | 3.2 hPa at 20 °C (68 °F)  |
| l) Vapor density                                | 2.56 - (Air = 1.0)  |
| m) Relative density                             | 0.993 g/mL at 25 °C (77 °F)   |
| n) Water solubility                             | soluble   |
| o) Partition coefficient: n-octanol/water       | log Pow: 0.25   |
| p) Autoignition temperature                     | 440 °C (824 °F) at 1,013 hPa  |
| q) Decomposition temperature                    | No data available   |
| r) Viscosity                                    | No data available   |
| s) Explosive properties                         | No data available   |
| t) Oxidizing properties                         | No data available   |

**9.2 Other safety information**

|                        |                             |
|------------------------|-----------------------------|
| Surface tension        | 27.21 mN/m at 15 °C (59 °F) |
| Dissociation constant  | 4.88                        |
| Relative vapor density | 2.56 - (Air = 1.0)          |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Exothermic reaction with:

Oxidizing agents

Reducing agents

alkalines

Risk of ignition or formation of inflammable gases or vapours with:

Iron

Zinc

magnesium

Lead

### 10.4 Conditions to avoid

Heating.

### 10.5 Incompatible materials

various plastics

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 3,455.1 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 20 mg/l

(OECD Test Guideline 403)

LD50 Dermal - Rat - female - 3,235 mg/kg

(OECD Test Guideline 402)

LD50 Parenteral - Rat - 3,500 mg/kg

#### Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns.

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Risk of serious damage to eyes.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

reverse mutation assay

S. typhimurium

Result: negative

OECD Test Guideline 474

Hamster - male and female

Result: negative

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Mouse - female - LOAEL (Lowest observed adverse effect level) - 136.9 mg/kg

RTECS: UE595000

May cause an asthmatic-like bronchitis., Nausea, Dizziness, Headache, Blood disorders, May cause irritation to eyes and respiratory passages to workers briefly exposed to high concentrations

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

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**SECTION 12: Ecological information****12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

Biodegradability                      aerobic - Exposure time 20 d  
Result: 93 % - Readily biodegradable.



### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local No mixing with other waste. Handle uncleaned containers like the product. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

#### DOT (US)

UN number: 3463 Class: 8 (3) Packing group: II  
Proper shipping name: Propionic acid  
Reportable Quantity (RQ): 5000 lbs  
Poison Inhalation Hazard: No

#### IMDG

UN number: 3463 Class: 8 (3) Packing group: II EMS-No: F-E, S-C  
Proper shipping name: PROPIONIC ACID

#### IATA

UN number: 3463 Class: 8 (3) Packing group: II  
Proper shipping name: Propionic acid

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## SECTION 15: Regulatory information

#### SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

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## SECTION 16: Other information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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