1. PRODUCT AND COMPANY IDENTIFICATION

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
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

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 vapour.
H314 Causes severe skin burns and eye damage.
H318 Causes serious 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.
**Use only non-sparking tools.**

**Take precautionary measures against static discharge.**

**Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.**

**Wash skin thoroughly after handling.**

**Use only outdoors or in a well-ventilated area.**

**Wear protective gloves/ protective clothing/ eye protection/ face protection.**

**IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting.

**IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water/shower.

**IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

**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.

**Wash contaminated clothing before reuse.**

**In case of fire:** Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Store in a well-ventilated place. Keep container tightly closed.**

**Store in a well-ventilated place. Keep cool.**

**Store locked up.**

**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.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Synonyms</th>
<th>Formula</th>
<th>Molecular weight</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionic acid</td>
<td>Propanoic acid</td>
<td>C₃H₆O₂</td>
<td>74.08 g/mol</td>
<td>79-09-4</td>
<td>201-176-3</td>
<td>607-089-00-0</td>
</tr>
</tbody>
</table>

**Hazardous components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionic acid</td>
<td>Flam. Liq. 3; Skin Corr. 1B; Eye Dam. 1; STOT SE 3; H226, H314, H318, H335</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

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

**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

5. FIREFIGHTING MEASURES
5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
Components with workplace control parameters
<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionic acid</td>
<td>79-09-4</td>
<td>TWA</td>
<td>10 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks
- Upper Respiratory Tract irritation
- Eye irritation
- Skin irritation

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<tbody>
<tr>
<td>TWA</td>
<td>10.000000 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>ST</td>
<td>15.000000 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>TWA</td>
<td>10 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>ST</td>
<td>15 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
</tbody>
</table>

PEL 10 ppm 30 mg/m3 California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

**Eye/face protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**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 CE 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**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

---

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

a) **Appearance**
   Form: liquid, clear
   Colour: colourless

b) **Odour**
   No data available

c) **Odour Threshold**
   No data available

d) **pH**
   2.5 at 100 g/l at 20 ºC (68 ºF)

e) **Melting point/freezing point**
   Melting point/range: -24 ºC (-11 ºF) - lit.

f) **Initial boiling point and boiling range**
   141 ºC (286 ºF) - lit.

g) **Flash point**
   54 ºC (129 ºF) - 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)
   Lower explosion limit: 2.9 % (V)

k) **Vapour pressure**
   3.2 hPa (2.4 mmHg) at 20 ºC (68 ºF)

l) **Vapour density**
   2.56 - (Air = 1.0)

m) **Relative density**
   0.993 g/mL at 25 ºC (77 ºF)

n) **Water solubility**
   soluble

o) **Partition coefficient: n-octanol/water**
   log Pow: 0.25

p) **Auto-ignition temperature**
   440 ºC (824 ºF) at 1,013 hPa (760 mmHg)

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 ºC (59 ºF)

- **Dissociation constant**
  4.88

- **Relative vapour density**
  2.56 - (Air = 1.0)
10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

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 Intravenous - Mouse - 625 mg/kg
Remarks: Behavioral: Convulsions or effect on seizure threshold.

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 sensitisation
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 component 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 component 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 identified as a
carcinogen or potential carcinogen by OSHA.

**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

**Additional Information**
Repeated dose Mouse - female - LOAEL : 136.9 mg/kg - OECD Test Guideline 411
toxicity
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

Liver - Irregularities - Based on Human Evidence
Liver - Irregularities - Based on Human Evidence

---

**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

---

**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

---

**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
15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Mininis) 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

<table>
<thead>
<tr>
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<th>Revision Date</th>
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<tbody>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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<tbody>
<tr>
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<td></td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

| Eye Dam. | Serious eye damage |
| Flam. Liq. | Flammable liquids |
| H226 | Flammable liquid and vapour. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |
| Skin Corr. | Skin corrosion |
| STOT SE | Specific target organ toxicity - single exposure |

HMIS Rating
Health hazard: 3  
Chronic Health Hazard: *  
Flammability: 2  
Physical Hazard 0

NFPA Rating
Health hazard: 3  
Fire Hazard: 2  
Reactivity Hazard: 0
Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.11  Revision Date: 05/24/2016  Print Date: 07/27/2016