1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Butyric acid

Product Number: B103500

Brand: Aldrich

Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA

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

Emergency Phone #: (314) 776-6555

Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid, Target Organ Effect, Corrosive

Target Organs
Blood

GHS Classification
Flammable liquids (Category 4)
Acute toxicity, Oral (Category 5)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
- H227: Combustible liquid
- H303: May be harmful if swallowed.
- H314: Causes severe skin burns and eye damage.
- H402: Harmful to aquatic life.

Precautionary statement(s)
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- 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 doctor/ physician.

HMIS Classification
Health hazard: 3
### Chronic Health Hazard

- *Chronic Health Hazard:*

### Flammability:
- 2

### Physical hazards:
- 0

### NFPA Rating
- **Health hazard:** 3
- **Fire:** 2
- **Reactivity Hazard:** 0

### Potential Health Effects

- **Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- **Skin:** May be harmful if absorbed through skin. Causes skin burns.
- **Eyes:** Causes eye burns.
- **Ingestion:** May be harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

- **Formula:** C4H8O2
- **Molecular Weight:** 88.11 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyric acid</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>107-92-6</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-532-3</td>
</tr>
<tr>
<td>Index-No.</td>
<td>607-135-00-X</td>
</tr>
</tbody>
</table>

### 4. 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.

### 5. FIREFIGHTING MEASURES

- **Conditions of flammability:**
  Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

- **Suitable extinguishing media:**
  Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

- **Special protective equipment for firefighters:**
  Wear self contained breathing apparatus for fire fighting if necessary.

- **Hazardous combustion products:**
  Hazardous decomposition products formed under fire conditions. - Carbon oxides

- **Further information:**
  Use water spray to cool unopened containers.

### 6. ACCIDENTAL RELEASE MEASURES

- Aldrich - B103500
Personal precautions
Use personal protective equipment. Avoid breathing vapors, 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.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

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).

Hand 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® (Aldrich Z677647, Size M)

Splash protection
Material: Nature latex/chloroprene
Minimum layer thickness: 0.6 mm
Break through time: > 30 min
Material tested:Lapren® (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 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.

Eye 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 and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>clear, liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td><strong>Safety data</strong></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>3 at 10 g/l at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Melting point/range: -7 - -5 °C (19 - 23 °F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>164 °C (327 °F) at 1,013 hPa (760 mmHg)</td>
</tr>
<tr>
<td>Flash point</td>
<td>72 °C (162 °F) - closed cup</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>440 °C (824 °F)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>2 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>10 % (V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>0.57 hPa (0.43 mmHg) at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>0.958 g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>ca.50 g/l</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 0.79</td>
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<tr>
<td>Relative vapour density</td>
<td>3.04 - (Air = 1.0)</td>
</tr>
<tr>
<td>Odour</td>
<td>Stench.</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
</tbody>
</table>

## 10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
No data available

**Conditions to avoid**
Heat, flames and sparks.

**Materials to avoid**
Strong oxidizing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD₅₀</td>
<td>2,940 mg/kg</td>
</tr>
<tr>
<td>Inhalation LC₅₀</td>
<td>Aldrich - B103500</td>
</tr>
</tbody>
</table>
Dermal LD50
LD50 Dermal - rabbit - 6,083 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Corrosive

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Genotoxicity in vitro - Human - HeLa cell
DNA damage
Genotoxicity in vitro - Human - lymphocyte
DNA inhibition

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.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
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

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects
Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects
no data available
12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish: LC0 - Leuciscus idus melanotus - 96 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 61.7 mg/l - 24 h

Persistence and degradability
Biodegradability: Biotic/Aerobic

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. 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: 2820 Class: 8 Packing group: III
Proper shipping name: Butyric acid
Reportable Quantity (RQ): 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2820 Class: 8 Packing group: III EMS-No: F-A, S-B
Proper shipping name: BUTYRIC ACID
Marine pollutant: No

IATA
UN number: 2820 Class: 8 Packing group: III
Proper shipping name: Butyric acid

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid, Target Organ Effect, Corrosive
SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: 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

<table>
<thead>
<tr>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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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

Further information
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