



SIGMA-ALDRICH

## Material Safety Data Sheet

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Version 1.50

### Section 1 - Product and Company Information

**Product Name** Butyric acid, 99+%  
**Product Number** B103500  
**Brand** Aldrich Chemical

**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 800-325-5832  
**Fax:** 800-325-5052

**Emergency Phone:** 314-776-6555

### Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
BUTYRIC ACID	107-92-6	No	203-532-3	607-135-00-X

**Formula** C4H8O2  
**Synonyms** Butanoic acid, Butanoic acid, Buttersäure (German), n-Butyric acid, Ethylacetic acid, Kyselina maselna (Czech), 1-Propanecarboxylic acid, Propylformic acid

### Section 3 - Hazards Identification

#### Emergency Overview

Corrosive.  
Causes burns.  
Readily absorbed through skin. Stench. Target organ(s): Blood. Combustible.

**HMIS Rating**  
Health: 3\* Flammability: 2 Reactivity: 0

**NFPA Rating**  
Health: 3 Flammability: 2 Reactivity: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

#### Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

### Section 5 - Fire Fighting Measures

**Flash Point:** 161.6 °F 72 °C  
**Explosion Limits:** Lower: 2 % Upper: 10 %  
**Autoignition Temp:** 440 °C

#### Extinguishing Media

**Suitable**  
Carbon dioxide, dry chemical powder, or appropriate foam.

#### Firefighting

**Protective Equipment**  
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
**Specific Hazard(s)**  
Combustible liquid. Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

#### Procedure to be Followed in Case of Leak or Spill

Evacuate area.

#### Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### Methods for Cleaning Up

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

##### User Exposure

Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### Storage

##### Suitable

Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

### Section 8 - Exposure Controls / PPE

#### Engineering Controls

Safety shower and eye bath. Use only in a chemical fume hood.

#### Personal Protective Equipment

##### Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.

##### Hand

Compatible chemical-resistant gloves.

##### Eye

Chemical safety goggles.

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**Other**

Faceshield (8-inch minimum).

**General Hygiene Measures**

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

**Section 9 - Physical/Chemical Properties**

<b>Appearance</b>			
<b>Physical State</b>	<b>Color</b>		<b>Odor</b>
Clear liquid	Colorless		Stench.
<b>Molecular Weight:</b>	88.11 AMU		
<b>Property</b>	<b>Value</b>	<b>At Temperature or Pressure</b>	<b>Other</b>
pH	3.0	20 °C	Concentration: 10 g/l
BP/BP Range	164 °C	760 mmHg	
MP/MP Range	-7.9 °C		
Freezing Point	N/A		
Vapor Pressure	0.43 mmHg	20 °C	
Vapor Density	3.04 g/l		
Saturated Vapor Conc.	N/A		
SG/Density	0.958 g/cm <sup>3</sup>		
Bulk Density	N/A		
Odor Threshold	N/A		
Volatile%	N/A		
VOC Content	N/A		
Water Content	N/A		
Solvent Content	N/A		
Evaporation Rate	N/A		
Viscosity	2 Pas	20 °C	
Surface Tension	26.74 mN/m	20 °C	
Partition Coefficient	Log Kow: 0.79		
Decomposition Temp.	N/A		
Flash Point °F	161.6 °F		Method: closed cup
Flash Point °C	72 °C		Method: closed cup
<b>Explosion Limits</b>	Lower: 2 % Upper: 10 %		
<b>Flammability</b>	N/A		
<b>Autoignition Temp</b>	440 °C		
<b>Refractive Index</b>	1.399		
<b>Solubility</b>			
<b>Solubility in Water:</b>	50 mg/ml H <sub>2</sub> O		
<b>Other Solvents:</b>	ALCOHOL, ETHER.		

N/A = not available

**Section 10 - Stability and Reactivity**

<b>Stability</b>
Stable
Stable.
<b>Materials to Avoid</b>
Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>
<b>Hazardous Decomposition Products</b>
Carbon monoxide, Carbon dioxide.

**Hazardous Polymerization**  
**Hazardous Polymerization**  
Will not occur.**Section 11 - Toxicological Information****Route of Exposure****Skin Contact**

Causes burns.

**Skin Absorption**

May be harmful if absorbed through the skin.

**Eye Contact**

Causes burns.

**Inhalation**

Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

**Ingestion**

May be harmful if swallowed.

**Target Organ(s) or System(s)**

Blood.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Can cause CNS depression.

**RTECS Number:** ES5425000**Toxicity Data**

Oral - Rat: 8,790 mg/kg(LD50)

Oral - Rat: 2,940 mg/kg(LD50)

Inhalation - Rabbit: 400 mg/m<sup>3</sup>(I)

Skin - Rabbit: 6,083 mg/kg(LD50)

Oral - Rat: 2000 mg/kg (LD50)

Intraperitoneal - Mouse: 3180 MG/KG (LD50)

Subcutaneous - Mouse: 3180 MG/KG (LD50)

Intravenous - Mouse: 800 MG/KG (LD50)

Remarks: Behavioral:Convulsions or effect on seizure threshold.

Skin - Rabbit: 530 UL/KG (LD50)

**Irritation Data**

Skin - Rabbit:

Remarks: Corrosive.

Eyes - Rabbit:

Remarks: Moderate irritation effect

Skin - Rabbit: 500 mg

Remarks: Open irritation test

Skin - Rabbit: 20 mg 24H

Remarks: Moderate irritation effect

**Chronic Exposure - Mutagen**

<u>Species</u>	<u>Dose</u>
Human	3 MMOL/L
Human	4 MMOL/L
Chicken	2 MMOL/L

<u>Cell Type</u>	<u>Mutation test</u>
HeLa cell	DNA damage
lymphocyte	DNA inhibition
fibroblast	DNA damage

## Section 12 - Ecological Information

### Acute Ecotoxicity Tests

#### Test Type

EC50 Algae

**Time:** 72.0 h  
**Value:** 47 mg/l

#### Test Type

EC50 Daphnia

**Species:** Daphnia magna  
**Time:** 24.0 h  
**Value:** 61.7 mg/l

#### Test Type

LC50 Fish

**Species:** Leuciscus idus

**Time:** 48.0 h  
**Value:** 250 - 480 mg/l

#### Test Type

LC50 Fish

**Species:** Cyprinus carpio

**Time:** 48.0 h  
**Value:** 65 mg/l

### Additional Results/Data from Relevant Scientific Experiments

Avoid contamination of the environment

## Section 13 - Disposal Considerations

### Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

## Section 14 - Transport Information

### DOT

**Proper Shipping Name:** Butyric acid  
**UN#:** 2820  
**Class:** 8  
**Packing Group:** Packing Group III  
**Hazard Label:** Corrosive  
**PIH:** Not PIH

### IATA

**Proper Shipping Name:** Butyric acid  
**IATA UN Number:** 2820  
**Hazard Class:** 8  
**Packing Group:** III

## Section 15 - Regulatory Information

### EU Directives Classification

**Symbol of Danger:** C

**Indication of Danger:** Corrosive.

**Risk Statements:** R: 34  
Causes burns.

### Safety Statements S: 26 36 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### US Classification and Label Text

#### Indication of Danger

Corrosive.

#### Risk Statements

Causes burns.

#### Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### US Statements

Readily absorbed through skin. Stench. Target organ(s): Blood. Combustible.

### United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

### Canada Regulatory Information

#### WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

## Section 16 - Other Information

### Disclaimer

For R&D use only. Not for drug, household or other uses.

### Warranty

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

