

Chemical Safety Data Sheet MSDS / SDS

Butyric acid SDS

Revision Date:2024-04-25 Revision Number:1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: Butyric acid

CAS: 107-92-6

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification**Classification of the substance or mixture**

Skin corrosion, Sub-category 1B

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Butyric acid
Common names and synonyms:	Butyric acid
CAS number:	107-92-6
EC number:	203-532-3
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation causes irritation of mucous membrane and respiratory tract; may cause nausea and vomiting. Ingestion causes irritation of mouth and stomach. Contact with eyes may cause serious injury. Contact with skin may cause burns; chemical is readily absorbed through the skin and may cause damage by this route. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist respirations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min.

Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Activated charcoal is not effective . Do not attempt to neutralize because of exothermic reaction. Cover skin burns with dry, sterile dressings after decontamination . Organic acids and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Use water spray, dry chemical, "alcohol resistant" foam, or CO2. Use water to keep fire-exposed containers cool. On large fires, solid streams of water may not be effective.

Specific hazards arising from the chemical

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Cautiously neutralize remainder with soda lime. Then wash away with plenty of water.

Environmental precautions

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Cautiously neutralize remainder with soda lime. Then wash away with plenty of water.

Methods and materials for containment and cleaning up

Land spill: Dig a pit, pond, lagoon, or holding area to contain liquid or solid material /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner. / Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder. Neutralize with agricultural lime (slaked lime), crushed limestone, or sodium bicarbonate.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Above 72°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, strong bases and food and feedstuffs. Store in cool, dry, well-ventilated location, away from any area where fire hazard may be acute.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Butyric acid			
CAS No.	107-92-6			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Latvia	?	10	?	?
	Remarks			

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid. Liquid.
Colour:	Colourless, clear.
Odour:	Unpleasant, rancid odor
Melting point/freezing point:	-7 °C. Atm. press.:Ca.
Boiling point or initial boiling point and boiling range:	164 °C. Atm. press.:1 013 hPa.
Flammability:	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 2.0% by volume; Upper flammable limit: 10.0% by volume
Flash point:	71 °C. Atm. press.:1 013 hPa.
Auto-ignition temperature:	435 °C. Atm. press.:1 008 hPa.

Decomposition temperature:	no data available
pH:	2.
Kinematic viscosity:	dynamic viscosity (in mPa s) = 1.666. Temperature:20 °C.
Solubility:	Miscible with water
Partition coefficient n-octanol/water:	Pow = 12.6. Temperature:25 °C.;log Pow = 1.1. Temperature:25 °C.
Vapour pressure:	1 hPa. Temperature:20 °C. Remarks:Extrapolated result based on experimental result.
Density and/or relative density:	957.4 kg/m ³ . Temperature:20 °C.
Relative vapour density:	3.04 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance is a medium strong acid. Reacts with bases and strong oxidants. Attacks many metals.

Chemical stability

It has good stability

Possibility of hazardous reactions

Combustible liquidBUTYRIC ACID can react with oxidizing agents. Incandescent reactions occur with chromium trioxide above 212°F. Also incompatible with bases and reducing agents. May attack aluminum and other light metals (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

May attack aluminum or other light metals with formation of flammable hydrogen gas.

Hazardous decomposition products

Products of combustion include carbon dioxide and carbon monoxide as well as irritating fumes.

SECTION 11: Toxicological information**Acute toxicity**

Oral: LD50 - rat (male/female) - ca. 1 632 mg/kg bw. Remarks: Reported LD50 = 1700 µL/kg bw.

Inhalation: LC0 - rat (male/female) - 5.1 mg/L air.

Dermal: LD50 - rabbit (male) - 6.35 mL/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract.

STOT-repeated exposure

no data available

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - *Pimephales promelas* - 77 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 51.25 mg/L - 48 h.

Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - 45.1 mg/L - 72 h.

Toxicity to microorganisms: EC10 - *Pseudomonas putida* - 51 mg/L - 18 h.

Persistence and degradability

AEROBIC: At an initial concentration of 100 mg/L, n-butanoic acid displayed a 72% theoretical biological oxygen demand (BODT) after 5 hours when incubated with activated sludge(1,2). n-Butanoic acid at an initial concentration of 5 ppm displayed a BODT of 76.6% in fresh water and 72.4% in sea water after 5 days(3). n-Butanoic acid had a BODT of 17.4%, 23.8%, 26.2%, and 27.7% after 6, 12, 18, and 24 hours, respectively, when incubated with an activated sludge seed at an initial concentration of 500 ppm(4). In a screening study, n-butanoic acid displayed a 46%, 48%, and 58% BODT after 2, 10, and 30 days, respectively, using a sewage seed(5). In a screening study using a sewage seed, n-butanoic acid had a 5 day BODT of 72-78% and a 20 day BODT of 92-99%(6,7). Several other screening studies with activated sludge inoculum have shown that n-butanoic acid is amenable to biodegradation under aerobic conditions(8-10).

Bioaccumulative potential

An estimated BCF of 3.2 was calculated for n-butanoic acid(SRC), using a log Kow of 0.79(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of n-butanoic acid is estimated as 64(SRC), using a log Kow of 0.79(1) and a regression-derived equation(2). Experimental Koc values for n-butanoic acid on a clastic mud (3.5% organic carbon), a lateritic muddy sand (1.3% organic carbon), and a fine carbonate sand (0.17% organic carbon) were 19.1, 27.6, and 14.7, respectively(3). According to a classification scheme(4), these estimated and experimental Koc values suggest that n-butanoic acid is expected to have very high to high mobility in soil. The percent of n-butanoic acid sorbed to a kalonite or montmorillonite clay at 22 deg C was 14.0% and 19.9% after 48 hours, respectively, which increased to 31.4% and 24.2%, respectively, after 144 hours(5). In a field study in which 100 ppm n-butanoic acid was injected underground, the retardation, relative to the linear ground-water velocity, was calculated to be 3%(6). N-butanoic acid is listed as a compound displaying an L-type adsorption isotherm, indicating that specific binding sites may be involved(7). Experimental studies indicate that adsorption of n-butanoic acid to moist soil is dominated by attractive forces between the compound and soil and not by hydrophobic interactions(8). The pKa of n-butanoic acid is 4.82(9), indicating that this compound will primarily exist in the anion in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(10).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2820 (For reference only, please check.)

IMDG: UN2820 (For reference only, please check.)
IATA: UN2820 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: BUTYRIC ACID (For reference only, please check.)
IMDG: BUTYRIC ACID (For reference only, please check.)
IATA: BUTYRIC ACID (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.)
IMDG: 8 (For reference only, please check.)
IATA: 8 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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