

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : gamma -Butyrolactone

Product Number : B103608
Brand : Aldrich

Company : Sigma-Aldrich Canada, Ltd
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CANADA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : gamma -Hydroxybutyric acid lactone
4-Hydroxybutyric acid lactone
GBL

Formula : C4H8O2
Molecular Weight : 86.09 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
gamma-Butyrolactone			
96-48-0	202-509-5	-	-

3. HAZARDS IDENTIFICATION**Emergency Overview****Target Organs**

Central nervous system

WHMIS Classification

D2B Toxic Material Causing Other Toxic Effects Irritant

HMIS Classification

Health Hazard: 2

Chronic Health Hazard: *

Flammability: 1

Physical hazards: 1

NFPA Rating

Health Hazard: 2

Fire : 1

Reactivity Hazard: 1

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Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

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

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.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES**Flammable properties**

Flash point 98 °C (208 °F) - closed cup

Ignition temperature 455 °C (851 °F)

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards

Combustible liquid

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.
hygroscopic

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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 GEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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**Appearance**

Form liquid, clear

Colour colourless

Safety data

pH no data available

Melting point -45 °C (-49 °F)

Boiling point 80 - 81 °C (176 - 178 °F) at 15 hPa (11 mmHg)
204 - 205 °C (399 - 401 °F) at 1,013 hPa (760 mmHg)

Flash point 98 °C (208 °F) - closed cup

Ignition temperature 455 °C (851 °F)

Lower explosion limit 1.4 %(V)

Upper explosion limit 16 %(V)

Vapour pressure 2.0 hPa (1.5 mmHg) at 20 °C (68 °F)

Density 1.129 g/cm3

Water solubility no data available

Partition coefficient: log Pow: -0.57

n-octanol/water

Relative vapour density 2.97

density - (Air = 1.0)

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions. hygroscopic

Materials to avoid

Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents, Zinc, Plastics

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Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 1,540 mg/kg

Remarks: Behavioral: Altered sleep time (including change in righting reflex). Behavioral: Somnolence (general depressed activity). Respiratory disorder

LC50 Inhalation - rat - 4 h - > 5,100 mg/m3

LD50 Dermal - guinea pig - > 5,000 mg/kg

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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.

Signs and Symptoms of Exposure

an anesthetic effect on the central nervous system characterized by a loss of sensation., Preliminary excitement is the initial effect followed by relaxation, stupor, or sleep., Nausea, Dizziness, Headache

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.
Target Organs Central nervous system,

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

Biodegradability Biotic/Aerobic
Result: 90 % - Readily biodegradable.
Method: Directive 67/548/EEC Annex V, C.4.F.

Ecotoxicity effects

Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - > 220 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - > 500 mg/l - 48 h
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae EC50 - Scenedesmus subspicatus - 360 mg/l - 72 h

Further information on ecology

Biochemical Oxygen 1,160 mg/g

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Demand (BOD)

Adsorbed organic bound halogens (AOX) Remarks: Product does not contain any organic halogens.

Additional ecological information no data available

13. DISPOSAL CONSIDERATIONS**Product**

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION**TSCA Status**

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

WHMIS Classification

D2B Toxic Material Causing Other Toxic Effects Irritant

16. OTHER INFORMATION**Further information**

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