

# Safety Data Sheet

## gamma-Butyrolactone dist.

Revision date : 2014/07/09



### 1. Product and Company Identification

Company  
GBL Europe  
PO Box 193  
8330 AD, Steenwijk, The Netherlands

24 Hour Emergency Response Information  
info@gbl-europe.com

Molecular formula: C(4)H(6)O(2)  
Chemical family: lactone  
Synonyms: Not available. Use: chemical used in synthesis and/or formulation of industrial products

### 2. Hazards Identification

Emergency overview

CAUTION:

Irritating to eyes and respiratory system.

Risk of serious damage to eyes.

Avoid all sources of ignition: heat, sparks, open flame.

State of matter: liquid

Colour: colourless

Odour: faint odour

Potential health effects

Acute toxicity:

Of moderate toxicity after single ingestion. Virtually nontoxic by inhalation. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard.

Irritation / corrosion:

Not irritating to the skin. May cause severe damage to the eyes.

Assessment other acute effects:

Possible narcotic effects (drowsiness or dizziness).

Sensitization:

Skin sensitizing effects were not observed in animal studies.

Chronic toxicity:

Carcinogenicity: Results from a number of long-term carcinogenicity studies are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic. IARC Group 3 (not classifiable as to human carcinogenicity).

Repeated dose toxicity: The substance may cause damage to the central nervous system after repeated ingestion of high doses.

Reproductive toxicity: No effects have been reported in reproductive organs in long term animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Genotoxicity: In the majority of tests performed (bacteria/microorganisms/cell cultures) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays.

Medical conditions aggravated by overexposure:

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See MSDS section 11 - Toxicological information.

Signs and symptoms of overexposure:

Overexposure may cause: weakness, chest discomfort, anxiety, nausea, diarrhea, headache

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further symptoms are possible

Potential environmental effects

Aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Terrestrial toxicity:

Study scientifically not justified.

### 3. Composition / Information on Ingredients

CAS Number Content (W/W) Hazardous ingredients  
96-48-0 >= 60.0 - <= 100.0 % gamma-butyrolactone

### 4. First-Aid Measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air. Assist in breathing if necessary. Consult a physician.

If on skin:

Wash affected areas thoroughly with soap and water. Remove contaminated clothing. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:

If person is conscious and can swallow, give two glasses of water. Induce vomiting. Immediate medical attention required.

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

### 5. Fire-Fighting Measures

Flash point: 106 °C (DIN 51758, closed cup)

Autoignition: 435 °C

Lower explosion limit: 2.7 %(V) (air) For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.

Upper explosion limit: 17.5 %(V) (air) For liquids not relevant for classification and labelling.

Flammability: not flammable

Self-ignition temperature: not self-igniting

Suitable extinguishing media:

water spray, dry powder, foam, carbon dioxide

Hazards during fire-fighting:

nitrogen oxides, carbon oxides

The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

### 6. Accidental release measures

Personal precautions:

Avoid contact with the skin, eyes and clothing.

Environmental precautions:

Discharge into the environment must be avoided.

Cleanup:

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

Dispose of absorbed material in accordance with regulations.

### 7. Handling and Storage

#### Handling

General advice:

Ensure thorough ventilation of stores and work areas. Handle in accordance with good industrial hygiene and safety practice. Remove contaminated clothing and protective equipment before entering eating areas. Hands and/or face should be washed before breaks and at the end of the shift. When using do not eat, drink or smoke.

Ensure thorough ventilation of stores and work areas.  
Protection against fire and explosion:  
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

### Storage

General advice:  
Containers should be stored tightly sealed in a dry place. Storage in galvanized containers is not recommended.  
Protect against moisture.  
Storage incompatibility:  
General advice: Segregate from alkalies and alkalinizing substances.  
Storage stability:  
Storage duration: 24 Months  
From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

## 8. Exposure Controls and Personal Protection

Personal protective equipment  
Respiratory protection:  
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed.  
Hand protection:  
Chemical resistant protective gloves, Suitable materials, rubber, plastic  
Eye protection:  
Tightly fitting safety goggles (chemical goggles).  
Body protection:  
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.  
General safety and hygiene measures:  
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is required additionally to the stated personal protection equipment.  
Wash soiled clothing immediately.

## 9. Physical and Chemical Properties

Form: liquid  
Odour: faint odour  
Odour threshold: No data available.  
Colour: colourless  
pH value: approx. 4 - 5 ( 100 g/l, 20 °C)  
melting range: -43.2 - -42 °C Literature data.  
Boiling point: 204.6 °C ( 1,013.25 hPa)  
Vapour pressure: approx. 0.4 mbar ( 20 °C) (calculated)  
3 mbar (approx. 50 °C) (Directive 92/69/EEC, A.4)  
Density: 1.13 g/cm<sup>3</sup> ( 20 °C)  
Relative density: 1.13 ( 20 °C)  
Bulk density: Unspecified  
Vapour density: not relevant  
Partitioning coefficient noctanol/  
water (log Pow):  
-0.566 ( 25 °C) (OECD Guideline 107)  
Viscosity, dynamic: 1.9 mPa.s ( 20 °C)  
1.25 mPa.s ( 50 °C)  
Particle size:  
The substance / product is marketed or used  
in a non solid or granular form.  
Solubility in water: > 1,000 g/l ( 20 °C) miscible  
Miscibility with water: miscible in all proportions  
Solubility (qualitative): miscible  
solvent(s): organic solvents,  
Molar mass: 86.09 g/mol

## 10. Stability and Reactivity

Conditions to avoid:  
Avoid heat. Avoid open flames.

Substances to avoid:

strong acids, bases, oxidizing agents

Hazardous reactions:

Violent reactions with concentrated alkalis and oxidizing agents.

Ignitable air mixtures can form when the product is heated above the flash point and/or when sprayed or atomized. Violent reactions with concentrated alkalis and oxidizing agents. Some plastics, rubber or coatings can be corroded.

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

220 °C (DSC (DIN 51007))

It is not a self-decompositionable substance.

Oxidizing properties:

not fire-propagating

## 11. Toxicological information

Acute toxicity

Oral:

Type of value: LD50

Species: rat

Value: 1,582 mg/kg (similar to OECD guideline 401)

Inhalation:

Type of value: LC50

Species: rat (male/female)

Value: > 5.1 mg/l (similar to OECD guideline 403)

Exposure time: 4 h

An aerosol was tested.

Literature data.

Irritation / corrosion

Information on: gamma-butyrolactone

Assessment of irritating effects:

Not irritating to the skin. May cause severe damage to the eyes.

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Skin:

Species: rabbit

Result: non-irritant

Method: BASF-Test

Eye:

Species: rabbit

Result: Risk of serious damage to eyes.

Method: OECD Guideline 405

Sensitization:

Species: mouse

Result: Non-sensitizing.

Method: OECD Guideline 429

Aspiration Hazard:

No aspiration hazard expected.

Experiences in humans:

High concentrations have a narcotizing effect.

## 12. Ecological Information

Fish

Acute:

OECD 203; ISO 7346; 84/449/EEC, C.1 static

Lepomis macrochirus/LC50 (96 h): 56 mg/l

The details of the toxic effect relate to the nominal concentration.

Chronic:

Study does not need to be conducted.

Aquatic invertebrates

Acute:

Directive 79/831/EEC Daphnia magna/EC50 (48 h): > 500 mg/l

The details of the toxic effect relate to the nominal concentration.

Chronic:

Study does not need to be conducted.

Aquatic plants

Toxicity to aquatic plants:

DIN 38412 Part 9 green algae/EC50 (72 h): > 1,000 mg/l

The details of the toxic effect relate to the nominal concentration.

#### Microorganisms

Toxicity to microorganisms:

static

Protozoa/EC50 (40 h): 4,518 mg/l

Degradability / Persistence

Biological / Abiological Degradation

Test method: OECD 301C; ISO 9408; 92/69/EEC, C.4-F (aerobic), activated sludge

Method of analysis: BOD of the ThOD

Degree of elimination: 77 % (14 d)

Test method: OECD Guideline 302 B (aerobic), activated sludge, industrial

Method of analysis: DOC reduction

Degree of elimination: 98 % (13 d)

Evaluation: Readily biodegradable (according to OECD criteria).

Easily eliminated from water.

Hydrolysis

Test method: OECD Guideline 111 (abiotic)

pH7

Half-life: > 15 - 28 d (20 °C)

Environmental mobility:

Transport between environmental compartments:

calculated Adsorption/water - soil

KOC: 6.477

log KOC: 0.811

### 13. Disposal considerations

Waste disposal of substance:

Must be disposed of or incinerated in accordance with local regulations.

Container disposal:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

### 14. Transport Information

Land transport

TDG

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

### 15. Regulatory Information

Federal Regulations

Registration status:

Chemical DSL, CA released / listed

WHMIS classification: D2B: Materials Causing Other Toxic Effects - Toxic material

This product is WHMIS controlled.

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.

### 16. Other Information

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

SDS Prepared by:

Company

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END OF DATA SHEET