



Gamma Butyrolactone

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name:	Gamma Butyrolactone
CAS Number:	96-48-0
EC Number:	202-509-5

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

Recommended use:	Solvent. Intermediate. Laboratory chemicals Viscosity adjusters
Restrictions on use:	Cosmetics Soluble coatings on children's toys

1.3 Details of the supplier of the safety data sheet

Company name:	East Harbour Group Ltd Miranda House, The Quay Harwich, Essex, CO12 3HH United Kingdom
Telephone:	+44 (0) 333 242 0100
Email:	info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone:	0800 246 1274
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Section 2: Hazardous identification

2.1 Classification of the substance or mixture Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity -single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms:



Signal word: Danger

Hazard statements: H302 Harmful if swallowed.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.

Precautionary statements: Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/spray.

P280 Wear eye protection/ face protection.

Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

Additional advice
No information available

Section 3: Composition/information on ingredients

3.1 Substances

Hazardous components

Chemical Name	CAS No. & EC No.	Concentration (%)
y-butyrolactone	96-48-0 / 202-509-5	>=90,00 - <=100,00



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Section 4: First aid measures

4.1 Description of first aid measures

General advice	Move out of dangerous area. Consult a physician Show this safety data sheet to the doctor in attendance Do not leave victim unattended
If Inhaled	Move to fresh air Keep patient warm and at rest If unconscious, place in recovery position and see medical advice. Consult a physician after significant exposure
In case of skin contact	First aid is not normally required, however, it is recommended that exposed areas be cleaned by washing with soap and water.
In case of eye contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye.
If swallowed	Obtain medical attention. Do NOT induce vomiting. Rinse mouth with water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: Effects on blood pressure
Risks	Harmful if swallowed. Causes serious eye damage. May cause drowsiness or dizziness.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	No hazards which require special first aid measures
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Section 5: Fire-fighting measures

5.1 Fire Fighting Media and Instructions:

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:

If product is heated above its flash point it will produce vapours sufficient to support combustion. Vapours are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release. Do not allow run-off from firefighting to enter drains or water courses.

Hazardous combustion products:

Carbon dioxide and Carbon monoxide
Nitrogen oxides (NO_x)
Hydrocarbons toxic fumes

5.3 Advice for firefighters

Special protective equipment for firefighters:
In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods:
Product is compatible with standard fire-fighting agents.

Further information:
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.



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6.2 Environmental precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

Section 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling:

Avoid formation of aerosol.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Do not breathe vapours/dust.
 Do not smoke. Container hazardous when empty.
 Avoid exposure -obtain special instructions before use.
 Avoid contact with skin and eyes.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
 Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Hygiene measures:

Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:

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. Observe label precautions.

Other data:

No decomposition if stored and applied as directed.

7.3 Specific end use(s)

No data available



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Section 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

γ -butyrolactone:

End Use: Workers

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 130 mg/m³

End Use: Workers

Exposure routes: Inhalation

Potential health effects: Acute systemic effects

Value: 958 mg/m³

End Use: Workers

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 19 mg/m³

End Use: GEN POP -General population

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 28 mg/m³ End Use: GEN POP -General population

Exposure routes: Inhalation

Potential health effects: Acute systemic effects

Value: 340 mg/m³

End Use: GEN POP -General population

Exposure routes: Inhalation

Potential health effects: Long-term systemic effects

Value: 8 mg/m³

End Use: GEN POP -General population

Exposure routes: Dermal

Potential health effects: Long-term systemic effects

Value: 8 mg/m³

8.2 Exposure controls

Engineering measures Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

8.3 Personal protective equipment

Eye protection:

Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.

Maintain eye wash station in immediate work area.

Hand protection Material:

butyl rubber

polyvinyl alcohol

natural rubber

neoprene



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Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection: Wear as appropriate:
 Impervious clothing
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the workplace.

Respiratory protection: In the case of vapour formation use a respirator with an approved filter.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Clear
Odor	Mild
Odor Threshold	No data available
pH	4.5
Concentration	10%
Melting Point/Range	-44 - -42 °C
Boiling Point/Range	204.6 °C
Flash Point	106 °C
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Upper Explosion Limits	No data available
Lower Explosion Limits	No data available
Vapor Pressure	0,344 hPa (20 °C)
Relative Vapor Density	No data available
Relative Density	No data available
Density	1,124 g/cm ³ (25 °C)
Water Solubility	Completely miscible
Solubility in other solvents	No data available
Partition Coefficient n-octanol/water	Log Pow: -0,566
Decomposition temperature	No data available
Viscosity	
Viscosity, dynamic	2 mPa.s (20 °C)
Viscosity, kinematic	No data available
Oxidizing properties	No data available

9.2 Other safety information

No data available



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Section 10: Stability and Reactivity

10.1 Reactivity	No decomposition if stored and applied as directed
10.2 Chemical Stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	Product will not undergo hazardous polymerization.
10.4 Conditions to avoid	No data
10.5 Incompatible materials	Strong oxidizing agents
10.6 Hazardous decomposition products	Carbon dioxide and carbon monoxide Hydrocarbons Nitrogen oxides (NOx)

Section 11: Toxicological Information

Product Information

11.1 Toxicological effects:

Information on likely routes of exposure:

Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity:

Acute inhalation toxicity:

LD50(Rat): 1.582 mg/kg
LC50(Rat): > 5,1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity:

LD50(Guinea pig): > 5 g/kg

Components:

γ-butyrolactone

Acute oral toxicity:

Acute inhalation toxicity:

LD50(Rat): 1.582 mg/kg
LC50(Rat): > 5,1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity:

LD50(Guinea pig): > 5 g/kg

Skin corrosion/irritation

Not classified based on available information.



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Product:

Result: No skin irritation

Components:

γ-butyrolactone

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

Result: Corrosive

Components:

γ-butyrolactone

Result: Corrosive

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Product:

Test Type: Local lymph node assay

Species: Mouse

Assessment: Does not cause skin sensitisation.

Components:

γ-butyrolactone

Test Type: Local lymph node assay

Species: Mouse

Assessment: Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro:

Test Type: Ames test

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Genotoxicity in vivo:

Test Type: In vivo micronucleus test

Test species: Mouse

Result: negative

Components:

γ-butyrolactone

Genotoxicity in vitro :

Test Type: Ames test

Result: negative: Test Type: Chromosome aberration test in vitro

Result: negative



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Genotoxicity in vivo :

Test Type: In vivo micronucleus test

Test species: Mouse

Result: negative

Carcinogenicity

Not classified based on available information.

Product:

Species: Rat, (male)

Application Route: Oral

NOAEL: 225 mg/kg bw/day

Result: negative

Target Organs: No specific target organs noted

GLP: yes

Remarks: No significant adverse effects were reported

Species: Rat, (female)

Application Route: Oral

NOAEL: 225 mg/kg bw/day

Result: negative

Target Organs: No specific target organs noted

GLP: yes

Remarks: Significant toxicity observed in testing

Species: Mouse, (male and female)

Application Route: Oral

NOAEL: 262 mg/kg bw/day

Result: negative

Target Organs: No specific target organs noted

GLP: yes

Remarks: Significant toxicity observed in testing

Components:

γ -butyrolactone

Species: Rat, (male)

Application Route: Oral

NOAEL: 225 mg/kg bw/day

Result: negative

Target Organs: No specific target organs noted

GLP: yes

Remarks: No significant adverse effects were reported

Species: Rat, (female)

Application Route: Oral

NOAEL: 225 mg/kg bw/day

Result: negative

Target Organs: No specific target organs noted



Gamma Butyrolactone

GLP: yes

Remarks: Significant toxicity observed in testing

Species: Mouse, (male and female)

Application Route: Oral

NOAEL: 262 mg/kg bw/day

Result: negative

Target Organs: No specific target organs noted

GLP: yes

Remarks: Significant toxicity observed in testing

Reproductive toxicity

Not classified based on available information.

Product:

Effects on foetal development :

Species: Rat, male and female

Strain: Sprague-Dawley

Application Route: Oral

Dose: 0,10,50,125,500 mg/kg bw/day

Duration of Single Treatment: 21 d

General Toxicity Maternal: 500 mg/kg bw/day

Teratogenicity: 500 mg/kg bw/day

Result: No teratogenic effects

GLP: no

Remarks: No significant adverse effects were reported

Components:

γ -butyrolactone

Effects on foetal development :

Species: Rat, male and female

Strain: Sprague-Dawley

Application Route: Oral

Dose: 0,10,50,125,500 mg/kg bw/day

Duration of Single Treatment: 21 d

General Toxicity Maternal: 500 mg/kg bw/day

Teratogenicity: 500 mg/kg bw/day

Result: No teratogenic effects

GLP: no

Remarks: No significant adverse effects were reported

STOT - single exposure

May cause drowsiness or dizziness.

Components:

γ -butyrolactone

Exposure routes: Inhalation

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

STOT - repeated exposure

Not classified based on available information.



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Repeated dose toxicity

Product:

Species: Rat, male

NOAEL: 225 mg/kg

Application Route: Oral

Exposure time: 90-day

Method: Gavage

GLP: yes

Target Organs: No specific target organs noted

Species: Rat, female

NOAEL: 450 mg/kg

Application Route: Oral

Exposure time: 90-day

Method: Gavage

GLP: yes

Target Organs: No specific target organs noted

Species: Mouse, male and female

NOAEL: 525 mg/kg

Application Route: Oral

Exposure time: 90-day

Method: Gavage

GLP: yes

Target Organs: No specific target organs noted

Components:

γ -butyrolactone

Species: Rat, male

NOAEL: 225 mg/kg

Application Route: Oral

Exposure time: 90-day

Method: Gavage

GLP: yes

Target Organs: No specific target organs noted

Species: Rat, female

NOAEL: 450 mg/kg

Application Route: Oral

Exposure time: 90-day

Method: Gavage

GLP: yes

Target Organs: No specific target organs noted

Species: Mouse, male and female

NOAEL: 525 mg/kg



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Application Route: Oral
 Exposure time: 90-day
 Method: Gavage
 GLP: yes
 Target Organs: No specific target organs noted

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

Section 12: Ecological Information

12.1 Toxicity

Product: Toxicity to fish:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 56 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h
Toxicity to algae:	ErC50 (Desmodesmus subspicatus (green algae)): > 1.000 mg/l EC10 (Desmodesmus subspicatus (green algae)): 84,4 mg/l
Toxicity to bacteria:	IC50 (Ciliate (Tetrahymena pyriformis)): 4.518 mg/l
Components: γ-butyrolactone	
Toxicity to fish:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 56 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h
Toxicity to algae:	ErC50 (Desmodesmus subspicatus (green algae)): > 1.000mg/l EC10 (Desmodesmus subspicatus (green algae)): 84,4mg/l



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12.2 Persistence and degradability

Product:

Biodegradability:

Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 14 d

Components:

γ-butyrolactone

Biodegradability:

Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 14 d

12.3 Bioaccumulative potential

Components:

γ-butyrolactone

Partition coefficient: n-octanol/water:

log Pow: -0,566 (25 °C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Components:

γ-butyrolactone

Assessment:

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

Additional ecological information:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life.

Section 13: Disposal considerations

13.1 Waste treatment methods

Product:

The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.



Gamma Butyrolactone

Contaminated packaging:

Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: Transport Information

14.1 UN number

ADN: Not dangerous goods

ADR: Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
 INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
 RID: Not dangerous goods

14.2 UN proper shipping name

ADN: Not dangerous goods **ADR:** Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
 INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
 RID: Not dangerous goods

14.3 Transport hazard class(es)

ADN: Not dangerous goods
ADR: Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
 INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
 RID: Not dangerous goods

14.4 Packing group

ADN: Not dangerous goods
ADR: Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
 INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
 RID: Not dangerous goods

14.5 Environmental hazards **ADN:** Not applicable **ADR:** Not applicable
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not applicable
 INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not applicable
 INTERNATIONAL MARITIME DANGEROUS GOODS: Not applicable
 RID: Not applicable

14.6 Special precautions for user

Not applicable



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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship Type: Not applicable

Hazard code(s): Not applicable

Pollutant Category: Not applicable

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants: Not applicable

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Not applicable

The components of this product are reported in the following inventories:

DSL	All components of this product are on the Canadian DSL
AICS	On the inventory, or in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
TSCA	For Cosmetic Use Only

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

15.2 Chemical safety assessment

No data available



Gamma Butyrolactone

Section 16: Other Information

Classification procedure:

H302	Harmful if swallowed.	On basis of test data.
H318	Causes serious eye damage.	On basis of test data.
H336	May cause drowsiness or dizziness.	Calculation method

Full text of H-Statements

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.

Further information

Other information:

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

