Material Safety Data Sheet
gamma-Butyrolactone, 99+% 

ACC# 63860

Section 1 - Chemical Product and Company Identification

**MSDS Name:** gamma-Butyrolactone, 99+%  
**Catalog Numbers:** AC108130000, AC108130010, AC108130025, AC108130250, AC108135000, AC9480150  
**Synonyms:** GBL; Dihydro-2(3H)-furanone; 1,2-Butanolide; 1,4-Butanolide; 4-Hydroxybutanoic acid lactone; gamma-Hydroxybutyric acid lactone.  
**Company Identification:**  
- Acros Organics N.V.  
- One Reagent Lane  
- Fair Lawn, NJ 07410  
**For information in North America, call:** 800-ACROS-01  
**For emergencies in the US, call CHEMTREC:** 800-424-9300

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
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<tbody>
<tr>
<td>96-48-0</td>
<td>gamma-Butyrolactone</td>
<td>&gt;99</td>
<td>202-509-5</td>
</tr>
</tbody>
</table>

**Hazard Symbols:** XN  
**Risk Phrases:** 40

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: colorless liquid. Hygroscopic (absorbs moisture from the air). **Caution!** The toxicological properties of this material have not been fully investigated. May cause eye, skin, and respiratory tract irritation.  
**Target Organs:** No data found.

**Potential Health Effects**  
**Eye:** May cause eye irritation.  
**Skin:** May cause skin irritation.  
**Ingestion:** May cause digestive tract disturbances. The toxicological properties of this substance have not been fully investigated. May be harmful if swallowed.  
**Inhalation:** May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.  
**Chronic:** No information found.

Section 4 - First Aid Measures
**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** None reported.

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**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

**Flash Point:** 98 deg C (208.40 deg F)

**Autoignition Temperature:** 455 deg C (851.00 deg F)

**Explosion Limits, Lower:** 3.60 vol %

**Upper:** 16.00 vol %

**NFPA Rating:** (estimated) Health: 1; Flammability: 1; Instability: 0

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**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

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**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

**Storage:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed. Store protected from moisture.

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**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

**Exposure Limits**
### Section 9 - Physical and Chemical Properties

**Physical State:** Liquid  
**Appearance:** colorless  
**Odor:** Mild caramel odor  
**pH:** Not available.  
**Vapor Pressure:** 1.5 hPa @ 20 C  
**Vapor Density:** 3.0  
**Evaporation Rate:** Not available.  
**Viscosity:** Not available.  
**Boiling Point:** 204 - 205 deg C  
**Freezing/Melting Point:** -45 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Miscible.  
**Specific Gravity/Density:** 1.1200g/cm3  
**Molecular Formula:** C4H6O2  
**Molecular Weight:** 86.09

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.  
**Conditions to Avoid:** Excess heat, exposure to moist air or water.  
**Incompatibilities with Other Materials:** Strong oxidizing agents - strong acids - strong bases - strong reducing agents.  
**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.  
**Hazardous Polymerization:** Has not been reported.

### Section 11 - Toxicological Information

**RTECS#:**  
**CAS#** 96-48-0: LU3500000  
**LD50/LC50:**  
**CAS#** 96-48-0:  
Dermal, guinea pig: LD50 = >5 gm/kg;
Draize test, rabbit, skin: 500 uL Severe;  
Inhalation, rat: LC50 = >5100 mg/m3/4H;  
Oral, mouse: LD50 = 1460 mg/kg;  
Oral, rat: LD50 = 1540 mg/kg;  
**Carcinogenicity:**  
CAS# 96-48-0:  
IARC: IARC Group 3 - not classifiable  
Epidemiology: No information available.  
Teratogenicity: No information available.  
Reproductive Effects: No information available.  
Neurotoxicity: No information available.  
Mutagenicity: No information available.  
Other Studies: None reported.

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.  
**RCRA P-Series:** None listed.  
**RCRA U-Series:** None listed.

Section 14 - Transport Information

<table>
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<tr>
<th>US DOT</th>
<th>IATA</th>
<th>RID/ADR</th>
<th>IMO</th>
<th>Canada TDG</th>
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<td>UN Number:</td>
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<td>Packing Group:</td>
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Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**  
CAS# 96-48-0 is listed on the TSCA inventory.  

**Health & Safety Reporting List**  
None of the chemicals are on the Health & Safety Reporting List.  

**Chemical Test Rules**  
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

Section 313
No chemicals are reportable under Section 313.

Clean Air Act:
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 96-48-0 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
XN

Risk Phrases:
R 40 Limited evidence of a carcinogenic effect.

Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 39 Wear eye/face protection.

WGK (Water Danger/Protection)
CAS# 96-48-0: 1

Canada - DSL/NDSL
CAS# 96-48-0 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of D2B.

Canadian Ingredient Disclosure List

Exposure Limits

Section 16 - Additional Information

MSDS Creation Date: 10/21/1998
Revision #2 Date: 2/07/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any
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