

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name: 4-Butyrolactone

Product Code: B31540

Supplier: Pfaltz & Bauer, Inc.
172 E. Aurora Street
Waterbury, CT 06708 USA

Phone: 203-574-0075

FAX: 203-574-3181

Emergency Phone: INFOTRAC, US: 1-800-535-5053
INFOTRAC, INTERNATIONAL: +1-352-323-3500

SECTION 2: HAZARDS IDENTIFICATION

Statement of Hazard: Irritant, Narcotic effects , Respiratory irritant

Acute Health Hazard: Irritant to eyes, skin, mucous membranes and respiratory system.
May be harmful by ingestion, skin absorption and inhalation.

Chronic Health Hazard: Target organ effect

HMIS Rating: H: 2 F: 1 P: 0

NFPA Rating: H: 2 F: 1 R: 0

To the best of our knowledge, the toxicological properties of this chemical have not been thoroughly investigated. Use appropriate procedures and precautions to prevent or minimize exposure.

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
GHS Classification in accordance with Regulation (EC) No 1272/2008:

Acute toxicity, dermal (Category 4), H312
Acute toxicity, inhalation (Category 4), H332
Acute toxicity, oral (Category 4), H302
Serious eye damage/eye irritation (Category 2A), H319
Skin corrosion/irritation (Category 2), H315
Specific target organ toxicity, single exposure (Category 1), H370
Specific target organ toxicity, single exposure; Narcotic effects (Category 3), H336
Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3), H335

Pictogram:



Signal Word: Danger

Hazard Statement(s): H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H370 Causes damage to organs.

Precautionary Statement(s): P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 IF ON SKIN: wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311 IF exposed: call a POISON CENTER or doctor/physician.
P332+P313 IF SKIN irritation occurs: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

SECTION 3: COMPOSITION/INFORMATION on INGREDIENTS

Chemical Name: 4-Butyrolactone

Synonyms: gamma-Butyrolactone; GBL; 1,2-Butanolide; 4-Hydroxybutyric acid lactone; 1,4-Butanolide; 4-Hydroxybutanoic acid lactone

CAS Number: 96-48-0

MDL Number: MFCD00005386

EINECS Number: 202-509-5
Beilstein Registry Number: 0105248
Molecular Formula: C₄H₆O₂
Molecular Weight: 86.09
Content: As specified in product name.

SECTION 4: FIRST AID MEASURES

Eye Contact: Flush eyes with large amounts of water for fifteen minutes. Separate eyelids with fingers. If irritation persists, seek medical attention.

Skin Contact: Wash skin with soap and water. If irritation persists, seek medical attention.

Ingestion: Do not induce vomiting. Seek medical attention.

Inhalation: Move to a fresh air environment. Contact a physician if breathing becomes difficult.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point (°C): 98

Explosion Limits: Lower, % by volume: 0.3
Upper, % by volume: 16

Auto Ignition Temperature (°C): 455

Extinguishing Media: Carbon dioxide, dry chemical powder, alcohol-resistant foam, or water spray

Protective Equipment: Wear self-contained respirator and fully protective impervious suit.

Specific Hazards: May emit hazardous fumes under fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Protection: Wear a self-contained breathing apparatus, rubber boots and gloves, and disposable coveralls. Dispose of coveralls after use. Remove from ignition sources if safe to do so. Follow emergency response plan and contact proper authorities if needed. Keep unprotected persons away.

Environmental Protection: Keep spills out of sewers and bodies of water. Dike and contain the spill with inert material. Absorb on sand, vermiculite or diatomite. Transfer material to a container for disposal or recovery. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING and STORAGE

Handling and Storage: Avoid breathing dust, vapor, mist or gas. Avoid contact with skin or eyes. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Open and handle container with care. Keep ignition sources away. Store in a tightly closed container in a dry, well-ventilated place.

Sensitivities: Hygroscopic, Moisture

Storage Temperature (°C): 15 to 30

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use product in a well ventilated area or under a fume hood. Use proper lab equipment while handling this product. Keep away from incompatible materials for possible risk of hazardous reaction.

Eye Protection: Wear appropriate protective eyeglass or chemical safety goggles. Make sure that there is an eyewash station in your vicinity.

Skin Protection: Wear impervious gloves and protective clothing.

Respiratory Protection: Use a NIOSH approved respirator when exposure limits are exceeded or if irritation or other symptoms are experienced.

<u>Exposure Limits:</u>	<u>Country</u>	<u>Source</u>	<u>Type</u>	<u>Value</u>
	USA	ACGIH	TWA	Not Available
	USA	OSHA	STEL	Not Available
	USA	OSHA	PEL	Not Available

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

Appearance: Colorless clear liquid

Odor: Characteristic

Odor Threshold: Not Available

Flash Point (°C): 98

Auto Ignition Temperature (°C): 455

<u>UEL % by Volume:</u>	16
<u>LEL % by Volume:</u>	0.3
<u>Melting Point (°C):</u>	-45
<u>Boiling Point (°C):</u>	204
<u>Evaporation Rate:</u>	Not Available
<u>pH Value:</u>	Not Available
<u>Density (g/cm³):</u>	1.13
<u>Refractive Index (n^{20D}):</u>	1.4360
<u>Viscosity:</u>	Not Available
<u>Solubility in Water:</u>	Soluble
<u>Solubility in Other:</u>	Soluble in Ether, Alcohols, Benzene, Acetone
<u>Vapor Pressure (mmHg):</u>	Not Available
<u>Vapor Density (Air=1):</u>	3

SECTION 10: STABILITY and REACTIVITY

<u>Stability:</u>	Stable under normal temperatures and pressures.
<u>Incompatibility:</u>	Strong oxidizing agents
<u>Reactivity:</u>	Product may react with incompatible materials to release other hazardous substances.
<u>Conditions to Avoid:</u>	Heat, flame, sparks, other ignition sources.
<u>Hazardous Decomposition Products:</u>	Carbon oxides

SECTION 11: TOXICOLOGICAL INFORMATION

<u>RTECS Reference:</u>	LU3500000
<u>Target Organs:</u>	Central Nervous System

Toxicity Data: Oral Rat LD₅₀ mg/kg: 1540.00
Dermal Guinea Pig LD₅₀ mg/kg: 5000.00
Inhalation Rat LC₅₀, mg/m³ - h: 5100.00 - 4

Carcinogenicity: National Toxicology Program (NTP) listed:
Not Available

International Agency for Research on Cancer (IARC) listed: Not Available

Potential Symptoms: Not Available

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Water flea LC₅₀: 500.00 mg/l - 500.00 hrs.
Green Algae LC₅₀: 360.00 mg/l - 72 hrs.

SECTION 13: DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service. Dispose in a manner consistent with federal, state and local environmental regulations.

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Name: Not D.O.T.-Regulated

IMDG Shipping Name: Not Regulated

Marine Pollutant: No

IATA Shipping Name: Not Regulated

SECTION 15: REGULATORY INFORMATION

United States

Toxic Substance Control Act (TSCA) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 302) listed: No

Superfund Amendments and Reauthorization Act (SARA 311/312) listed: No

Superfund Amendments and Reauthorization Act (SARA 313) listed: No

European Union

European Inventory of Existing Chemical Substances (EINECS): 202-509-5

GHS Classification in accordance with Regulation (EC) No 1272/2008: Yes

Canada

Canadian Domestic Substances List (DSL) listed: Yes

Canadian Non-Domestic Substances List (NDSL) listed: No

SECTION 16: OTHER INFORMATION

Date Prepared: 6/21/2023

The information above is presented in good faith. It is believed to be accurate and represents the best information currently available to us. However, we make no warranty with respect to such information and we assume no liability resulting from its use. The user should consider this information as a supplement to other information that may be available and make independent judgement to ensure proper use to protect the health and safety of employees and the environment. Pfaltz and Bauer shall not be held liable for any damage resulting from handling or from contact with the above product.