



Section 1. Product and Company Identification

Product Name 1,3-Butylene Glycol
CAS Number 107-88-0

Parchem - fine & specialty chemicals
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EMERGENCY RESPONSE NUMBER
CHEMTEL
Toll Free US & Canada: 1 (800) 255-3924
All other Origins: 1 (813) 248-0585
Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture

OSHA Regulatory Status This material is non-hazardous as defined by the American OSHA Hazard Communication Standard (29CFR 1910.1200).

Potential Health Effects

Principle Routes of Exposure: Inhalation, Eye contact, Skin contact, Ingestion.

Main Symptoms: Cough

Target Organ Effects: Lung irritation

Section 3. Composition / Information on Ingredients

Common Name 1,3-Butylene Glycol
Formula C₄H₁₀O₂
CAS Number 107-88-0

COMPONENT	CAS NUMBER	CONCENTRATION
1,3-Butylene Glycol	107-88-0	> 99.5%

Section 4. First Aid Measures

General advice: Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Inhalation: Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Eyes: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Skin: Wash off immediately with plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Ingestion: Call a physician immediately. Do not induce vomiting without medical advice.

Main symptoms: Cough.

Special hazard: Lung irritation.



Notes to physician: Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

Section 5. Firefighting Measures

OSHA Flammability classification: Combustible liquid Class III B

Suitable extinguishing media: Foam. dry chemical. carbon dioxide (CO₂). water spray.

Extinguishing media which must not be used for safety reasons: Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases: Under conditions giving incomplete combustion, hazardous gases produced may consist of: carbon monoxide (CO); carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapors are heavier than air and may spread along floors

Special protective equipment for fire-fighters: Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear

Precautions for fire-fighting: Cool containers / tanks with water spray. Dike and collect water used to fight fire. Water run-off can cause environmental damage. Keep people away from and upwind of fire.

Section 6. Accidental Release Measures

Personal precautions: Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition. For emergency responders: Personal protection see section 8.

Environmental precautions: Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

Methods for containment: Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up: Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

Section 7. Handling and Storage

Handling

Advice on safe handling: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.



Advice on protection against fire and explosion: Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material.

Storage

Technical measures/Storage conditions: Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Keep at temperatures between 15 and 27 °C (60 and 80 °F).

Advice on common storage: Incompatible products: strong oxidizing agents

Section 8. Exposure Controls / Personal Protection

Exposure limits United States of America: No exposure limits established.

Occupational exposure controls

Engineering measures: General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice: Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures: When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Respiratory protection: Respirator with filter for organic vapor. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH.

Hand protection: Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eye protection: Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Skin and body protection: Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Environmental exposure controls: If possible use in closed systems. If leakage cannot be prevented, the substance needs to be contained and removed at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

Section 9. Physical and Chemical Properties

Physical state: Liquid

Color: Colorless

Odor: Weak

Flash Point: 239°F (115°C) [ISO 2719]

Auto ignition Temperature: 770°F (410°C) [DIN 51794]

Lower explosion Limit: 1.9 Vol %

Upper explosion Limit: 12.6 Vol %

Melting point/range: -71°F (-57°C)

Boiling point/range (1 atm): 408°F (209°C)

Vapor Pressure

Values [hPa]	Values [kPa]	Values [atm]	At °C	At °F
< 1	< 0.1	< 0.001	20	68
1.8	0.18	0.002	50	122

Density

Values (g/cm ³)	At °C	At °F
1.0035	20	68

Refractive index (at 20°C): 1,440

Viscosity (at 20°C): 131.8 mPa*s

pH (at 20°C): miscible

Water solubility: 6.1 (500 g/l)

Log Pow: -0.9 (measured)

Vapor density (at 20°C): 3.2 (Air = 1)

Surface tension (at 20°C): 72.6 mN/m (1 g/l)

Remarks: Hygroscopic

Section 10. Stability and Reactivity

Stability: Stable under recommended storage conditions.

Conditions to avoid: Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

Materials to avoid: Strong oxidizing agents.

Hazardous decomposition products: No decomposition if stored and applied as directed.

Section 11. Toxicological Information

Principle Routes of Exposure: Inhalation, Eye contact, Skin contact, Ingestion

Acute toxicity				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	22800 mg/kg	rat, male	
Inhalative	LC0	290 mg/m ³	rat, male	OECD 403

Irritation and corrosion		
Target Organ Effects	Species	Result
Skin	Rabbit	No skin irritation
Eyes	Rabbit	Mild eye irritation

Sensitization			
Target Organ Effects	Species	Evaluation	Method
Skin	Human Experience	Not sensitizing	Patch-test

Subacute, subchronic and prolonged toxicity				
Type	Dose	Species	Method	
Chronic toxicity	NOAEL: 5000 mg/kg/d	rat, male/female	Oral	Two year

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Type	Dose	Species	Evaluation	Method	
Mutagenicity		Rat M/F	negative		in vivo
Reproductive toxicity	LOAEL 12000 mg/kg/d	rat		Oral	
Reproductive toxicity	NOAEL 5000 mg/kg/d	rat		Oral	
Developmental Toxicity	NOAEL 2500 mg/kg/d	rat		Oral	Maternal toxicity
Developmental Toxicity	NOAEL 12000 mg/kg/d	rat		Oral	Teratogenicity
Developmental Toxicity	LOAEL 5000 mg/kg/d	rat		Oral	Fetal toxicity
Developmental Toxicity	NOAEL 2500 mg/kg/d	rat		Oral	Fetal toxicity
Carcinogenicity	NOAEL 5000 mg/kg/d	rat		Oral	



Main symptoms: cough.

Note: Special hazards or target organ effects are given as a generic warning, substance specific data is not available. Handle in accordance with good industrial hygiene and safety practice.

Section 12. Ecological Information

Acute aquatic toxicity

Species	Exposure Time	Dose	Method
Daphnia magna (water flea)	48 h	EC50: > 1000 mg/l	OECD 202
Desmodesmus subspicatus	72 h	EC50: > 1070 mg/l (growth rate)	OECD 201
Oryzias latipes (Medaka)	96 h	LC50: > 100 mg/l	OECD 203
Activated sludge (bacteriae)	3 h	EC20: > 100 mg/l	OECD 209

Long term toxicity

Type	Species	Dose	Method
Reproductive toxicity	Daphnia magna (water flea)	EC50: > 85 mg/l/21d	OECD 202

Biodegradation: 81% (29 d), activated sludge (domestic), aerobic, non-adapted, OECD 301 B.

PBT and vPvB assessment: This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

Note: Avoid release to the environment.

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

ICAO/IATA: Not restricted

IMDG: Not restricted

D.O.T. (49CFR): Not restricted

TDG (Transport of Dangerous Goods) Canada: Not restricted

Section 15. Regulatory Information

Federal and State Regulations: Components of the product are listed in the quoted regulations. For details please refer to the regulations directly. This list is not exhaustive, please check for other applicable regulations.

Federal Regulations: This product is listed on the TSCA inventory



1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0
40CFR 63.100-.106, Table 1: Group II

International Inventories

AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2035297 (EU)
ENCS (2)-235 (JP)
ISHL (2)-235 (JP)
KECI KE-03787 (KR)
PICCS (PH)
TSCA (US)
NZIoC (NZ)

HMIS Rating

Health Hazard: 0

Flammability: 1

Physical Hazard: 0

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

REVISION DATE: 7/9/2015

