



MATERIAL SAFETY DATA SHEET

2522 Plantation Center Drive
Matthews, NC 28105
(704) 845 9440
www.ciscochem.com

1. PRODUCT NAME: Glycol Ether PNB
2. CHEMICAL NAME: Propylene Glycol (Mono) Butyl Ether
3. SYNONYMS:
4. CAS NUMBER: 5131-66-8
5. COMPOSITION: 1-Butoxy-2-Propanol 95.0 - 97.0 %
2-Butoxy-1-Propanol 3.0 - 5.0 %

**IN CASE OF
TRANSPORT EMERGENCY
CONTACT CHEMTREC
USA: 1-800-424-9300
INTERNATIONAL: 1-703-527-3887**

6. PROPERTIES: Appearance: Liquid. Colorless.
Odor: Mild odor.
Odor Threshold: No value available.
pH: Not applicable.
Boiling Point/Boiling Range: ~ 170 °C (338 °F) @ 760 mm Hg
Freezing Point/Melting Point: < -85 °C (-121 °F)
Flash Point: ~ 62 °C (143.6 °F) (Abel Closed Cup)
Auto-ignition: No Data Available.
Flammability: OSHA/NFPA Class II combustible liquid.
Lower Flammable Limit: No Data Available.
Upper Flammable Limit: No Data Available.
Explosive Properties: No Data Available.
Oxidizing Properties: No Data Available.
Vapor Pressure: ~ 0.6 mm Hg @ 20 °C (68 °F)
Evaporation Rate: No Data Available.
Relative Density: ~ 0.88 @ 25 °C (77 °F)
Relative Vapor Density: ~ 4.6 @ 15.5 - 32.2 °C (59.9 - 89.96 °F) (Air = 1.0)
Viscosity: No Data Available.
Solubility (Water): Slight (.1 to Less Than 1 Percent).
Partition Coefficient (Kow): No Data Available.
Chemical Stability: Stable.
Conditions to Avoid: Extended contact with air or oxygen. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Heat, sparks, open flame, other ignition sources, and oxidizing conditions. Ignition may occur at temperatures below those published in the literature as autoignition or ignition temperatures.
Substances to Avoid: Air or oxygen. Strong acids. Strong oxidizing agents.
Decomposition Products: No Data Available.
Hazardous Polymerization: Not expected to occur.
Reactions with Air and Water: Not expected to occur.

7. HAZARDS: Combustible. Moderate eye irritant. Moderate skin irritant. Slight skin absorption hazard.

8. FIRE FIGHTING INFORMATION: Flammable Properties
Classification
OSHA/NFPA Class II combustible liquid.
Flash Point:
~ 62 °C (143.6 °F) (Abel Closed Cup)
Auto-Ignition Temperature
No Data Available.
Lower Flammable Limit

No Data Available.
Upper Flammable Limit
No Data Available.
Extinguishing Media
Suitable: SMALL FIRE: Use dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Use water spray, water fog or regular foam. Do not use straight streams.
Unsuitable: Do not use solid water stream/may spread fire.
Protection of Firefighters
Protective Equipment/Clothing: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.
Fire Fighting Guidance: When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. When heated above the flash point, releases flammable vapors. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
Hazardous Combustion Products: Thermal decomposition may produce carbon monoxide and other toxic vapors

9. PERSONAL PROTECTION
Engineering Controls
Either local exhaust or general room ventilation is usually required. If handling results in mist or aerosols, special ventilation may be [needed].
MEASURES:

10. FIRST AID
Personal Protection
PROCEDURES: Inhalation: No occupational exposure limit(s) have been established for this material or its components. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use.
Skin: Wear chemical resistant gloves such as: Neoprene. When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. The equipment must be cleaned thoroughly after each use.
Eye: Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor.
Additional Remarks
Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

11. EXPOSURE LIMITS:
1-Butoxy-2-Propanol US (ACGIH) / 2002
US (OSHA) / 2002
2-Butoxy-1-Propanol US (ACGIH) / 2003
US (OSHA) / 2003

12. TOXICOLOGICAL INFORMATION:
1-Butoxy-2-Propanol 5131-66-8
Acute Toxicity - Lethal Doses
LD50 (Oral) Rat ~ 4980 MG/KG



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LD50 (Skin) Rabbit 3100 MG/KG

Target Organ Effects

Skin. Eye.

Carcinogenicity

Not listed by IARC, NTP, or OSHA.

2-Butoxy-1-Propanol 15821-83-7

Repeated Dose Toxicity

No known chronic health effects.

Carcinogenicity

Not listed by IARC, NTP, or OSHA.

13. ECOLOGICAL INFORMATION: This material is not classified as harmful or toxic to fish. This material is not classified as harmful or toxic to invertebrates.
14. DISPOSAL CONSIDERATIONS: Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes. Comply with federal, state, or local regulations for disposal.
15. CARCINOGENIC PROPERTIES & NOTIFICATIONS: Not listed by IARC, NTP, or OSHA.
16. TRANSPORT INFORMATION: Special Requirements
Not regulated by U.S. Department of Transportation (USDOT) when shipped in packages of 119 gallons or less. If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in the composition section of this sheet, based on final composition of your product.
Proper Shipping Name
CFR_RAIL Combustible liquid, n.o.s. (PROPYLENE GLYCOL MONOBUTYL ETHER)
NON_REG PROPYLENE GLYCOL MONO BUTYL ETHER
ID No. CFR_RAIL NA1993
Hazard Class CFR_RAIL Combustible Liquid
PG CFR_RAIL III
17. HANDLING & STORAGE: Handling
For industrial use only. Keep container tightly closed when not in use. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Use only non-sparking tools. Properly ground containers before beginning transfer. When transferring propylene glycol ethers with flash points at or below 60 oC (140 oF) into fixed site vessels, the vessel should be purged and inerted prior to transfer. Propylene glycol ethers may be transferred into air atmospheres if the temperature of the product and the ambient temperature within the shipping container are both at least 16.7 oC (30 oF) less than the product's flash point. After loading, nitrogen blanketing is required if the contents of the transportation container could exceed a temperature of 16.7 oC (30 oF) less than the product flash point during any subsequent transportation activities. If the product flash point is less than 16.7 oC (30 oF) above either the ambient temperature of the transportation container or the storage temperature of the product, the container should be purged and inerted with nitrogen prior to loading and nitrogen blanketed after loading. Handle empty containers with care. Flammable/combustible residue remains after emptying. The purging of all empty shipping containers, regardless of the flashpoint, is recommended when received with air atmospheres. Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry.

Storage



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Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents. Some plastics/rubbers are attacked by Glycol Ethers/Ether Esters. This product will absorb water if exposed to air. Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper. For fixed site operations, propylene glycol ethers with flash points at or below 60 oC (140 oF) should be stored under nitrogen blanketing.

18. ACCIDENTAL Release Response

RELEASE Eliminate all sources of ignition. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. **MEASURES:** Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material.

19. REGULATORY SARA 302/304

INFORMATION: No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to

Section 311 & 312:

Immediate (Acute) Health Hazard.

Delayed (Chronic) Health Hazard.

Fire Hazard.

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

State Reporting:

This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

Massachusetts Substances List (MSL) - Extraordinarily hazardous substances must be identified when present in materials at levels greater than state specified criterion. The criterion is $\geq 0.0001\%$. Hazardous Substances (MSL-HS) on the MSL must be identified when present in materials at greater than the state specified criterion. The criterion is $\geq 1\%$. Components with CAS numbers present in this material, at levels specified in Section 2 - Composition do not require reporting under the statute.

Hazardous Substances (PA-HS) must be identified when present in materials at greater than the state specified criterion. The criterion is $\geq 1\%$. Environmental Hazards (PA-EH) must be identified when present in materials at levels greater than the state specified criterion. The criterion is $\geq 1\%$. Components with CAS numbers in this material, at levels specified in this MSDS - Composition, do not require reporting under the statute.