

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: Glycol Ether PNB
CAS-No.	: 5131-66-8
Formula	: C7H16O2
Synonyms	: 1-Butoxy-2-Propanol, Propylene Glycol (Mono) Butyl Ether, Propylene Glycol n-Butyl Ether; PNB

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Solvent
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1.3. Supplier

ECOLINK

2177 Flintstone Dr.
Suite A
Tucker, GA 30084
770-621-8240(t)
www.ecolink.com

1.4. Emergency telephone number

Emergency number	: INFOTRAC 800-535-5053
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 4	H227	Combustible liquid
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2B	H320	Causes eye irritation
Specific target organ toxicity (single exposure) Category 3	H336	May cause drowsiness or dizziness

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Warning

Hazard statements (GHS-US)

: H227 - Combustible liquid
H315 - Causes skin irritation
H320 - Causes eye irritation
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking heat, sparks, open flames, hot surfaces
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash Skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, face protection
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - If inhaled: Remove person to fresh air and keep 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

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P312 - Call a poison center/doctor if you feel unwell.
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use dry sand, D-powder, alcohol resistant foam to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container in an approved waste disposal plant

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
1-Butoxy-2-Propanol (Main constituent)	(CAS-No.) 5131-66-8	>95.0	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H336
2-Butoxy-1-Propanol *	(CAS-No.) 15821-83-7	<=5.0	

* Substance listed as an impurity

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Consult a physician/doctor if necessary. Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Show this safety data sheet to the doctor in attendance.

First-aid measures after inhalation : If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention.

First-aid measures after skin contact : Immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

First-aid measures after eye contact : Immediately flush eyes thoroughly with plenty of water and continue flushing for at least 15 minutes. Seek medical attention if discomfort persists.

First-aid measures after ingestion : If large quantity swallowed, give lukewarm water (pint/ ½ liter) if victim completely conscious/alert. Do NOT induce vomiting. Risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Practically non-toxic if swallowed (LD50 oral 2000/5000 mg/kg). Causes skin irritation. Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Slightly harmful by inhalation. Causes serious eye irritation. Caution! Substance is absorbed through the skin.

Symptoms/effects : May cause drowsiness or dizziness.

Symptoms/effects after inhalation : SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS: Central nervous system depression. Headache. Nausea. Dizziness. Coordination disorders.

Symptoms/effects after skin contact : Symptoms similar to those listed under inhalation. Tingling/irritation of the skin. Irritation.

Symptoms/effects after eye contact : Irritation of the eye tissue. Mild eye irritation.

Symptoms/effects after ingestion : No specific information available. SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS: Symptoms similar to those listed under inhalation.

Chronic symptoms : No effects known.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : 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 extinguishing media : Do not use solid water stream – may spread fire.

5.2. Specific hazards arising from the chemical

- Fire hazard : 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 distances or use unmanned hose holders or monitor nozzles. Move containers from fire area if it can be done without risk. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising spund from venting safety devices or discoloration from 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.
- Reactivity : Reacts with (strong) oxidizers: (increased) risk of fire/explosion. Prolonged storage: may form peroxides. This reaction is accelerated on exposure to light and on exposure to air.

5.3. Special protective equipment and precautions for fire-fighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighborhood close doors and windows.
- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Face-shield. Protective clothing.
- Emergency procedures : Ventilate spillage area. Mark the danger area. No naked flames. Wash contaminated clothes. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply.
- Methods for cleaning up : Take up liquid spill into absorbent material. Take up liquid spill into absorbent material, e.g.: sand/earth. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Notify authorities if product enters sewers or public waters.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : For industrial use.
Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Before use: check for peroxides and eliminate them. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use.

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Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : 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, this product and other propylene glycol ethers with flash points at or below 60 °C (140 °F) should be stored under nitrogen blanketing.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Consult local authorities for acceptable exposure limits.

8.2. Appropriate engineering controls

Appropriate engineering controls : Either local exhaust or general room ventilation is usually required. If handling results in mist or aerosols, special ventilation may be [needed].

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. viton. GIVE GOOD RESISTANCE: neoprene. GIVE LESS RESISTANCE: nitrile rubber. GIVE POOR RESISTANCE: natural rubber

Hand protection:

Neoprene gloves

Eye protection:

Face shield. Safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

High gas/vapour concentration: gas mask with filter type A

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Color : Colorless
Odor : Ether-like odor
Odor threshold : No data available
pH : No data available
Melting point : Not applicable
Freezing point : No data available
Boiling point : 165 - 175 °C
Flash point : 68.88 °C ASTM D93: Method
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Not applicable.
Vapor pressure : 1.05 mm Hg (25 °C)
Relative vapor density at 20 °C : 4.5
Relative density : 0.88 (20 °C)

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Specific gravity / density	: 0.88 g/cm ³
Molecular mass	: 132.23 g/mol
Solubility	: Water: 5.2 g/100ml (20 °C)
Log Pow	: 1.2 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 20 °C)
Auto-ignition temperature	: 260 °C (1013 hPa)
Decomposition temperature	: No data available
Viscosity, kinematic	: 3.85 mm ² /s (20 °C, DIN 51562: Capillary viscometer)
Viscosity, dynamic	: 2.8 mPa.s
Explosion limits	: LEL: 0.9 vol % UEL: 11.4 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

Will not occur.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Air or oxygen. Sto

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Glycol Ether PNB (5131-66-8)	
LD50 oral rat	3300 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male/female, Experimental value)
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male/female, Experimental value)
LC50 inhalation rat (ppm)	> 651 ppm (Equivalent or similar to OECD 403, 4 h, Rat, Male/female, Experimental value)

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified

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Viscosity, kinematic	: 3.85 mm ² /s (20 °C, DIN 51562: Capillary viscometer)
Potential Adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral 2000/5000 mg/kg). Causes skin irritation. Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Slightly harmful by inhalation. Causes serious eye irritation. Caution! Substance is absorbed through the skin.
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS: Central nervous system depression. Headache. Nausea. Dizziness. Coordination disorders.
Symptoms/effects after skin contact	: Symptoms similar to those listed under inhalation. Tingling/irritation of the skin. Irritation.
Symptoms/effects after eye contact	: Irritation of the eye tissue. Mild eye irritation.
Symptoms/effects after ingestion	: No specific information available. SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS: Symptoms similar to those listed under inhalation.
Chronic symptoms	: No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	: Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Not harmful to crustacea. Slightly harmful to fishes. Not harmful to activated sludge. Not harmful to algae.

Glycol Ether PNB (5131-66-8)	
LC50 fish 1	560 - 1000 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Poecilia reticulata, Static system, Fresh water, Experimental value)
EC50 Daphnia 1	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

Glycol Ether PNB (5131-66-8)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

Glycol Ether PNB (5131-66-8)	
Log Pow	1.2 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Glycol Ether PNB (5131-66-8)	
Surface tension	57.6 N/m (20 °C, 100 vol %)
Ecology - soil	Low potential for adsorption in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Do not discharge into surface water. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: NA1993 Combustible liquid, n.o.s., 3, III
UN-No.(DOT)	: NA1993
Proper Shipping Name (DOT)	: Combustible liquid, n.o.s.
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	: III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Symbols	: D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Emergency Response Guide (ERG) Number	: 128
Other information	: No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Glycol Ether PNB (5131-66-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes	Physical hazard - Flammable (gases, aerosols, liquids, or solids) Health hazard - Skin corrosion or Irritation Health hazard - Serious eye damage or eye irritation Health hazard - Specific target organ toxicity (single or repeated exposure)
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

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California Proposition 65 - This material is not known to contain a chemical substance known to the state of California to cause cancer, developmental and/or reproductive harm. However, Whitaker Oil Company has not tested for the presence of listed chemical substances.

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 06/21/2018

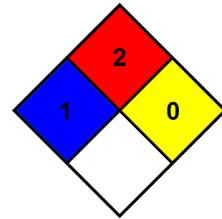
Full text of H-phrases:

H227	Combustible liquid
H315	Causes skin irritation
H320	Causes eye irritation
H336	May cause drowsiness or dizziness

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

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