

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name : Glycol Ether PNB  
CAS Number: : 5131-66-8  
Chemical characterization : Aliphatic Propylene Glycol Ethers  
Chemical name : 1-Butoxy-2-Propanol  
Synonyms : Propylene Glycol (Mono) Butyl Ether; Propylene Glycol n-Butyl Ether; PNB

#### Company Address

The **Chemical.net** Family of Companies

QUAKER CITY CHEMICALS, INC.  
7360 Milnor Street  
Philadelphia, PA 19136  
(215) 333-2000 • Fax (215) 333-4408  
www.chemical.net

#### Emergency telephone number

CHEMTREC USA 300-424-9300

### 2. HAZARDS IDENTIFICATION

#### GHS Classification

Flammable liquids	Category 4
Skin irritation	Category 2
Eye irritation	Category 2
Specific target organ systemic toxicity - single exposure	Category 3

GHS Classification Scale (1= severe hazard; 4= slight hazard)

#### Label elements

Hazard symbols :



Signal word : Warning

Hazard Statements : H227 Combustible liquid.  
H315 Causes skin irritation.

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

### Precautionary Statements

#### : Prevention

P210 Keep away from open flames/hot surfaces. - No smoking.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ 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.

#### Response

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

#### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

#### Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

No additional information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substances

##### Ingredients

Chemical name	CAS-No. EC-No.	Weight %	Component Type
---------------	-------------------	----------	-------------------

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

1-Butoxy-2-Propanol	5131-66-8	> 95.0 %	A
2-Butoxy-1-Propanol	15821-83-7	<=5.0 %	C

Key:  
(A) Substance  
(C) Impurity

### 4. FIRST AID MEASURES

- General advice : 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 material safety data sheet to the doctor in attendance.
- If inhaled : If overcome by exposure, remove victim to fresh air immediately.  
Give oxygen or artificial respiration as needed.  
Obtain emergency medical attention.
- In case of 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.
- In case of eye contact : Immediately flush eyes thoroughly with plenty of water and continue flushing for at least 15 minutes.  
Seek medical attention if discomfort persists.
- If swallowed : If large quantity swallowed, give lukewarm water (pint/ 1/2 liter) if victim completely conscious/alert.  
Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk.  
Obtain emergency medical attention.

#### Notes to physician

Symptoms : Inhalation may cause CNS depression.

Hazards : Causes skin irritation.

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

Causes serious eye irritation.  
May cause drowsiness or dizziness.

Treatment : Treat symptomatically.  
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.  
If ingested, following gastric emptying, either by induced vomiting or gastric lavage with cuffed endotracheal tube in place, administer an aqueous slurry of activated charcoal followed by a cathartic.

---

### 5. FIRE-FIGHTING MEASURES

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.

Specific hazards during fire fighting : 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 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 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.

Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).  
Structural firefighter's protective clothing will only provide limited protection.

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

---

### 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Evacuate personnel to safe areas.  
Keep people away from and upwind of spill/leak.  
Eliminate all sources of ignition.  
Ensure adequate ventilation.  
Use personal protective equipment.
- Environmental precautions : Do not allow contact with soil, surface or ground water.  
Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).  
Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.
- Methods for containment / Methods for cleaning up : 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.  
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.
- Additional advice : See Section 15: Regulatory Information.

---

### 7. Handling and storage

#### Precautions for safe handling

- Advice on safe handling : For industrial use only.  
Keep container tightly closed when not in use.  
The potential for peroxide formation is enhanced when this solvent is 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 °C (140 °F) 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 °C (30 °F) less than the product's flash point. After loading, nitrogen blanketing is required if the contents of the

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

transportation container could exceed a temperature of 16.7 °C (30 °F) less than the product flash point during any subsequent transportation activities.  
If the product flash point is less than 16.7 °C (30 °F) 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.

Fire-fighting class : OSHA/NFPA Class II combustible liquid.

### Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : 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.

### Specific end use(s)

: See Section 1.

---

## 8. EXPOSURE

## CONTROLS/PERSONAL

### PROTECTION Control parameters

#### Ingredients with workplace control parameters

Consult local authorities for acceptable exposure limits.

### Exposure controls

#### Engineering measures

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

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

### Personal protective equipment

- Respiratory protection : No occupational exposure limit(s) have been established for this material or its components.  
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection : Wear chemical resistant gloves such as:  
Neoprene.
- Eye and face protection : 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.
- Skin and body protection : 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.
- Hygiene measures : 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.  
Take off contaminated clothing and wash before reuse.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Color : Colorless.
- Odor : Ether-like odor.
- Odor Threshold : No value available.
- Flash point : 68.88 °C  
Method: (ASTM D93)
- Ignition temperature : 260 °C  
at 1,013 hPa

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

Lower explosion limit	: 1.1 vol%
Upper explosion limit	: 9.0 vol%
Flammability (solid, gas)	: Not applicable
Oxidizing properties	: Not considered an oxidizing agent.
Autoignition temperature	: 260 °C at 1,013 hPa
Molecular weight	: 132.2 g/mol
Decomposition temperature	: not determined
Melting point/freezing point	: < -85 °C at 1,013 hPa
Boiling point/boiling range	: 165 - 175 °C at 1,013 hPa
Vapor pressure	: 1.4 hPa at 25 °C
Density	: 0.88 g/cm <sup>3</sup> at 20 °C
Bulk density	: No Data Available.
Water solubility	: 52 g/l 20 °C
Partition coefficient: n-octanol/water	: log Pow: 1.2 at 20 °C
Viscosity, dynamic	: 2.8 mPa.s at 25 °C
Viscosity, kinematic	: 3.85 mm <sup>2</sup> /s at 20 °C
Relative vapor density	: 4.6
Evaporation rate	: no data available
Explosive properties	: No Data Available.

---

### 10. STABILITY AND REACTIVITY

---



# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

---

Reactivity	: Will not occur.
Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: Not expected to occur. Stable.
Conditions to avoid	: Extended contact with air or oxygen. The potential for peroxide formation is enhanced when this solvent is 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.
Materials to avoid	: Air or oxygen. Strong acids. Strong oxidizing agents.
Hazardous decomposition products	: Not expected to decompose under normal conditions.
Thermal decomposition	: Thermal decomposition may produce carbon monoxide and other toxic vapors.

---

### 11. TOXICOLOGICAL INFORMATION

**Product Summary** : The below given information is based on the assessment of the product including impurities.

#### Acute toxicity

**Acute oral toxicity** : Based on acute toxicity values, not classified.

: LD50: 3,300 mg/kg  
Species: Rat

**Acute inhalation toxicity** : Based on acute toxicity values, not classified.

: LC50: > 3.4 mg/l  
Exposure time: 4 HOURS

**Acute dermal toxicity** : Based on acute toxicity values, not classified.

: LD50: > 2,000 mg/kg  
Species: Rat

**Skin corrosion/irritation** : Classified  
Causes skin irritation.

---

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

<b>Serious eye damage/eye irritation</b>	: Classified Causes serious eye irritation.
<b>Respiratory or skin sensitization</b>	: Respiratory sensitization Not classified No study available.  : Skin sensitization Not classified No adverse effect observed.
<b>Chronic toxicity</b>	
Carcinogenicity	: Not classified No study available.
Germ cell mutagenicity	: Not classified No adverse effect observed.
<b>Reproductive toxicity</b>	
Effects on fertility / Effects on or via lactation	: Not classified No adverse effect observed.
Effects on Development	: Not classified No adverse effect observed.
<b>Target Organ Systemic Toxicant - Single exposure</b>	: Classified, May cause drowsiness or dizziness.
<b>Target Organ Systemic Toxicant - Repeated exposure</b>	: Based on repeated exposure toxicity values, not classified.
<b>Aspiration hazard</b>	: Based on physico-chemical values or lack of human evidence, not classified.

---

## 12. ECOLOGICAL INFORMATION

### Ecotoxicology Assessment

Acute aquatic toxicity : Based on acute aquatic toxicity values, not classified.

---

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

**Chronic aquatic toxicity** : Not classified, based on readily biodegradability and low acute toxicity.

**Toxicity to fish** :  
Low acute toxicity to fish

**Toxicity to daphnia and other aquatic invertebrates** : Low acute toxicity to aquatic invertebrates.

**Toxicity to algae** : Low toxicity to algae.

**Toxicity to bacteria** : Low toxicity to microorganisms.

**Toxicity to fish (Chronic toxicity)** : no data available

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)** : no data available

### Persistence and degradability

**Biodegradability** : 90 %  
Rapidly degradable.  
(After 28 days in a ready biodegradability test)

### Bioaccumulative potential

**Bioaccumulation** : Bioconcentration factor (BCF): 2.87  
Method: (QSAR calculated value)  
This material is not expected to bioaccumulate.

### Mobility in soil

**Distribution among environmental compartments** : Stability in water  
no data available

: Stability in soil  
no data available  
Low absorption to soil particulates predicted

**Additional advice  
Environmental fate and pathways** : No additional information available.

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

### Results of PBT and vPvB assessment

Not applicable.

### Other adverse effects

**Additional ecological information** : No additional information available.

---

### 13. Disposal considerations

#### Waste treatment methods

Product : Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes.  
Comply with federal, state, or local regulations for disposal.

---

### 14. TRANSPORT INFORMATION

#### CFR\_ROAD

UN number : NA1993  
Description of the goods : COMBUSTIBLE LIQUID, N.O.S.  
: (PROPYLENE GLYCOL MONOBUTYL ETHER)  
Class : C  
Packing group : III  
Labels : 3

#### CFR\_RAIL

UN number : NA1993  
Description of the goods : COMBUSTIBLE LIQUID, N.O.S.  
: (PROPYLENE GLYCOL MONOBUTYL ETHER)  
Class : C  
Packing group : III  
Labels : 3

---

### 15. REGULATORY INFORMATION

If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

SARA 302/304

# SAFETY DATA SHEET

## Glycol Ether PNB

Revision Date 12/28/2017

SDS PNB

This product contains no known chemicals regulated under SARA 302/304.

### SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Fire Hazard.  
Immediate (Acute) Health Hazard.

### SARA 313

This product contains no known chemicals regulated under SARA 313.

### State Reporting

This material is not known to contain a chemical substance known to the State of California to cause cancer, reproductive, or developmental toxicity under California Proposition 65. However, GreenChem Industries has not tested for the presence of listed chemical substances.

This product contains no known chemicals regulated by New Jersey's Worker and Community Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

This product contains no known chemicals regulated by Pennsylvania's Right to Know Act.

### Other international regulations

#### Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

\*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

#### REACH status

*If the product has been purchased from any company of the GreenChem Industries group of companies registered in the European Union, we confirm that the chemical substance in this product has been pre-registered or, where required under REACH, registered, and that we have the intention to proceed with any required registration in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)*

SAFETY DATA SHEET

**Glycol Ether PNB**

Revision Date 12/28/2017

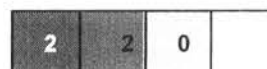
SDS PNB

**16. OTHER INFORMATION**

**Further information**

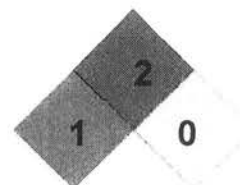
**HMIS Classification**

: Health Hazard: 2  
Flammability: 2  
Physical hazards: 0



**NFPA Classification**

: Health Hazard: 1  
Fire Hazard: 2  
Instability: 0



**Other Information**

HMIS rating scale (0 = minimal hazard; 4 = severe hazard)

NFPA rating scale (0 = minimal hazard; 4 = severe hazard)

**Material safety datasheet sections which have been updated:**

Revised Section(s): 14 16 Revision Date March 21 2017

**Disclaimer**

This document is generated for the purpose of distributing health, safety, and environmental data.

Information is correct to the best of our knowledge at the date of the SDS publication.

It is not a specification sheet nor should any displayed data be construed as a specification.

Before using a product sold by QUAKER CITY CHEMICALS, INC.

users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally.

SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT.

Users should review the applicable Safety Data Sheet before handling the product.

This product(s) may not be used in the manufacture of any of the following, without prior written approval by Seller for each specific product and application:

- (i) U.S. FDA Class I or II Medical Devices; Health Canada Class I, II or III Medical Devices; European Union Class I or II Medical Devices;

**Glycol Ether PNB**

Revision Date 12/28/2017

SDS PNB

---

**Disclaimer**

- (ii) film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned medical devices;
- (iii) packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration;
- (iv) tobacco related products and applications, electronic cigarettes and similar devices.

The product(s) may not be used in:

- (i) U.S. FDA Class III Medical Devices; Health Canada Class IV Medical Devices; European Class III Medical Devices;
- (ii) applications involving permanent implantation into the body;
- (iii) life-sustaining medical applications.

All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

In addition to the above, GreenChem Industries may further prohibit or restrict the use of its products in certain applications. For further information, please contact a GreenChem Industries representative.

Alkylate, Duopac, Duoprime, Filmex, MPDIOL, Polymeg, SAA-100, SAA-101, TBAC, Tebol, T-Hydro, and Tufflo are trademarks owned or used by the GreenChem Industries family of companies. Duopac, Duoprime, Filmex, MPDIOL, Polymeg, Tebol, T-Hydro and Tufflo are registered in the U.S. Patent and Trademark Office.