

Glycol Ether PNP

Version 1.0

Revision Date 09/05/2014

Print Date 01/13/2015

SDS No.: BE1607

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Glycol Ether PNP
CAS Number: 1569-01-3
Chemical characterization : Aliphatic Propylene Glycol Ethers
Chemical Name : 2-Propanol, 1-Propoxy-
Synonyms : Propylene Glycol n-Propyl Ether, PNP, Propylene Glycol Monopropyl Ether

Use of the Substance/Mixture : Solvent

Company : Lyondell Chemical Company
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Telephone : Customer Service 888 777-0232
Product Safety 800 700-0946

Emergency telephone : CHEMTREC USA 800-424-9300
LYONDELL 800-245-4532

E-mail address : product.safety@lyondellbasell.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids	Category 3
Eye irritation	Category 2A
Specific target organ systemic toxicity - single exposure Respiratory system, Central nervous system	Category 3

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

Label elements**Hazard symbols** :**Signal Word** : Warning

Hazard Statements : H226 Flammable liquid and vapor.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Precautionary : **Prevention**

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Statements

P210 Keep away from open flames/hot surfaces. - No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P243 Take precautionary measures against static discharge.
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
 P264 Wash hands 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.
 P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P312 Call a POISON CENTER or doctor/ physician 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.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.

Other hazards

No additional information available.

3. Composition/information on ingredients
Substances

Chemical nature : Substance

Ingredients

Chemical Name	CAS-No. EC-No.	Weight %	Component Type
1-Propoxy-2-Propanol	1569-01-3	> 99.0 %	A

Key:
 (A) Substance

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SECTION 4. FIRST AID MEASURES**First aid procedures**

- 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. For specific information refer to the Emergency Overview in Section 2 of this SDS.
Show this material safety data sheet to the doctor in attendance.
- If inhaled : Remove to fresh air.
Keep patient warm and at rest.
In case of respiratory arrest, administer artificial respiration. In the event of unconsciousness, apnea or cardiac arrest (no pulse), apply cardiopulmonary resuscitation.
Immediately seek medical attention.
- In case of skin contact : Remove contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Flush with lukewarm water for 15 minutes.
Seek medical attention if ill effect or irritation develops.
- In case of eye contact : Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
Remove contact lenses.
If eye irritation persists, consult a specialist.
- If swallowed : Rinse mouth with lukewarm water.
If a large quantity is swallowed, immediately administer lukewarm water (pint/ 1/2 litre) only if victim is completely conscious/alert and induce vomiting.
Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk.
If vomiting does occur, have victim lean forward to reduce risk of aspiration.
If unconscious place in recovery position and seek medical advice.
Get medical attention immediately.

Notes to physician

- Symptoms : High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
At high doses, causes irritation of the stomach.
- Hazards : May cause severe eye irritation.
Skin absorption hazard.
- Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of

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symptoms and the clinical condition of the patient.

SECTION 5. FIRE-FIGHTING MEASURES**Flammable properties**

Flash point : 115 °F (46 °C)
at 1,013 hPa (760 mm Hg)
Method: (TCC)

Lower explosion limit : 1.3 vol%

Upper explosion limit : 10.6 vol%

Flammability (solid, gas) : Not applicable

Fire fighting

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.
Do not use straight streams

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

Further information : Cool containers with flooding quantities of water until well after fire is out.

Protective equipment and precautions for firefighters

Specific hazards during fire fighting : Fine sprays/mists may be combustible at temperatures below normal flash point.
When heated above the flash point, releases flammable vapors.
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.
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.
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 an approved positive pressure self-contained breathing apparatus and firefighter turnout gear.

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Structural firefighter's protective clothing will only provide limited protection.
Fight fire from a safe distance/protected location.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Use personal protective equipment.
Ensure adequate ventilation.
Eliminate all sources of ignition.
- 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.
Chemical removal by air and water pollution control devices must meet the minimum efficiency requirements needed to reduce exposures to an acceptable level.
If necessary, all contaminated waste water must be treated in a municipal or industrial wastewater treatment plant before release to surface water.
- Methods for containment /
Methods for cleaning up** : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Use clean non-sparking tools to collect absorbed material.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
A vapor suppressing foam may be used to reduce vapors.
Collect in plastic or metal containers for disposal.
Dike large spills and place materials in salvage containers.
Prevent entry into sewers and water courses.
Clean contaminated floors and objects thoroughly while observing environmental regulations.
Notify fire and environmental authorities.
- Additional advice** : Keep non-involved personnel away from the area of spillage.
See section 8 for additional PPE information.
See section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE**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.
Avoid contact with eyes, skin, and clothing.
Avoid breathing vapors, mist or gas.
Keep away from all sources of ignition.
Wash thoroughly after handling.

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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 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.
Carefully vent any internal pressure before removing closure.
This product can become electrostatically charged, even in bonded or grounded equipment.
Handling operations that can promote accumulation of static charges include but are not limited to mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations.
Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.
Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperature possibly resulting in spontaneous combustion.
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.
Observe precautions pertaining to confined space entry.

Storage

Requirements for storage areas and containers

: Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides.
This product will absorb water if exposed to air.
Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents.
Store closed drums with bung in up position.
Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper.
Do not store in aluminium, copper, galvanized iron, and galvanized steel.
Some plastics/rubbers are attacked by Glycol Ethers/Ether Esters.

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Further information on storage conditions : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep away from oxidizing agents and strongly acid or alkaline materials.

8. Exposure controls/personal protection
Control parameters
Ingredients with workplace control parameters

Consult local authorities for acceptable exposure limits.

Exposure controls
Engineering measures

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
Both local exhaust and general room ventilation are usually required.

Personal protective equipment

Respiratory protection : No special respiratory protection is recommended under anticipated conditions of normal use with adequate ventilation.
Use appropriate respiratory protection where atmosphere exceeds recommended limits.

Hand protection : Wear chemical resistant gloves such as:
Neoprene.

Eye and face protection : Chemical splash goggles and/or face shield should be worn.

Skin and body protection : Use personal protective equipment (PPE) that is chemical resistant to the product and prevents skin contact.
The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
The PPE must be cleaned thoroughly when contaminated.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
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.
Use good personal hygiene practices.
Take off contaminated clothing and wash before reuse.
Wash hands before eating, drinking, smoking, or using toilet

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facilities.
Shower after work using plenty of soap and water.

Protective measures : Wear suitable protective equipment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Physical state : liquid

Color : Clear, colorless.

Odor : Ether-like odor.

Safety data

Flash point : 115 °F (46 °C)
at 1,013 hPa (760 mm Hg)
Method: (TCC)

Lower explosion limit : 1.3 vol%

Upper explosion limit : 10.6 vol%

Flammability (solid, gas) : Not applicable

Oxidizing properties : Not considered an oxidizing agent.

Molecular weight : 118.17 g/mol

Decomposition temperature : not determined

pH : no data available

Melting point/freezing point : < -94 °F (-70 °C)
at 1,013 hPa (760 mm Hg)

Boiling point/boiling range : 300 °F (149 °C)
at 1,013 hPa (760 mm Hg)

Vapor pressure : 3.8 hPa (2.9 mm Hg)
at 77 °F (25 °C)

Density : 0.885 g/cm³
at 68 °F (20 °C)

Water solubility : at 90 °F (32 °C)
completely miscible

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Partition coefficient: n-
octanol/water : log Pow: 0.621
at 68 °F (20 °C)

Viscosity, dynamic : 2.8 mPa.s
at 68 °F (20 °C)

Viscosity, kinematic : 2.7 mm²/s
at 77 °F (25 °C)

Evaporation rate : no data available

Explosive properties : Not explosive

Remarks - Other information : No additional information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : May react with oxygen to form peroxides.

Chemical stability : Stable under recommended storage conditions.

Conditions to avoid : Heat, sparks, open flame, other ignition sources, and oxidizing conditions.
Do not allow evaporation to dryness.
Extended contact with air or oxygen.
Ignition may occur at temperatures below those published in the literature as autoignition or ignition temperatures.
The potential for peroxide formation is enhanced when this solvent is used in processes such as distillation.

Materials to avoid : Strong acids
Strong bases
Strong oxidizing agents

Hazardous decomposition products : Combustion may produce oxides of carbon and other toxic gases.

Thermal decomposition : Incomplete combustion may produce carbon monoxide and other toxic gases.

Hazardous reactions : May react with oxygen to form peroxides.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

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Acute oral toxicity	: Based on acute toxicity values, not classified. : LD50: 3,449 mg/kg Species: Rat
Acute inhalation toxicity	: Based on acute toxicity values, not classified. : LC50: > 9.0 mg/l Exposure time: 6 HOURS Species: Rat
Acute dermal toxicity	: Based on acute toxicity values, not classified. : LD50: 4,052 mg/kg Species: Rabbit.
Skin corrosion/irritation	: Based on skin irritation values, not classified. : Not irritating to the skin following short-term contact. Extensive and prolonged contact with skin may cause severe irritation.
Serious eye damage/eye irritation	: Classified Causes serious eye irritation.
Respiratory or skin sensitization	: Respiratory sensitization Not classified No study available. : Skin sensitization Not classified No adverse effect observed.
Chronic toxicity	
Carcinogenicity	: Not classified No study available.
Germ cell mutagenicity	: Not classified No adverse effect observed.
Reproductive toxicity	

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Effects on fertility / Effects on or via lactation	: Not classified No adverse effect observed.
Effects on Development	: Not classified No adverse effect observed.
Target Organ Systemic Toxicant - Single exposure	: Target Organs: Respiratory system Classified, May cause respiratory irritation.
	: Target Organs: Central nervous system Classified, May cause drowsiness or dizziness.
Target Organ Systemic Toxicant - Repeated exposure	: Based on repeated exposure toxicity values, not classified.
Aspiration hazard	: 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.
Chronic aquatic toxicity	: Not classified, based on readily biodegradability and low acute toxicity.
Toxicity to fish	: Acute toxicity to fish is very low.
Toxicity to daphnia and other aquatic invertebrates	: Acute toxicity to freshwater and marine invertebrates is very low.
Toxicity to algae	: Acute toxicity to aquatic plants very low.
Toxicity to bacteria	: Low toxicity to sewage microbes.
Toxicity to fish (Chronic toxicity)	: Data waiver study scientifically unjustified
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: Data waiver study scientifically unjustified

Persistence and degradability

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Biodegradability : 91.5 %
Rapidly degradable.
(After 28 days in a ready biodegradability test)

Bioaccumulative potential

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility in soil

Distribution among environmental compartments : Stability in water
Not expected to hydrolyze readily.

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

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

Results of PBT and vPvB assessment

Not applicable.

Other adverse effects

Additional ecological information : No additional information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes.
Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.
Dispose of wastes in an approved waste disposal facility.
Assure emissions comply with applicable regulations.
Avoid overloading/poisoning plant biomass.
Assure effluent complies with applicable regulations.
Landfill solids at permitted sites.
Use registered transporters.
Burn concentrated liquids.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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SECTION 14. TRANSPORT INFORMATION**DOT**

UN number : 1993
 Description of the goods : Flammable liquids, n.o.s.
 : (PROPYLENE GLYCOL N-PROPYL ETHER)
 Class : 3
 Packing group : III
 Labels : 3

SECTION 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

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, LyondellBasell 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
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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

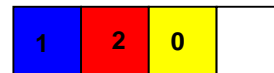
REACH status

If the product has been purchased from any company of the LyondellBasell 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)

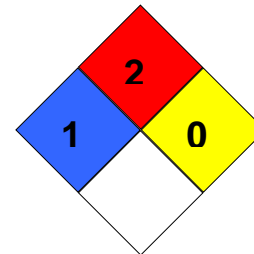
Contact product.safety@lyondellbasell.com for additional global inventory information.

SECTION 16. OTHER INFORMATION**Further information****HMIS Classification**

: Health Hazard: 1
 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:

Updated format Revised Section(s): 1 2 3 8 11 12 15 Revision Date August 31 2014

Disclaimer

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

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Disclaimer

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This product(s) may not be used in:

(i) any U.S. FDA Class I, Health Canada Class I, and/or European Union Class I medical devices, without prior notification to Seller for each specific product and application; or (ii) the manufacture of any of the following, without prior written approval by Seller for each specific product and application: U.S. FDA Class II Medical Devices; Health Canada Class II or Class III Medical Devices; European Union Class II Medical Devices; film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned medical devices; 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; tobacco related products and applications, electronic cigarettes and similar devices, and pressure pipe or fittings that are considered a part or component of a nuclear reactor. Additionally, 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; and (iv) lead, asbestos or MTBE related applications. All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

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