

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Glycol Ether DPNB
CAS Number: 29911-28-2
Chemical characterization : Aliphatic Propylene Glycol Ethers
Chemical Name : 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
Synonyms : Dipropylene Glycol Butoxy Ether, Dipropylene Glycol
Monobutyl Ether, DPNB

Identified uses : 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

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

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity; Oral : Category 4
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 : H302 Harmful if swallowed.
H336 May cause drowsiness or dizziness.

Precautionary Statements : **Prevention**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

Response

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

Storage

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

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
Dipropylene Glycol Butyl Ether	29911-28-2	>= 99.0 %	A

Key:

(A) Substance

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.
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.
Obtain emergency medical attention.

In case of skin contact : Remove contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Seek medical attention if discomfort persists.

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

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 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.
If vomiting does occur, have victim lean forward to reduce risk of aspiration.
If unconscious place in recovery position and seek medical advice.
Obtain emergency medical attention.

Notes to physician

Hazards : Harmful if swallowed.
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.

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

Flash point : ~ 212 °F (100 °C)
at 1,013 hPa (760 mm Hg)
Method: (SETA)

Autoignition temperature : 381 °F (194 °C)
at 1,013 hPa (760 mm Hg)

Lower explosion limit : 0.6 vol%

Upper explosion limit : 20 vol%

Flammability (solid, gas) : Not applicable

Fire fighting

Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam
LARGE FIRE: Use water spray, water fog or alcohol-resistant foam

Unsuitable extinguishing media : Do not use solid water stream.

Further information : Cool containers with flooding quantities of water until well after

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

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.
Heat from fire can generate flammable vapor.
Vapors may be heavier than air.
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.
- Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighter's protective clothing will only provide limited protection.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Eliminate all sources of ignition.
Evacuate personnel to safe areas.
- Environmental precautions : 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 : Eliminate all sources of ignition.
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.
- 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.
See Section 15: Regulatory Information.

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

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.
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.
Handle empty containers with care.
Flammable/combustible residue remains after emptying. 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.

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

Storage

Requirements for storage areas and containers : Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper.
Some plastics/rubbers are attacked by Glycol Ethers/Ether Esters.
This product will absorb water if exposed to air.
Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides.
Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents.

Further information on storage conditions : Keep away from sources of ignition - No smoking.

Other data : Stable under recommended storage conditions.

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

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

Consult local authorities for acceptable exposure limits.

Exposure controls**Engineering measures**

Both local exhaust and general room ventilation are usually required.
If handling results in mist/aerosol and/or high temperatures, special ventilation may be required to avoid exceeding exposure standard and/or to prevent flammable mixtures, which can form below flash point.

Personal protective equipment

- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
If exposure can even approach the occupational exposure limit(s), use only approved supplied air respirator operated in a positive pressure mode.
- 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 : Not normally considered a skin hazard.
Where use can result in skin contact, practice good personal hygiene.
Skin should be washed after contact.
- 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.
Take off contaminated clothing and wash before reuse.
Shower after work using plenty of soap and water.
- Protective measures : Do not wear contact lenses.
Ensure adequate ventilation.
Wear suitable protective equipment.

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

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

Physical state : liquid
Color : Clear, colorless.
Odor : Ether-like odor.

Safety data

Flash point : ~ 212 °F (100 °C)
at 1,013 hPa (760 mm Hg)
Method: (SETA)

Lower explosion limit : 0.6 vol%
Upper explosion limit : 20 vol%
Flammability (solid, gas) : Not applicable
Oxidizing properties : Not considered an oxidizing agent.
Autoignition temperature : 381 °F (194 °C)
at 1,013 hPa (760 mm Hg)
Molecular weight : 190.27 g/mol
Decomposition temperature : not determined

pH : 7
Melting point/freezing point : < -103 °F (-75 °C)
at 1,013 hPa (760 mm Hg)

Boiling point/boiling range : 446 °F (230 °C)
at 1,013 hPa (760 mm Hg)

Vapor pressure : < 0.04 hPa (0.03 mm Hg)
at 68 °F (20 °C)

Density : 0.910 g/cm³
at 68 °F (20 °C)

Water solubility : 40 - 45 g/l
at 77 °F (25 °C)
soluble

Partition coefficient: n-
octanol/water : log Pow: 1.523
at 77 °F (25 °C)

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

	Log Kow = 1.5
Viscosity, dynamic	: 4.35 mPa.s at 77 °F (25 °C)
Viscosity, kinematic	: 4.85 mm ² /s at 77 °F (25 °C)
Relative vapor density	: ~6.6 (Air = 1.0 at 15 - 20°C/59 - 68°F)
Evaporation rate	: no data available
Explosive properties	: Not explosive
Remarks - Other information	: Hygroscopic.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: May react with oxygen to form peroxides.
Chemical stability	: Stable under recommended storage conditions.
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., Incomplete combustion may produce carbon monoxide and other toxic gases.
Hazardous reactions	: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

Acute toxicity**Acute oral toxicity**

- : Classified
Harmful if swallowed.
- : LD50: 1,480 mg/kg
Species: Rat

Acute inhalation toxicity

- : Based on acute toxicity values, not classified.
- : LC50: > 5.4 mg/l
Exposure time: 4 HOURS
Species: Rat

Acute dermal toxicity

- : Based on acute toxicity values, not classified.
- : LD50 Dermal: > 2,000 mg/kg
Species: Rat

Skin corrosion/irritation

- : Based on skin irritation values, not classified.
- : Prolonged contact may result in mild skin irritation.

Serious eye damage/eye irritation

- : Based on eye irritation values, not classified.
- : May cause slight corneal injury and/or 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
Both positive and negative clastogenic effects were observed in vitro. No evidence of mutation in bacterial assays and no genotoxicity observed in vivo.

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

Reproductive toxicity

Effects on fertility / : Not classified
Effects on or via lactation : No adverse effect observed.

Effects on Development : Not classified
No adverse effect observed.

Target Organ Systemic Toxicant - Single exposure : 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 :
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 sewage microbes.

Toxicity to fish (Chronic toxicity) : no data available

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

Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

Persistence and degradability

Biodegradability : 90 - 100 %
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 federal, state, and local regulations.
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.
Landfill at permitted sites.
Use registered transporters.

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

Glycol Ether DPNB

Gen. Variant: SDS_US_GHS

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

SECTION 14. TRANSPORT INFORMATION

Not regulated for transport

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 not classified as a health and/or physical hazard according to Section 311 & 312.

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
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

Glycol Ether DPNB

Gen. Variant: SDS_US_GHS

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

Taiwan	TCSCA	Compliant
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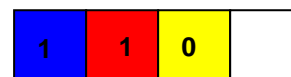
REACH status

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)

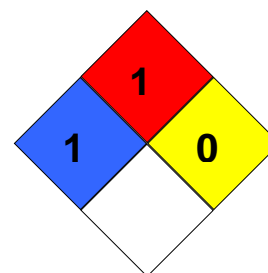
Contact product.safety@lyb.com for additional global inventory information.

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

: Health Hazard: 1
 Flammability: 1
 Physical hazards: 0

**NFPA Classification**

: Health Hazard: 1
 Fire Hazard: 1
 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): 4 10 12 15 Revision Date October 30 2015

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.

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Glycol Ether DPNB

Version 1.1

Revision Date 10/29/2015

Print Date 01/10/2017

SDS No.: BE1582

Disclaimer

This product(s) may not be used in:

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