

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_TW

Version 1.4

Revision Date 2017-04-17

Print Date 2017-09-03

SDS No.: BE130

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

Trade name : PROPYLENE GLYCOL INDUSTRIAL
CAS Number: : 57-55-6
Chemical characterization : Glycols
Chemical name : 1,2-Propanediol
Synonyms : Propylene Glycol, 1,2-Propanediol, 1,2-Dihydroxypropane, Monopropylene Glycol

Identified uses : Solvent; Intermediate; Functional Fluids

Prohibited uses : Pharmaceutical excipient; Active pharmaceutical ingredient (API); Applications involving human consumption; Cosmetics; Toiletries; Personal care products; Tobacco; Electronic cigarettes (E-cigarettes); Cannabis; Theater fogs; Artificial smoke; Cat food; Sprinkler systems over 30%

The manufacturer, importer or supplier's name, address and telephone number

Company Address

LyondellBasell Taiwan Co., Ltd.
7F-6, #101, Fu Hsiung North Road, Taipei,
Taiwan

Company Telephone

(Tel) 02-7707-9000
(Fax) 02-8770-1122
product.safety@lyb.com

Emergency telephone number

(886) 933 635 556 Taiwan

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION**GHS-Classification**

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

GHS-Labeling

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

Other hazards

No additional information available.

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3. COMPOSITION/INFORMATION ON INGREDIENTS**Substances****Ingredients**

Chemical name	CAS-No. EC-No.	Weight %	Component Type
Propylene Glycol	57-55-6	>= 99.0 %	A

Key:

(A) Substance

4. FIRST AID MEASURES

- General advice : May cause irritation of the eyes, skin and mucous membranes.
Always observe self-protection methods
Move out of dangerous area.
Remove contaminated shoes and clothing.
Show this material safety data sheet to the doctor in attendance.
- If inhaled : Remove to fresh air.
In the case of inhalation of aerosol/mist consult a physician if necessary.
Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Avoid inhalation of hot vapors or extremely high concentrations of aerosols.
- In case of skin contact : Wash skin thoroughly with mild soap and water.
- In case of eye contact : Flush eyes with water thoroughly and continuously for 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

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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).
- Hazards : This product is of low acute toxicity.
May cause irritation of the eyes, skin and mucous membranes.
Hot vapors may cause lung damage.
- Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

- 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.
- Specific hazards during fire fighting : Heat from fire can generate flammable vapor.
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.
Fight fire from a safe distance/protected location.
Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries.
Use water spray/fog for cooling.
Avoid frothing/steam explosion.
Although water soluble, may not be practical to extinguish fire by water dilution.
Notify authorities immediately if liquid enters sewer/public waters.
- Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighter's protective clothing will only provide limited protection.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment.
Clean-up to be performed only by trained and properly equipped personnel.
- Environmental precautions : Try to prevent the material from entering drains or water courses.
- Methods for containment /
Methods for cleaning up : Extinguish ignition sources; stop release; prevent flow to sewers or public waters.
Notify fire and environmental authorities.
Impound/recover large land spill; soak up small spill with inert solids.
Soak up small spills with inert solids.
Use suitable disposal containers.
On water, material is soluble and may float or sink.
Contain/collect rapidly to minimize dispersion.
Disperse residue to reduce aquatic harm.
Report per regulatory requirements.

7. Handling and storage**Precautions for safe handling**

- Advice on safe handling : Handle empty containers with care - residue can burn if heated.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Handle empty containers with care - residue may be combustible.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.
- Advice on common storage : Carbon/Mild steel with suitable internal coating, or stainless steel

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Other data : No decomposition if stored and applied as directed.

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**

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

Personal protective equipment

Respiratory protection : No special respiratory protection equipment is recommended under anticipated conditions of normal use.

Hand protection : Not normally considered a skin hazard.
Use chemical resistant gloves appropriate to conditions of use.
Wear chemical resistant gloves such as:
Nitrile rubber
Latex

Eye and face protection : Use splash goggles when eye contact due to splashing or spraying liquid is possible.

Skin and body protection : No special clothing/skin protection equipment is recommended under normal conditions of anticipated use.
Where use can result in skin contact, practice good personal hygiene.

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

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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 at 20 °C (1,013.25 hPa)
Color	: Clear, colorless.
Odor	: Little or no odor.
Odor Threshold	: No value available.
Flash point	: 104 °C at 1000.010 hPa (750.071 mm Hg)
Lower explosion limit	: ~ 2.4 vol%
Upper explosion limit	: ~ 17.4 vol%
Flammability (solid, gas)	: Not applicable
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Autoignition temperature	: > 400 °C at 1000.10 - 1014.40 hPa
Decomposition temperature	: not determined
Melting point/range	: < -20 °C
Boiling point/boiling range	: 184 °C at 1003.20 hPa
Vapor pressure	: 0.2 hPa at 25 °C
Density	: 1.03 g/cm ³ at 20 °C
Water solubility	: 20 °C Miscible in water.
Partition coefficient: n-	: log Pow: -1.07

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octanol/water	at 20.5 °C
Viscosity, kinematic	: 42.1 mm ² /s at 25 °C
Relative vapor density	: no data available
Surface tension	: 71.6 mN/m 1.01 g/l at 21.5 °C
Explosive properties	: Not explosive
Other Information	: No additional information available.

10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: Not expected to occur. This material is stable when properly handled and stored.
Conditions to avoid	: High temperatures, oxidizing conditions. May degrade when exposed to light or other radiation sources.
Materials to avoid	: Reacts with strong oxidizing agents. Strong acids. Isocyanates.
Hazardous decomposition products	: Carbon Monoxide and other toxic vapors.
Thermal decomposition	: Incomplete combustion may produce carbon monoxide and other toxic gases.

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 Oral: > 5,000 mg/kg Species: Rat

- Acute inhalation toxicity** : Based on acute toxicity values, not classified.
: LC50 (Inhl): > 20 mg/l
Exposure time: 4 HOURS
Species: Rabbit
- Acute dermal toxicity** : Based on acute toxicity values, not classified.
: LD50 Dermal: > 2,000 mg/kg
Species: Rabbit
- Skin corrosion/irritation** : Based on skin irritation values, not classified.
May cause slight transient skin irritation.
- Serious eye damage/eye irritation** : Based on eye irritation values, not classified.
May produce minimal, fully reversible eye irritation.
- Respiratory or skin sensitization** : Respiratory sensitization
Not classified
no data available
: Skin sensitization
Not classified
Skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application.
- Chronic toxicity**
- Carcinogenicity** : Not classified
No adverse effect observed.
- Germ cell mutagenicity** : Not classified
No adverse effect observed.
- Reproductive toxicity**
- 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** : Based on single exposure toxicity values, not classified.

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Toxicant - Single exposure

Target Organ Systemic Toxicant - Repeated exposure : Based on repeated exposure toxicity values, not classified., Propylene glycol is of low inherent toxicity in rats and dogs after repeated oral exposure, while cats show species-specific hematological changes in red blood cells (other tissues unremarkable). Rats exposed repeatedly to high aerosol concentrations exhibited signs consistent with irritation of the eyes and nasal mucosa but showed no evidence of systemic toxicity.

Aspiration hazard : Based on physico-chemical values or lack of human evidence, not classified.

12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

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 study available.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Low chronic toxicity to aquatic invertebrates.

Elimination information (persistence and degradability)

Bioaccumulation : This material is not expected to bioaccumulate.

Surface tension : 71.6 mN/m
1.01g/l
at 21.5 °C

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Distribution among environmental compartments

: Stability in soil
Low potential for soil adsorption expected

: Stability in water
Hydrolytically stable.
Molecular structure includes no hydrolysable functional groups.

**Additional advice
Environmental fate and pathways**

: No additional information available.

Biodegradability

: Rapidly degradable.

: 72 - 100 %
(After 28 days in a ready biodegradability test)

Further information on ecology**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.

Results of PBT assessment

Not applicable.

Additional ecological information

: No additional information available.

13. Disposal considerations**Waste treatment methods**

Product : Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.
Landfill solids at permitted sites.
Burn concentrated liquids, diluting with clean, low viscosity fuel.
Dilute aqueous waste may biodegrade.
Assure effluent complies with applicable regulations.

14. TRANSPORT INFORMATION

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BLG (MARPOL Annex II)

Description of the goods : PROPYLENE GYLCOL
 Pollution category : Z
 Ship type : NONE

15. REGULATORY INFORMATION**Toxic Chemical Substances Control Act**

Not relevant

Taiwan - Labor Safety & Health Law**Taiwan - Traffic Regulation****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 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.

16. OTHER INFORMATION**Material safety datasheet sections which have been updated:**

Revised Section(s): 1 4 7 14 16 April 13 2017

SDS Preparation Date: 2017-04-17

SDS Prepared by: LyondellBasell Taiwan Co., Ltd., HSE Department, 7F-6, #101, Fu Hsiung North Road, Taipei, Taiwan, (Tel) 02-7707-9000, (Fax) 02-8770-1122,

SDS Prepared by: Kevin Kung, Manger Quality Management and Product Stewardship

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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 a company of the LyondellBasell family of companies, 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;
- (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, LyondellBasell may further prohibit or restrict the use of its products in certain applications. For further information, please contact a LyondellBasell representative.

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Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet