

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : PROPYLENE GLYCOL USP/EP
CAS Number: 57-55-6
Chemical characterization : Glycols
Chemical Name : 1,2-Propanediol
Synonyms : Propylene Glycol, 1,2-Propanediol, 1,2-Dihydroxypropane, Monopropylene Glycol

Use of the Substance/Mixture : Manufacture of substances, Distribution of substance, Formulation & (re)packing of substance and mixtures, Uses in Coatings, Use in Cleaning Agents, Use as binders and release agents, Agrochemical uses, Functional Fluids, De-icing and anti-icing applications, Other consumer uses, Use in laboratories, Manufacture of rubber products, Polymer production, Water treatment chemicals, Mining chemicals
Manufacture of substances, Formulation & (re)packing of substance and mixtures, Use as a Pharmaceutical Excipient, Direct and Indirect Animal and Human Food Contact, Cosmetics and Toiletry Products

Recommended restrictions on use :

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**

Not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Label elements

Not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

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
Propylene Glycol	57-55-6	>= 99.5 %	A

Key:

(A) Substance

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

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.

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If swallowed : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

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.

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

Flash point : 219 °F (104 °C)
at 1000.010 hPa (750.071 mm Hg)

Autoignition temperature : > 752 °F (400 °C)
at 1000.10 - 1014.40 hPa (750.14 - 760.86 mm Hg)

Lower explosion limit : ~2.4 vol%

Upper explosion limit : ~17.4 vol%

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.

Protective equipment and precautions for firefighters

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.

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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.

Refer to NFPA Code 13 for guidance in using propylene glycol in sprinkler system applications.

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

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.

SECTION 7. HANDLING AND STORAGE**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.

Storage

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

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 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid at 68 °F (20 °C) (1,013.25 hPa (760.00 mm Hg))

Color : Clear, colorless.

Odor : Little or no odor.

Safety data

Flash point : 219 °F (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 : > 752 °F (400 °C)
at 1000.10 - 1014.40 hPa (750.14 - 760.86 mm Hg)

Decomposition temperature : not determined

pH : no data available

Melting point/range : < -4 °F (-20 °C)

Boiling point/boiling range : 363 °F (184 °C)
at 1003.20 hPa (752.46 mm Hg)

Vapor pressure : 0.2 hPa (0.2 mm Hg)

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	at 77 °F (25 °C)
Density	: 1.03 g/cm ³ at 68 °F (20 °C)
Water solubility	: at 68 °F (20 °C) Miscible in water.
Partition coefficient: n-octanol/water	: log Pow: -1.07 at 68.9 °F (20.5 °C)
Viscosity, kinematic	: 42.1 mm ² /s at 77 °F (25 °C)
Relative vapor density	: no data available
Surface tension	: 71.6 mN/m 1.01g/l at 70.7 °F (21.5 °C)
Explosive properties	: Not explosive
Remarks - Other information	: No additional information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: Stable under recommended storage conditions.
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.
Hazardous reactions	: Not expected to occur. This material is stable when properly handled and stored.

SECTION 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: 22,000 mg/kg
Species: rat

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

: LC50 (Inhl): > 317 mg/l
Exposure time: 2 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.

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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
Toxicant - Single exposure** : Based on single exposure toxicity values, not classified.

**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**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.

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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.

Persistence and degradability

Biodegradability : Rapidly degradable.
: 72 - 100 %
(After 28 days in a ready biodegradability test)

Bioaccumulative potential

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility in soil

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

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.

Results of PBT and vPvB assessment

Not applicable.

Other adverse effects

Additional ecological information : No additional information available.

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SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Comply with federal, state, or local regulations for disposal.
Landfill solids at permitted sites.
Burn concentrated liquids, diluting with clean, low viscosity fuel.
Avoid flameouts and assure that emissions comply with all applicable standards/regulations.
Dilute aqueous waste may biodegrade.
Assure effluent complies with applicable regulations.

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 the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

57-55-6 Propylene Glycol

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

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

57-55-6 Propylene Glycol

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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

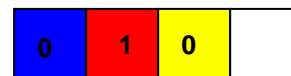
REACH status

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)

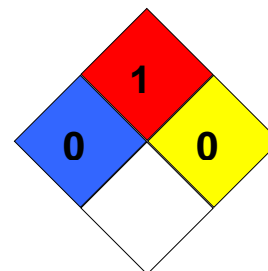
Contact product.safety@lyondellbasell.com for additional global inventory information.

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

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

**NFPA Classification**

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

**Other Information**

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

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

Material safety datasheet sections which have been updated:

Updated format ; Revised Section(s): 1 - 16 May 27 2014

Disclaimer

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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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