

PROPYLENE GLYCOL USP

Version	Revision Date:	SDS Number:	Date of last issue: 06/21/2017
1.2	07/14/2017	400001020103	Date of first issue: 05/04/2016

If symptoms persist, call a physician.

In case of skin contact : Wash with water and soap as a precaution.

In case of eye contact : Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : No data is available on the product itself.

Hazardous combustion products : No hazardous combustion products are known

Specific extinguishing methods : No data is available on the product itself.

Further information : Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.

Environmental precautions : No special environmental precautions required.

Methods and materials for : Wipe up with absorbent material (e.g. cloth, fleece).

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containment and cleaning up Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : No materials to be especially mentioned.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
Material : PVC or other plastic material gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless, clear

Odour : odourless

Odour Threshold : No data is available on the product itself.

pH : ca. 7
neutral

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Freezing point : ca. -60 °C

Boiling point : ca. 188 °C
(ca. 1,013.08 hPa)

Flash point : ca. 109 °C
Method: closed cup

Evaporation rate : 0.01

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : No data is available on the product itself.

Upper explosion limit / Upper flammability limit : ca. 12.5 %(V)

Lower explosion limit / Lower flammability limit : ca. 2.6 %(V)

Vapour pressure : < 0.1333 hPa (25 °C)

Relative vapour density : ca. 2.6 (15 - 32 °C)

Relative density : 1.04 (25 °C)

Density : 1.04 g/cm³ (20 °C)

Solubility(ies)

Water solubility : No data is available on the product itself.

Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : log Pow: -1
log Pow: -0.92

Auto-ignition temperature : ca.371 °C

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity

Viscosity, dynamic : ca. 46 mPa.s (25 °C)

Viscosity, kinematic : < 20 mm²/s (40 °C)

Explosive properties : No data is available on the product itself.

Oxidizing properties : None.

Particle size : No data is available on the product itself.

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SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : None known.

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Acute oral toxicity : No data available

Acute inhalation toxicity : No data available

Acute dermal toxicity : No data available

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Assessment: No data available

Germ cell mutagenicity

Genotoxicity in vitro : No data available

Genotoxicity in vivo : No data available

Carcinogenicity

No data available

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Carcinogenicity - Assessment : No data available

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Effects on fertility : No data available

Product:

Effects on foetal development : Species: Rat
Application Route: Oral
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

No data available

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

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Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxicity to fish : No data available

Toxicity to daphnia and other aquatic invertebrates : No data available

Toxicity to algae : No data available

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

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

M-Factor (Chronic aquatic toxicity) : No data available

Toxicity to microorganisms : No data available

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

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Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability

Biodegradability : No data available

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Bioaccumulation : No data available

Partition coefficient: n-octanol/water - Product : log Pow: -1

log Pow: -0.92

Mobility in soil

Mobility : No data available

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Distribution among environmental compartments : No data available

Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

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

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA**

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**DOT Classification**

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****SARA 311/312 Hazards** : No SARA Hazards**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

CH INV	: On the inventory, or in compliance with the inventory
DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

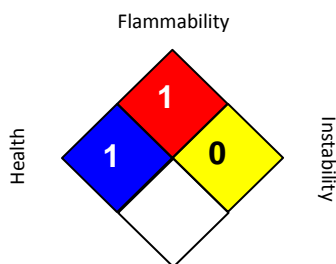
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

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SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS® IV:**

HEALTH		0
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Revision Date : 07/14/2017

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.

PROPYLENE GLYCOL USP/EP

Gen. Variant: SDS_US_GHS

Version 1.3

Revision Date 12/05/2016

Print Date 06/14/2018

SDS No.: BE129

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

Trade 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

Identified uses : Solvent; Intermediate; Functional Fluids

Prohibited uses : Active pharmaceutical ingredient (API); Tobacco; Electronic cigarettes (E-cigarettes); Cannabis; Theater fogs; Artificial smoke; Cat food (21 CFR 582.1666); Sprinkler systems over 30%

Company Address

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

Company Telephone

Customer Service 888 777-0232
product.safety@lyb.com

Emergency telephone

CHEMTREC USA 800-424-9300
LYONDELL 800-245-4532

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

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

Ingredients

Chemical name	CAS-No. EC-No.	Weight %	Component Type
Propylene Glycol	57-55-6	>= 99.5 %	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.

Notes to physician

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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.
	: 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.

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.

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Advice on common storage : Carbon/Mild steel with suitable internal coating, or stainless steel

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

Specific end use(s)

: See Section 1.2., Development of Exposure Scenarios for such use are not required by the REACH Regulation other than what is provided in other sections of this SDS.
,No use-specific Risk Management Measures are proposed.

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.

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

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Miscible in water.

Partition coefficient: n-octanol/water : log Pow: -1.07
at 20.5 °CViscosity, kinematic : 42.1 mm²/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.

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	: 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.

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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.
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.

13. Disposal considerations**Waste treatment methods**

Product : 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.

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14. TRANSPORT INFORMATION

Not regulated for transport

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

Other international regulations**Global Inventory Status**

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

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*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

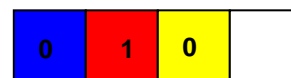
REACH status

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)

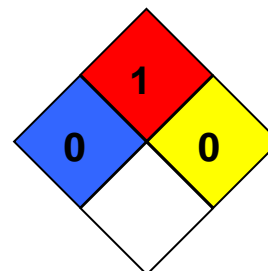
Contact product.safety@lyb.com for additional global inventory information.

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

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

**NFPA Classification**

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

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

Revised Section(s): 1 December 5 2016

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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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.

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PROPYLENE GLYCOL USP/EP

Gen. Variant: SDS_US_GHS

Version 1.3

Revision Date 12/05/2016

Print Date 06/14/2018

SDS No.: BE129

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
 Trade name : PROPYLENE GLYCOL USP
 Chemical name : PROPYLENE GLYCOL
 CAS No : 57-55-6
 Formula : C3H8O2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : carrier
 Use of the substance/mixture : Chemical intermediate
 Solvent

1.3. Details of the supplier of the safety data sheet

Monument Chemical
 2450 Olin Road
 Brandenburg, KY 40108 - USA
 T (270)422-6860

sds@monumentchemical.com - www.monumentchemical.com

1.4. Emergency telephone number

Emergency number : 24 HR CHEMTREC:1-800-424-9300; 24 HR Emergency Assistance: 1-270-422-6860

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	Classification (GHS-US)
PROPYLENE GLYCOL (Main constituent)	(CAS No) 57-55-6	98 - 100	Not classified

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
 First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
 First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
 First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
 First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PROPYLENE GLYCOL (57-55-6)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
OSHA	Not applicable	

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

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Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless liquid.
Color	: Colorless
Odor	: mild
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: -60 °C
Boiling point	: 187 °C
Flash point	: 107 °C (closed cup)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: < 0.1 mm Hg (@ 25 Deg. C)
Relative density	: 1.04
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 8.66 lb/gal
Molecular mass	: 76.1 g/mol
Solubility	: Soluble in water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: 371 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

PROPYLENE GLYCOL (57-55-6)	
LD50 oral rat	20 g/kg
LD50 dermal rabbit	20800 mg/kg
ATE US (oral)	20000.000 mg/kg body weight
ATE US (dermal)	20800.000 mg/kg body weight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

PROPYLENE GLYCOL (57-55-6)	
LC50 fish 1	51600 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	41 - 47 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])

12.2. Persistence and degradability

PROPYLENE GLYCOL (57-55-6)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

PROPYLENE GLYCOL (57-55-6)	
BCF fish 1	< 1
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

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Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

PROPYLENE GLYCOL (57-55-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag

Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

15.2. International regulations

CANADA

PROPYLENE GLYCOL (57-55-6)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

PROPYLENE GLYCOL (57-55-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

PROPYLENE GLYCOL (57-55-6)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

15.3. US State regulations

PROPYLENE GLYCOL(57-55-6)

State or local regulations

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date : 04/15/2015

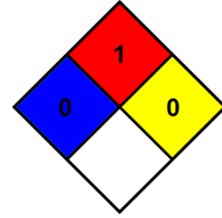
Other information : None.

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NFPA health hazard	: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

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