



SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Propane-1,2-diol

1.2 Other means of identification

Product number -
Other names 1,2-Propanediol

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yien Chemical Technology Co., Ltd
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai
Chemical Industry Zone, Shanghai, 201400, China
Telephone +86-400-133-2688

1.5 Emergency phone number

Emergency phone number +86-400-133-2688
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT
+8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Not classified.

2.2 GHS label elements, including precautionary statements

Pictogram(s) No symbol.
Signal word No signal word
Hazard statement(s) none
Precautionary statement(s)
Prevention none
Response none
Storage none
Disposal none

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Propane-1,2-diol	Propane-1,2-diol	57-55-6	200-338-0	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

Following ingestion

Rinse mouth. Seek medical attention if you feel unwell.

4.2 Most important symptoms/effects, acute and delayed

Liquid may irritate eyes. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Check the anion gap, arterial pH, renal function, and glucose level. Serum propylene glycol levels up to 1,000 mg/dL do not correlate well with clinical status. Patients have been conscious with serum levels of 760 mg/dL.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Water fog, alcohol foam, carbon dioxide, dry chemical.

5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Absorb liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Absorb liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than

applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants and alkalis. Dry. Well closed. Ventilation along the floor. Propylene glycol is hygroscopic and should be stored in a well-closed container, protected from light, in a cool, dry place.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	Propane-1,2-diol			
CAS No.	57-55-6			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Australia	150	474		
Canada - Ontario	50	155		
Ireland	150	470		
New Zealand	150 (1)	474		
		10 (1)		
United Kingdom	150	474		
	Remarks			
New Zealand	(1) particulates only			

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Avoid inhalation of mist and vapour. Use ventilation.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid. Strongly hygroscopic.
Colour	Colourless.
Odour	Practically odorless
Melting point/freezing point	< -20 °C. Atm. press.:Ca. 101.325 Pa.
Boiling point or initial boiling point and boiling range	184 °C. Atm. press.:100.32 kPa.
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 2.6% by volume; Upper flammable limit: 12.5% by volume
Flash point	104 °C. Atm. press.:100.01 kPa.
Auto-ignition temperature	> 400 °C. Atm. press.:> 100.01 - < 101.44 kPa.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 43.428. Temperature:25°C.;dynamic viscosity (in mPa s) = 24.247. Temperature:35°C.;dynamic viscosity (in mPa s) = 12.78. Temperature:45°C.
Solubility	greater than or equal to 100 mg/mL at 70° F (NTP, 1992)
Partition coefficient n-octanol/water	Pow = 0.085. Temperature:20.5 °C.;log Pow = -1.07. Temperature:20.5 °C.
Vapour pressure	20 Pa. Temperature:25 °C.
Density and/or relative density	1.03. Temperature:20 °C.
Relative vapour density	2.62 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts violently with strong oxidants and alkalis. This generates fire hazard.

10.2 Chemical stability

At cool temperatures, propylene glycol is stable in a well-closed container, but at high temperatures, in the open, it tends to oxidize, giving rise to products such as propionaldehyde, lactic acid, pyruvic acid, and acetic acid. Propylene glycol is chemically stable when mixed with ethanol (95%), glycerin, or water; aqueous solutions may be sterilized by autoclaving.

10.3 Possibility of hazardous reactions

Combustible liquid when exposed to heat or flame ...PROPYLENE GLYCOL is hygroscopic. It is sensitive to excessive heat (tends to oxidize at high temperatures). This compound can react with oxidizing materials. It is incompatible with acid chlorides, acid anhydrides, chloroformates, and reducing agents. It dissolves many essential oils. A mixture of this compound with hydrofluoric acid and silver nitrate was put in a glass bottle which burst 30 minutes later. (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Reacts with strong oxidants, causing fire hazard.

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male/female) - 22 000 mg/kg bw. Remarks: This value corresponds to 21.0 ml/kg bw, with standard errors of 19.2-23.9 ml/kg bw.
- Inhalation: LC50 - rabbit - > 317 042 mg/m³ air.
- Dermal: LD50 - rabbit - > 2 000 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the eyes and respiratory tract. Ingestion of large amounts could cause metabolic acidosis.

STOT-repeated exposure

no data available

Aspiration hazard

No indication can be given whether a harmful concentration in the air will be reached.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 40 613 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - *Ceriodaphnia dubia* - 18 340 mg/L - 48 h.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 24 200 mg/L - 72 h.
- Toxicity to microorganisms: NOEC - *Pseudomonas putida* - > 20 000 mg/L - 18 h.

12.2 Persistence and degradability

AEROBIC: Propylene glycol achieved 64% of its theoretical BOD using a sewage inoculum and a 5 day incubation period(1). A Warburg respirometer study employing a sewage seed showed that propylene glycol reached 78% of its theoretical BOD during a 40 day incubation period(2). Propylene glycol achieved 2.2, 56.7 and 80% of its theoretical BOD using a sewage inoculum and 5, 10, and 50 day incubation periods, respectively(3). Using raw wastewater and synthetic seawater as inoculum, propylene glycol achieved 55 and 83% of its theoretical BOD during 5 and 20 day incubation periods, respectively(4). Using wastewater from pretreated domestic sewage, propylene glycol reached 74.5% of its

theoretical BOD in 5 days(5). Propylene glycol underwent 73-78% mineralization within 51 days when incubated with various agricultural soils from Clemson University, SC under laboratory conditions at 22 deg C and 1,000 ppm propylene glycol in the soil; 40-79% mineralization was observed for propylene glycol incubated in the same soils for 64 days at 7 deg C(6).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for propylene glycol(SRC), using a log Kow of -0.92(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of propylene glycol is estimated as 1(SRC), using a log Kow of -0.92(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that propylene glycol is expected to have very high mobility in soil(SRC).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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14.5 Environmental hazards

ADR/RID: No	IMDG: No	IATA: No
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14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Propane-1,2-diol	Propane-1,2-diol	57-55-6	200-338-0
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Any questions regarding this SDS, Please send your inquiry to sds@xixisis.com

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