

SHANGHAI ORIENT CHEMICAL CO., LTD

Room 401,403 Haibao Building, No. 3615 Gonghexin Road, Jing'an District, Shanghai,China,200435

Tel: +86-21-56980898 Fax: +86-21-59969200

Visit us at: www.greenchemintl.com

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product/Chemical Name: Propylene glycol 99.5%

Company information: Shanghai Orient Chemical Co.,Ltd

Synonyms:

1,2-Dihydroxypropane; Methylethylene glycol; Monopropylene glycol;

1,2-Propylene glycol; 1,2-Propanediol; 2-Hydroxypropanol.

Chemical Formula: C₃H₈O₂

Structure Formula: CH₃—CH—CH₂
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 OH OH

TELEPHONE NUMBERS: 86-21-56980898

Transportation Emergency: 86-21-59969669

Company : Shanghai Orient Chemical Co.,Ltd

Medical Emergency: +86 15070667793

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS #	Chemical Name	%	EINECS #
57-55-6	Propylene glycol	99.5 min	200-338-0

Hazard Symbols: None Listed according to OSHA (1910.1200).

Risk Phrases: None Listed.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: colorless viscous liquid liquid. Caution! Hygroscopic. May cause eye, skin, and respiratory tract irritation.

Odor: Mild

WARNING STATEMENT

CAUTION!

ASPIRATION HAZARD IF SWALLOWED CAN ENTER LUNGS AND CAUSE DAMAGE

ATTENTION:

THIS PRODUCT IS NOT TO BE USED TO PRODUCE FOGS OR MISTS IN THEATRICAL, MUSICAL OR OTHER ENTERTAINMENT PERFORMANCES.

Target Organs: Central nervous system.

POTENTIAL HEALTH EFFECTS

Primary Route of Exposure:

Eye × **Skin** × **Inhalation** × **Ingestion**

Eye: May cause slight transient injury.

Skin: May be absorbed through damaged or abraded skin in harmful amounts. Allergic reactions have been reported. A single prolonged skin exposure is not likely to result in the material being absorbed in harmful amounts. Prolonged contact is essentially non-irritating to skin. Repeated exposures may cause problems. Propylene glycol causes allergic contact dermatitis in up to 12.5% of tested individuals.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Low hazard for usual industrial handling. May cause hemoglobinuric nephrosis. May cause changes in surface EEG.

Chronic: Exposure to large doses may cause central nervous system depression. Chronic ingestion may cause lactic acidosis and possible seizures. Exposures to propylene glycol having no adverse effects on the mother should have no effect on the fetus. Birth defects are unlikely. In animal studies, propylene glycol has been shown not to interfere with reproduction.

Inhalation: Low hazard for usual industrial handling. May cause respiratory tract irritation. Inhalation of a mist of this material may cause respiratory tract irritation. Material has a low vapor pressure, so exposure to vapor is not likely.

Sensitization Properties: Unknown

Chronic: No adverse effects have been documented in humans as a result of chronic exposure. Section 11 may contain applicable animal data.

Medical Conditions Aggravated by Exposure: There is no evidence that this product aggravates an existing medical condition.

Other Remarks: None

SECTION 4 - FIRST AID MEASURES

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Persons with impaired kidney function may be more susceptible to the effects of this substance. Treat symptomatically and supportively.

Other instructions: Aspiration of this product during induced emesis may result in severe lung injury. If evacuation of stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Center for additional treatment information.

SECTION 5 - FIRE FIGHTING MEASURES

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.

Autoignition Temperature: 371 °C

Flash Point: 99 °C

Explosion Limits, lower: 3.6 vol %

Explosion Limits, upper: 12.6 vol %

NFPA Rating: (estimated) Health: 0; Flammability: 1; Instability: 0

Recommended Fire Extinguishing Agents And Special Procedures: Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames. Use water spray to cool fire exposed containers. Water or foam may cause frothing.

Unusual or Explosive Hazards: None

Special Protective Equipment for Firefighters: No special equipment or procedures required.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

SECTION 7 - HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Minimum feasible handling temperatures should be maintained.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

EXPOSURE LIMITS

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Propylene glycol	none listed	none listed	none listed

OSHA Vacated PELs:

Propylene glycol: No OSHA Vacated PELs are listed for this chemical.

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air-supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

Ventilation: Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

Exposure Limit for the Total Product: None established for product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: colorless viscous liquid

Odor: Odorless

pH: Not available.

Vapor Pressure: 0.08 mm Hg (20°C)

Vapor Density: 2.62 (air=1)

Evaporation Rate: Not available.

Viscosity: 0.581 cps (20°C)

Boiling Point: 187°C

Freezing/Melting Point: -60 °C

Solubility in water: Soluble.

Specific Gravity/Density: 1.0360 g/cm³

Molecular Formula: C₃H₈O₂

Molecular Weight: 76.09

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Excess heat, moist air.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, aldehydes.

Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 57-55-6: TY2000000

LD50/LC50:

CAS# 57-55-6: Draize test, rabbit, eye: 100 mg Mild; Draize test, rabbit, eye: 500 mg/24H Mild; Oral, mouse: LD50 = 22 gm/kg; Oral, rabbit: LD50 = 18500 mg/kg; Oral, rat: LD50 = 20 gm/kg; Skin, rabbit: LD50 = 20800 mg/kg.

Carcinogenicity:

Propylene glycol -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

No information available.

Teratogenicity:

An expert panel convened by the NTP's Center for the Evaluation of Risks to Human Reproduction concluded 2/13/03 that developmental and reproductive risks stemming from exposure to the chemicals propylene glycol and ethylene glycol are negligible.

Reproductive Effects:

When propylene glycol was given at 30 percent in the diet, it affected reproduction in rates in rats. It has generally not affected fertility or reproduction, except at very high doses where effects could be attributed to nutritional deficiency.

Neurotoxicity:

No information available.

Mutagenicity:

DNA Inhibition: Subcutaneous, mouse = 8000 mg/kg.; Cytogenetic Analysis: Subcutaneous, mouse = 8000 mg/kg.; Cytogenetic Analysis: Hamster, Fibroblast = 32 gm/L.

Other Studies:

Standard Draize Test: Administration into the eye (rabbit) = 100 mg (Mild). Standard Draize Test: Administration into the eye (rabbit) = 500 mg/24H (Mild). Standard Draize Test: Administration onto the skin (human) = 500 mg/7days (Mild). Standard Draize Test: Administration onto the skin (human) = 104 mg/3 days-Intermittent (Moderate).

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Water flea Daphnia: EC50 > 10000 mg/L; 48 Hr; Unspecified Bacteria:

Phytobacterium phosphoreum: EC50 = 710 mg/L; 30 min; Microtox

testFish: Goldfish: LC50 > 5000 mg/L; 24 Hr; Unspecified Fish: Guppy:

LC50 > 1000 mg/L; 48 Hr; Unspecified If released to water, 1,2-propanediol is expected to degrade relatively rapidly via biodegradation. If released to soil, relatively rapid biodegradation should also occur. Significant leaching in soil can be predicted.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Methods:

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if

discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of the disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

SECTION 14 - TRANSPORT INFORMATION

Transportation

DOT:

Proper Shipping Name:

Not regulated

Hazard Class:

Not regulated

Identification number:

Not regulated

Packing Group:

Not regulated

Label Required:

Not regulated

IMDG

Proper Shipping Name:

Not regulated

ICAO

Proper Shipping Name:

Not regulated

TDG

Proper Shipping Name:

Not regulated

Hazard Class:

Not regulated

Identification number:

Not regulated

Label Required:

Not regulated

SECTION 15 - REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 57-55-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Propylene glycol can be found on the following state right to know lists: Pennsylvania, Minnesota.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 57-55-6: 0

United Kingdom Occupational Exposure Limits

CAS# 57-55-6: OES-United Kingdom, TWA 150 ppm TWA (vapor and particulates); 474 mg/m³ TWA (vapor and particulates); 10

United Kingdom Maximum Exposure Limits

Canada

CAS# 57-55-6 is listed on Canada's DSL List.

This product has a WHMIS classification of Not controlled..

CAS# 57-55-6 is listed on Canada's Ingredient Disclosure List.

SECTION 16 - ADDITIONAL INFORMATION

Aquatic Toxicity

LC50-96hr Aquatic toxicity rating is believed to be >100.00 mg/liter practically nontoxic

Mobility:

Not determined.

Persistence and Biodegradability:

This product is reported to have a moderate ($\geq 30\%$) rate of biodegradation in a test for ready biodegradation.

Potential to Bioaccumulate:

This product is reported to have a low potential to bioconcentrate .

Remarks:

None

This product is not to be used to produce fogs or mists in theatrical, musical or other entertainment performances.

MSDS Creation Date: 2014.1.11, **Revision #3 Date:** 2016.3.20

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

Inquiries regarding MSDS should be directed to:

Shanghai Orient Chemical Co.,Ltd

Address:Room 401,403 Haibao Building, No. 3615 Gonghexin Road, Jing'an District, Shanghai,China,200435