



Material Safety Data Sheet

12601 Twinbrook Parkway,
Rockville, MD 20852 USA

Phone Calls: 301-816-8129
8 a.m. to 5 p.m. EST Mon. - Fri.

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PROPYLENE GLYCOL

Catalog Number: 1576708

Revision Date:

October 24, 2005

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Common Name: Propylene Glycol

Manufacturer: U. S. Pharmacopeia

Responsible Party: Reference Standards Technical Services

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Product Use: USP Reference Standards and Authentic Substances are used for chemical tests and assays in analytical, clinical, pharmaceutical, and research laboratories.

SECTION 2 - HAZARD INFORMATION

EMERGENCY OVERVIEW - This material is irritating to the eyes, skin, mucous membranes, and respiratory tract.

CAUTION: Liquid propylene glycol is combustible, and propylene glycol vapor is explosive when exposed to heat or flame.

Adverse Effects: This material is used as an additive in foods, cosmetics, and pharmaceuticals, and it is considered to be nontoxic. Possible allergic reaction to material if inhaled, ingested, or in contact with skin.

Overdose Effects: Overdose may cause central nervous system depression, lactic acidosis, seizures, coma, and cardiovascular collapse.

Acute: Possible eye, skin, gastrointestinal, and/or respiratory tract irritation.

Chronic: Possible hypersensitization, lactic acidosis, stupor, and seizures.

Medical Conditions Aggravated by Exposure: Hypersensitivity to material and impaired kidney function.

Cross Sensitivity: n/f

Target Organs: n/f

For additional information on toxicity, see Section 11.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Propylene Glycol

Formula: C₃H₈O₂

Synonym: n/f

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Chemical Name: 1,2-Propanediol

CAS: 57-55-6

RTECS Number: TY2000000

Chemical Family: A Linear aliphatic derivative

Therapeutic Category: Pharmaceutic aid (humectant; solvent; suspending agent)

Composition: Pure Material

SECTION 4 - FIRST AID MEASURES

Inhalation: Causes irritation, and inhalation of high vapor concentration may cause central nervous system depression. Avoid inhalation. Remove to fresh air.

Eye: Causes irritation and stinging. Avoid contact. Flush with copious quantities of tepid water for at least 15 minutes.

Skin: Causes irritation. Avoid contact. Flush with copious quantities of soap and water. This material is may be absorbed through the skin.

Ingestion: Causes irritation. Avoid ingestion. Flush out mouth with water. This material is rapidly absorbed from the gastrointestinal tract.

General First Aid Procedures: Remove from exposure. Remove contaminated clothing. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention.

Note to Physicians

Overdose Treatment: Treatment of overdose should be symptomatic and supportive. Monitor for acidosis, hyperosmolality, and CNS changes. In symptomatic patients, monitor arterial blood gasses and ECG. [Meditext 2005]

SECTION 5 - FIREFIGHTING MEASURES

Extinguisher Media: Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials. Alcohol-resistant foams (ATC type) are preferable; do not use direct water stream.

Fire and Explosion Hazards: Liquid propylene glycol is combustible, and propylene glycol vapor is explosive when exposed to heat or flame.

Firefighting Procedures: As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill Response: Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing vapor. Ventilate area and wash spill site. Place spillage in appropriately labeled container for disposal.

SECTION 7 - HANDLING AND STORAGE

Handling: As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Wash thoroughly after handling.

Storage: Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

SECTION 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Controls: Engineering controls such as exhaust ventilation are recommended.

Respiratory Protection: Use a NIOSH-approved respirator, if it is determined to be necessary by an industrial hygiene survey involving air monitoring. In the event that a respirator is not required, an approved dust mask should be used.

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Gloves: Chemically compatible**Eye Protection:** Safety glasses or goggles**Protective Clothing:** Protect exposed skin.**Exposure Limits:** AIHA WEEL: 8-hr TWA 10 mg/m³

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Properties as indicated on the MSDS are general and not necessarily specific to the USP Reference Standard Lot provided.**Appearance and Odor:** Clear, colorless, viscous liquid; odorless or practically odorless.**Odor Threshold:** n/f**pH:** n/f**Melting Range:** -59° C**Boiling Point:** 188 - 189° C**Flash Point:** 99° C (CC)**Autoignition Temperature:** 371° C**Evaporation Rate:** 0.01**Upper Flammability Limit:** 12.5 %**Lower Flammability Limit:** 2.6%**Vapor Pressure:** 0.129 mm Hg @ 25° C**Vapor Density:** 2.62**Specific Gravity:** 1.0361 @ 20° C**Solubility in Water:** Miscible**Fat Solubility:** n/f**Other Solubility:** Miscible with acetone and with chloroform; soluble in ether.**Partition Coefficient: n-octanol/water:** -0.92**Percent Volatile:** n/f**Reactivity in Water:** n/f**Explosive Properties:** n/f**Oxidizing Properties:** n/f**Formula:** C₃H₈O₂**Molecular Weight:** 76.11

SECTION 10 - STABILITY AND REACTIVITY

Conditions to Avoid: Avoid exposure to moisture and high heat.

Incompatibilities: Oxidizing agents, strong acids, caustics, aliphatic amines, and isocyanates.

Decomposition Products: When heated to decomposition, material emits acrid smoke and irritating fumes. Emits toxic fumes under fire conditions.

Stable? Yes **Hazardous Polymerization?** No

SECTION 11 - TOXICOLOGICAL PROPERTIES

Oral Rat: LD50: 20 grams/kg

Oral Mouse: LD50: 22 grams/kg

Other Toxicity Data: Skin Rabbit LD50: 10,000 mg/kg

Irritancy Data: [RTECS] - Human/Skin: mild; moderate; Rabbit/Eye: mild

Corrosivity: n/f

Sensitization Data: n/f

Listed as a Carcinogen by: **NTP:** No **IARC:** No **OSHA:** No

Other Carcinogenicity Data: No

Mutagenicity Data: Propylene glycol was found to cause DNA inhibition and was positive in cytogenic studies in mice and hamster fibroblasts. It has been found to cause mutations in fruit fly larvae and sperm cell chromosomal aberrations when injected into mice. It has been negative in the Ames salmonella assay.

Reproductive and Developmental Effects: The Center for the Evaluation of Risks to Human Reproduction concluded that propylene glycol is not a reproductive or developmental toxicant in animals, and that human developmental or reproductive risks are of negligible concern.

SECTION 12 - ECOLOGICAL INFORMATION

Ecological Information: Concentrations of propylene glycol in the atmosphere are expected to be extremely low because of its low vapor pressure and high water solubility. It is readily biodegraded in water or soil. It is not expected to bioaccumulate. Propylene glycol is not acutely toxic to aquatic organisms except at very high concentrations.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal: Dispose of waste in accordance with all applicable Federal, State, and local laws.

SECTION 14 - TRANSPORT INFORMATION

Shipping Name: n/f

Class: n/f

UN Number: n/f

Packing Group: n/f

Additional Transport Information: n/f

SECTION 15 - REGULATORY INFORMATION

U.S. Regulatory Information: n/f

International Regulatory Information: EINECS#: 200-338-0

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SECTION 16 - OTHER INFORMATION

Revision: 24-Oct-05

Previous Revision Date: 20-Apr-01