



Material Safety Data Sheet

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Rockville, MD 20852 USA

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

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GLYCERIN

Catalog Number: 1295607

Revision Date:

November 24, 2008

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Common Name: Glycerin

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 - Irritant.

Adverse Effects: Adverse effects may include headache, nausea, vomiting, diarrhea, dizziness, dry mouth, increased thirst, and confusion. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

Overdose Effects: n/f

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

Chronic: Possible hypersensitization.

Medical Conditions Aggravated by Exposure: Hypersensitivity to material; heart, kidney, or liver disease; dehydration; hypervolemia; anuria; acute pulmonary edema; and diabetes mellitus.

Cross Sensitivity: n/f

Target Organs: Kidneys, eyes, skin, and respiratory system.

For additional information on toxicity, see Section 11.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Glycerin

Formula: C₃H₈O₃

Synonym: Glycerol; IFP; Glycerolum

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Chemical Name: 1,2,3-Propanetriol

CAS: 56-81-5

RTECS Number: MA8050000

Chemical Family: Linear aliphatic derivative; alcohol

Therapeutic Category: Pharmaceutic aid (humectant; solvent); laxative

Composition: Pure Material

SECTION 4 - FIRST AID MEASURES

Inhalation: Causes irritation. Avoid inhalation. Remove to fresh air.

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

Skin: Causes irritation and dermatitis. Avoid contact. Flush with copious quantities of soap and water.

Ingestion: May cause irritation and sweet warm taste. Avoid ingestion. Flush out mouth with water. This material is readily 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: For current information about the treatment of overdose, consult a certified Regional Poison Control Center by calling the number listed in your local telephone directory.

SECTION 5 - FIREFIGHTING MEASURES

Extinguisher Media: Water spray, dry chemical, carbon dioxide or foam as appropriate for surrounding fire and material.

Fire and Explosion Hazards: This material is combustible and may explode when exposed to strong oxidizers, flame, or extreme heat.

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. Place spillage in appropriately-labelled 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.

Gloves: Chemically compatible

Eye Protection: Safety glasses or goggles

Protective Clothing: Protect exposed skin.

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Exposure Limits: ACGIH: TWA 10 mg/m³ (mist)
OSHA: TWA 15 mg/m³ (total dust); TWA 5 mg/m³ (respirable fraction)

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 syrupy liquid; slight characteristic odor or odorless

Odor Threshold: n/f

pH: 5.0 -7.5 (1% aqueous solution)

Melting Range: 17 - 18° C

Boiling Point: 290° C (decomposes)

Flash Point: 177° C (OC); 198° C (CC); 160° C (CC)

Autoignition Temperature: 392.8° C; 370° C; 412° C at 1 atm

Evaporation Rate: n/f

Upper Flammability Limit: n/f

Lower Flammability Limit: 0.9 %

Vapor Pressure: <0.1 at 20° C

Vapor Density: 3.17 (air=1)

Specific Gravity: 1.26

Solubility in Water: Miscible

Fat Solubility: Insoluble in fixed and volatile oils

Other Solubility: Miscible with alcohol; insoluble in chloroform, in ether, in benzene, in carbon tetrachloride, in carbon disulfide, and in petroleum ether

Partition Coefficient: n-octanol/water: -1.76

Percent Volatile: 0

Reactivity in Water: n/f

Explosive Properties: n/f

Oxidizing Properties: n/f

Formula: C₃H₈O₃

Molecular Weight: 92.09

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SECTION 10 - STABILITY AND REACTIVITY

Conditions to Avoid: Avoid exposure to moisture.

Incompatibilities: Strong oxidizing agents such as chromium trioxide, hydrogen peroxide, potassium chlorate, and potassium permanganate, strong acids and bases, acetic anhydride, calcium oxychloride, alkali metal hydrides

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

Stable? Yes **Hazardous Polymerization?** No

SECTION 11 - TOXICOLOGICAL PROPERTIES

Oral Rat: LD50: 12600 mg/kg

Oral Mouse: LD50: 4090 mg/kg

Other Toxicity Data: Inhalation Rat LC50: > 570 mg/m³/1 hr
Skin Rabbit LD50: > 10 grams/kg
Oral Rabbit LD50: 27 grams/kg
Oral Guinea Pig LD50: 7750 mg/kg

Irritancy Data: Human/eye: not irritating
Human/skin (50% solution): not irritating, (0.05 ml): slight
Rabbit/eye (Standard Draize, 500 mg/24 hr): mild, (Standard Draize, 126 mg): mild
Rabbit/skin (Standard Draize, 500 mg/24 hr): mild

Corrosivity: n/f

Sensitization Data: Human (Patch Test): not sensitizing; Guinea Pig (0.1 ml of 0.1% solution): not sensitizing

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

Other Carcinogenicity Data: No studies conducted to modern regulatory guidelines are available. The studies that are available are of lower quality. No increase in tumor formation was observed in a limited dietary carcinogenicity study in the rat. Data from non-guideline studies designed to investigate tumor promotion activity in male mice suggest that oral administration of glycerol for up to 10 weeks had a weak promotion effect on the incidence of lung tumor formation. In the same studies, treatment with glycerol alone (administered in drinking water) did not result in an increase in the number of tumor bearing mice relative to controls. Overall, these data do not raise concern for carcinogenic potential. [Organisation for Economic Co-operation and Development, SIDS]

Mutagenicity Data: There are no structural alerts which raise concern for the inherent mutagenic potential of glycerol. Glycerol was negative (with and without activation) in the Ames tests in vitro and did not induce chromosomal effects in mammalian cells or primary DNA damage in vitro. Overall, glycerol is not considered to possess genotoxic potential. [Organisation for Economic Co-operation and Development, SIDS]

Reproductive and Developmental Effects: A fertility study involving 64 male workers involved in glycerol manufacturing reported no significant differences in sperm quality parameters. There were no effects on the reproductive efficiency of parents or on the growth, fertility, and reproductive performance of untreated offspring in a two-generation study of male and female rats given daily doses of glycerol (20% solution in water) for 8 weeks before mating and in females throughout pregnancy. NOAEL is 2000 mg/kg
Rats, mice, and rabbits given daily oral doses of glycerol at levels up to 1310, 1280, and 1180 mg/kg, respectively, during pregnancy did not experience maternal toxicity or an increase in birth defects in offspring.

SECTION 12 - ECOLOGICAL INFORMATION

Ecological Information: Glycerol is of low acute toxicity to fish, aquatic vertebrates, algae, and bacteria. This material is not expected to bioaccumulate significantly.

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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 # 200-289-5**SECTION 16 - OTHER INFORMATION****Revision:** 24-Nov-08**Previous Revision Date:** 12-Oct-05