

## 1. Identification

<b>Product identifier</b>	<b>Glycerin</b>	
<b>Other means of identification</b>		
<b>Catalog number</b>	1295607	
<b>Chemical name</b>	1,2,3-Propanetriol	
<b>Synonym(s)</b>	Glycerolum * Glycerol	
<b>Recommended use</b>	Specified quality tests and assay use only.	
<b>Recommended restrictions</b>	Not for use as a drug. Not for administration to humans or animals.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Company name</b>	U. S. Pharmacopeia	
<b>Address</b>	12601 Twinbrook Parkway Rockville MD 20852-1790 US	
<b>Telephone</b>	RS Technical Services	301-816-8129
<b>Website</b>	www.usp.org	
<b>E-mail</b>	RSTECH@usp.org	
<b>Emergency phone number</b>	CHEMTREC within US & Canada	1-800-424-9300
	CHEMTREC outside US & Canada	+1 703-527-3887

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>OSHA hazard(s)</b>	Not classified.
<b>Label elements</b>	
<b>Hazard symbol</b>	No symbol.
<b>Signal word</b>	Not available.
<b>Hazard statement</b>	Not available.
<b>Precautionary statement</b>	
<b>Prevention</b>	Not available.
<b>Response</b>	Not available.
<b>Storage</b>	Not available.
<b>Disposal</b>	Not available.
<b>Hazard(s) not otherwise classified (HNOC)</b>	Not classified.

## 3. Composition/information on ingredients

### Substance

### Hazardous components

Chemical name	Common name and synonyms	CAS number	%
Glycerin	Glycerolum Glycerol	56-81-5	100

## 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

<b>Most important symptoms/effects, acute and delayed</b>	Not available.
<b>General information</b>	Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	No unusual fire or explosion hazards noted.
<b>Special protective equipment and precautions for firefighters</b>	Wear suitable protective equipment.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of vapors. Wear appropriate personal protective equipment.
<b>Methods and materials for containment and cleaning up</b>	Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the SDS. Clean surface thoroughly to remove residual contamination.

## 7. Handling and storage

<b>Precautions for safe handling</b>	As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.
<b>Conditions for safe storage, including any incompatibilities</b>	Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
Glycerin (CAS 56-81-5)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

#### US. ACGIH Threshold Limit Values

Material	Type	Value	Form
Glycerin (CAS 56-81-5)	TWA	10 mg/m <sup>3</sup>	Mist.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.
<b>Skin protection</b>	
<b>Hand protection</b>	Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.
<b>Other</b>	For handling of laboratory scale quantities, a cloth lab coat is recommended. Where significant quantities are handled, work clothing may be necessary to prevent take-home contamination.

<b>Respiratory protection</b>	Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).
<b>Thermal hazards</b>	Not available.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Appearance</b>	Clear, colorless syrupy liquid.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Odor</b>	Odorless or slight characteristic odor.
<b>Odor threshold</b>	Not available.
<b>pH</b>	5 - 7.5 (1% aqueous solution)
<b>Melting point/freezing point</b>	62.6 - 64.4 °F (17 - 18 °C)
<b>Initial boiling point and boiling range</b>	554 °F (290 °C) 101.325 kPa
<b>Flash point</b>	350.60 °F (177.00 °C) Open Cup
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	0.9 %
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	< 0.1 at 20 ° C
<b>Vapor density</b>	3.17
<b>Relative density</b>	Not available.
<b>Solubility in water</b>	Miscible.
<b>Partition coefficient (n-octanol/water)</b>	-1.76
<b>Auto-ignition temperature</b>	739 °F (392.78 °C)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Chemical family</b>	Linear aliphatic derivative; alcohol.
<b>Dynamic viscosity</b>	17 mPa.s 954 mPa.s
<b>Dynamic viscosity temperature</b>	77 °F (25 °C)
<b>Molecular formula</b>	C3-H8-O3
<b>Molecular weight</b>	92.09 g/mol
<b>Percent volatile</b>	0 %
<b>Solubility (other)</b>	Miscible with alcohol; insoluble in chloroform, in ether, in benzene, in carbon tetrachloride, in carbon disulfide, and in petroleum ether.
<b>Specific gravity</b>	1.26
<b>VOC (Weight %)</b>	100 %

## 10. Stability and reactivity

<b>Reactivity</b>	No reactivity hazards known.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	None known.
<b>Incompatible materials</b>	Strong oxidizing agents.

**Hazardous decomposition products** Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

## 11. Toxicological information

### Information on likely routes of exposure

**Ingestion** Based on available data, the classification criteria are not met.  
**Inhalation** Due to lack of data the classification is not possible.  
**Skin contact** Due to lack of data the classification is not possible.  
**Eye contact** Based on available data, the classification criteria are not met.

**Symptoms related to the physical, chemical, and toxicological characteristics** Headache. Nausea. Vomiting. Diarrhea. Dizziness. Dry mouth. Thirst. Confusion.

**Medical conditions aggravated by exposure** Heart disease. Impaired liver function. Impaired kidney function. Diabetes mellitus.

### Acute toxicity

Product	Species	Test Results
Glycerin (CAS 56-81-5)		
<i>Oral</i>		
LD50	Mouse	4090 mg/kg
	Rat	12600 mg/kg

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Based on available data, the classification criteria are not met.

### Local effects

500 mg Eye irritancy (Draize)  
Result: Mild irritation.  
Species: Rabbit  
Test Duration: 24 hours  
500 mg Skin irritancy (Draize)  
Result: Mild irritation.  
Species: Rabbit  
Test Duration: 24 hours  
Eye irritancy  
Result: Non-irritating.  
Species: Human  
Skin irritancy (50% solution)  
Result: Non-irritating.  
Species: Human

**Respiratory sensitization** Due to lack of data the classification is not possible.

**Skin sensitization** Based on available data, the classification criteria are not met.

### Sensitization

Human patch test  
Result: Non-sensitizing.  
Patch test (0.1 ml of a 0.1% solution)  
Result: Non-sensitizing.  
Species: Guinea pig

**Germ cell mutagenicity** Due to lack of data the classification is not possible. Data from germ cell mutagenicity tests were not found.

### Mutagenicity

Ames test  
Result: Negative.  
In vitro chromosomal aberration test in mammalian cells  
Result: Negative.  
In vitro primary DNA damage test  
Result: Negative.

**Carcinogenicity** Based on available data, the classification criteria are not met. This material is not considered to be a carcinogen by IARC, NTP, or OSHA.

Dietary study  
Result: No evidence of carcinogenicity.  
Species: Rat

**Reproductive toxicity** Based on available data, the classification criteria are not met.

## Reproductivity

1180 mg/kg/day Developmental study  
Result: No evidence of maternal toxicity or increase in birth defects.

Species: Rabbit

1280 mg/kg/day Reproductive study  
Result: No evidence of maternal toxicity or increase in birth defects.

Species: Mouse

2000 mg/kg Reproductive study (two generation, 20% solution in drinking water)

Result: No effects on reproductive efficiency, growth, fertility, or reproductive performance.

Species: Rat

**Specific target organ toxicity - single exposure** Due to lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure** Due to lack of data the classification is not possible.

**Aspiration hazard** Due to lack of data the classification is not possible.

## 12. Ecological information

### Ecotoxicity

Product	Species	Test Results
Glycerin (CAS 56-81-5)		
<b>Aquatic</b>		
Fish	LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss)	51000 - 57000 mg/l, 96 hours

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** Not available.

**Mobility in soil** Not available.

**Other adverse effects** Not available.

## 13. Disposal considerations

**Disposal instructions** Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

**Local disposal regulations** Not available.

**Hazardous waste code** Not available.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

Not regulated as a hazardous material by DOT.

### IATA

Not regulated as a dangerous good.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** No information available.

## 15. Regulatory information

**US federal regulations** CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No  
**SARA 311/312 Hazardous chemical** No

**Other federal regulations**

**Safe Drinking Water Act (SDWA)** Not regulated.  
**Food and Drug Administration (FDA)** Not regulated.

**US state regulations**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**16. Other information, including date of preparation or last revision**

**Issue date** 11-24-2008  
**Revision date** 07-15-2014  
**Version #** 02

**Further information** Not available.

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**Revision Information** This document has undergone significant changes and should be reviewed in its entirety.