

## 1. Identification

|                                                        |                                                                     |                 |
|--------------------------------------------------------|---------------------------------------------------------------------|-----------------|
| Product identifier                                     | Polyethylene Glycol 600                                             |                 |
| Other means of identification                          |                                                                     |                 |
| Catalog number                                         | 1546467                                                             |                 |
| Chemical name                                          | alpha-Hydro-omega-hydroxypoly(oxy-1,2-ethanediyl)                   |                 |
| Recommended use                                        | Specified quality tests and assay use only.                         |                 |
| Recommended restrictions                               | Not for use as a drug. Not for administration to humans or animals. |                 |
| Manufacturer/Importer/Supplier/Distributor information |                                                                     |                 |
| Company name                                           | U. S. Pharmacopeia                                                  |                 |
| Address                                                | 12601 Twinbrook Parkway<br>Rockville<br>MD<br>20852-1790<br>US      |                 |
| Telephone                                              | RS Technical Services                                               | 301-816-8129    |
| Website                                                | www.usp.org                                                         |                 |
| E-mail                                                 | RSTECH@usp.org                                                      |                 |
| Emergency phone number                                 | CHEMTREC within US & Canada                                         | 1-800-424-9300  |
|                                                        | CHEMTREC outside US & Canada                                        | +1 703-527-3887 |

## 2. Hazard(s) identification

|                                           |                                                                                                                                                                                            |             |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Physical hazards                          | Not classified.                                                                                                                                                                            |             |
| Health hazards                            | Serious eye damage/eye irritation                                                                                                                                                          | Category 2B |
| OSHA hazard(s)                            | Not classified.                                                                                                                                                                            |             |
| Label elements                            |                                                                                                                                                                                            |             |
| Hazard symbol                             | No symbol.                                                                                                                                                                                 |             |
| Signal word                               | Warning                                                                                                                                                                                    |             |
| Hazard statement                          | Causes eye irritation.                                                                                                                                                                     |             |
| Precautionary statement                   |                                                                                                                                                                                            |             |
| Prevention                                | Wash thoroughly after handling.                                                                                                                                                            |             |
| Response                                  | If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |             |
| Storage                                   | Not available.                                                                                                                                                                             |             |
| Disposal                                  | Not available.                                                                                                                                                                             |             |
| Hazard(s) not otherwise classified (HNOC) | Not classified.                                                                                                                                                                            |             |

## 3. Composition/information on ingredients

### Substance

#### Hazardous components

| Chemical name           | Common name and synonyms | CAS number | %   |
|-------------------------|--------------------------|------------|-----|
| Polyethylene Glycol 600 |                          | 25322-68-3 | 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 cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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.                                                                               |

**Most important symptoms/effects, acute and delayed**

Irritation of eyes and mucous membranes. Gastrointestinal disturbances.

**Indication of immediate medical attention and special treatment needed**

Treatment for overdose of polyethylene glycol should be symptomatic and supportive and may include the following:

1. Monitor acid-base balance, renal function, pulmonary function, serum calcium, osmolality, and pulse oximetry.
2. For acidosis, administer sodium bicarbonate intravenously.
3. For acute lung injury, maintain ventilation and oxygenation. Early use of PEEP and mechanical ventilation may be needed. Onset of acute lung injury may be delayed 24 to 72 hours after exposure.
4. Hemodialysis may be beneficial in severe acid-base imbalances or in renal failure. [Toxicologic Managements 2005]

**General information**

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

**Suitable extinguishing media**

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media**

Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**

No unusual fire or explosion hazards noted.

**Special protective equipment and precautions for firefighters**

Wear suitable protective equipment.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

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.

**Methods and materials for containment and cleaning up**

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

**Precautions for safe 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. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.

**Conditions for safe storage, including any incompatibilities**

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. Workplace Environmental Exposure Level (WEEL) Guides**

| Material                                    | Type | Value                | Form     |
|---------------------------------------------|------|----------------------|----------|
| Polyethylene Glycol 600<br>(CAS 25322-68-3) | TWA  | 10 mg/m <sup>3</sup> | Aerosol. |

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

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.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

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 liquid.                                                             |
| <b>Physical state</b>                               | Liquid.                                                                              |
| <b>Form</b>                                         | Liquid.                                                                              |
| <b>Odor</b>                                         | Mild odor.                                                                           |
| <b>Odor threshold</b>                               | Not available.                                                                       |
| <b>pH</b>                                           | Not available.                                                                       |
| <b>Melting point/freezing point</b>                 | 68 - 77 °F (20 - 25 °C)                                                              |
| <b>Initial boiling point and boiling range</b>      | > 392 °F (> 200 °C) (decomposes)                                                     |
| <b>Flash point</b>                                  | 390.20 - 460.40 °F (199.00 - 238.00 °C) Open Cup<br>523.40 °F (273.00 °C) Closed Cup |
| <b>Evaporation rate</b>                             | < 0 (Butyl acetate = 1)                                                              |
| <b>Flammability (solid, gas)</b>                    | Not applicable.                                                                      |
| <b>Upper/lower flammability or explosive limits</b> |                                                                                      |
| <b>Flammability limit - lower (%)</b>               | Not available.                                                                       |
| <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>                               | < 0.01 mm Hg at 20 °C                                                                |
| <b>Vapor density</b>                                | > 10 (air = 1)                                                                       |
| <b>Relative density</b>                             | Not available.                                                                       |
| <b>Solubility in water</b>                          | Miscible.                                                                            |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                                                                       |
| <b>Auto-ignition temperature</b>                    | Not available.                                                                       |
| <b>Decomposition temperature</b>                    | Not available.                                                                       |
| <b>Viscosity</b>                                    | Not available.                                                                       |
| <b>Other information</b>                            |                                                                                      |
| <b>Chemical family</b>                              | Oxyalkylene polymer.                                                                 |
| <b>Molecular formula</b>                            | (C2-H4-O)MULT-H2-O                                                                   |
| <b>Molecular weight</b>                             | 570 - 630                                                                            |
| <b>pH in aqueous solution</b>                       | 4.5 - 7.5 (5% solution)                                                              |
| <b>Solubility (other)</b>                           | Soluble in dichloromethane, in alcohol, and in acetone.                              |
| <b>Specific gravity</b>                             | 1.128                                                                                |

## 10. Stability and reactivity

|                                           |                                                             |
|-------------------------------------------|-------------------------------------------------------------|
| <b>Reactivity</b>                         | No reactivity hazards known.                                |
| <b>Chemical stability</b>                 | Stable at 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. Strong acids. Strong bases.                             |
| <b>Hazardous decomposition products</b> | Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions. |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |                                                                   |
|---------------------|-------------------------------------------------------------------|
| <b>Ingestion</b>    | Based on available data, the classification criteria are not met. |
| <b>Inhalation</b>   | Due to lack of data the classification is not possible.           |
| <b>Skin contact</b> | Due to lack of data the classification is not possible.           |
| <b>Eye contact</b>  | Causes eye irritation.                                            |

**Symptoms related to the physical, chemical, and toxicological characteristics** Polyethylene glycols: Nausea. Vomiting. Diarrhea. Bloating. Cramping. Gas. Taste disorders.

**Delayed and immediate effects of exposure** Polyethylene glycols: Heart arrhythmias. Low blood pressure. Metabolic acidosis. Kidney damage.

**Medical conditions aggravated by exposure** Polyethylene glycols: Gastrointestinal tract obstruction. Gastric retention. Gastric perforation. Toxic or active colitis.

### Acute toxicity

| Product                                  | Species | Test Results |
|------------------------------------------|---------|--------------|
| Polyethylene Glycol 600 (CAS 25322-68-3) |         |              |
| <b>Acute</b>                             |         |              |
| <i>Dermal</i>                            |         |              |
| LD50                                     | Rabbit  | > 20 g/kg    |
| <i>Oral</i>                              |         |              |
| LD50                                     | Mouse   | 36 g/kg      |
|                                          | Rat     | 30 g/kg      |

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

**Serious eye damage/eye irritation** Causes eye irritation.

### Local effects

Eye irritancy test  
Result: Mild transient iritis; minor to moderate conjunctival irritation.  
Species: Rabbit  
Skin irritancy test  
Result: No irritation.  
Species: Human  
Skin irritancy test  
Result: No irritation.  
Species: Rabbit

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

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

**Germ cell mutagenicity** Due to lack of data the classification is not possible.  
Data from germ cell mutagenicity tests were not found.  
A related material tested negative in in vitro and in vivo mutagenicity assays.

**Carcinogenicity** Due to lack of data the classification is not possible.  
This material is not considered to be a carcinogen by IARC, NTP, or OSHA.  
A related material has not caused cancer in animal studies.

**Reproductive toxicity** Due to lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Based on available data, the classification criteria are not met.

**Specific target organ toxicity - repeated exposure** Based on available data, the classification criteria are not met.

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

## 12. Ecological information

### Ecotoxicity

| Product                                  |      | Species                              | Test Results           |
|------------------------------------------|------|--------------------------------------|------------------------|
| Polyethylene Glycol 600 (CAS 25322-68-3) |      |                                      |                        |
| <i>Acute</i>                             |      |                                      |                        |
| Crustacea                                | LC50 | Daphnia magna                        | > 10000 mg/l, 48 hours |
| <i>Aquatic</i>                           |      |                                      |                        |
| Fish                                     | LC50 | Atlantic salmon (Salmo salar)        | > 1000 mg/l, 96 hours  |
| <i>Acute</i>                             |      |                                      |                        |
| Fish                                     | LC50 | Fathead minnow (Pimephales promelas) | > 10000 mg/l, 96 hours |

**Persistence and degradability** Readily biodegradable.

**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 - No  
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) | No                     |
| 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** 06-06-2005

**Revision date** 09-11-2014

**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.