



THE POWER OF THREE<sup>3</sup>

**PHARMCO-AAPER**

AND COMMERCIAL ALCOHOLS

**Product Information (203) 740-3471**

**Emergency Assistance CHEMTREC 1-800-424-9300**

Manufacturer: PHARMCO-AAPER.

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Emergency Contact:  
CHEMTREC 1-800-424-9300

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## Triethylene Glycol

### 1. CHEMICAL PRODUCT IDENTIFICATION

Product Name: Triethylene Glycol  
Product Catalog Number(s): TR-4291  
Synonym(s):  
Molecular Formula: HOCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>OH  
Molecular Weight: 150.17

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry Number)  
100% Triethylene Glycol (112-27-6)

### 3. HAZARDS IDENTIFICATION

CAUTION! HYGROSCOPIC. ASPIRATION HAZARD. MAY CAUSE EYE AND SKIN IRRITATION. MAY CAUSE DIGESTIVE TRACT IRRITATION WITH NAUSEA, VOMITING, AND DIARRHEA. INHALATION OF A MIST OF THIS MATERIAL. MAY CAUSE IRRITATION OF THE LUNGS.

NFPA Hazard Ratings: Health - 1, Flammability - 1, Reactivity - 0

NOTE: NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

Potential Health Effects

Eye: May cause eye irritation.

Skin: Exposure may cause irritation characterized by redness, dryness, and inflammation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Possible aspiration hazard.

Inhalation: Inhalation of a mist of this material may cause respiratory tract irritation.

Chronic: No information found.

Target Organs: None.

### 4. FIRST-AID MEASURES

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.

Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

## **5. FIRE FIGHTING MEASURES**

Fire:

Flash Point (Cleveland open cup): 167°C (332.6°F)

Lower Explosive Limit: 0.9 volume %

Upper Explosive Limit: 9.2 volume %

Autoignition Temperature (ASTM D2155): 357°C (674.6°F)

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: May form peroxides of unknown stability.

## **6. ACCIDENTAL RELEASE MEASURES**

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

## **7. HANDLING AND STORAGE**

Personal Precautionary Measures: No special precautionary measures should be needed under anticipated Conditions of use.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials. Minimize exposure to air.

Storage: Keep container closed. Store away from heat and light.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Exposure Limits:

ACGIH Threshold Limit Value (TLV): not established

OSHA (USA) Permissible Exposure Limit (PEL, 1989 Table Z-1-A values or section-specific standards):

not Established Ventilation: Good general ventilation (typically 10 air changes per hour) should be used.

Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn.

Respirator type: mist; organic vapor. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: It is a good industrial hygiene practice to minimize skin contact.

Recommended Decontamination Facilities: eye bath, washing facilities

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical Form: viscous liquid

Color: colorless

Odor: mild

Odor Threshold: not applicable

Specific Gravity at 20°C (68°F) (water = 1): 1.12

Vapor Pressure at 114°C (237.2°F): 1.33 mbar (1 mm Hg)

Vapor Density (Air = 1): 5.2

Evaporation Rate (n-butyl acetate = 1): 0.001

Boiling Point: 285°C (545°F)

Melting Point: -5°C (23°F)  
Viscosity at Ambient Temperature: not available  
Solubility in Water: 100 %; complete  
pH: not available  
Octanol/Water Partition Coefficient: not available

## 10. STABILITY AND REACTIVITY

Stability: Stable; however, may form peroxides at elevated temperatures.  
Incompatibility: Material can react with strong oxidizing agents.  
Hazardous Polymerization: will not occur

## 11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

Inhalation: Low hazard for usual industrial handling or commercial handling by trained personnel.

Eyes: Low hazard for usual industrial handling or commercial handling by trained personnel.

Skin: Low hazard for usual industrial handling or commercial handling by trained personnel.

Ingestion: Expected to be a low ingestion hazard.

Acute Toxicity Data:

Oral LD-50 (rat): 15-22 g/kg

Oral LD-50 (mouse): 21 g/kg

Oral LD-50 (rabbit): 8.4-9.5 g/kg

Oral LD-50 (guinea pig): 7.9-14.66 g/kg

Dermal LD-50 (rabbit): >5 g/kg

Skin irritation (human): none

Skin irritation (rabbit): slight

Skin sensitization (human): none

Eye irritation (rabbit): slight

Definitions for the following section(s): LOEL = lowest-observed-effect level,  
NOAEL = no observed-adverse-effect level, NOEL = no-observed-effect level.

Subchronic Toxicity Data:

Inhalation study (13 months, rat): 1 ppm, vapor: NOEL = 1 ppm (highest concentration obtainable)

Inhalation study (12 months, monkey): 1 ppm, vapor: NOEL = 1 ppm (highest concentration obtainable)

Chronic Toxicity Data:

Oral study (2 years, rat): NOEL = 4% (highest dose tested)

## 12. ECOLOGICAL INFORMATION

Introduction: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, it is not meant to address discharges to sanitary sewers or publicly owned treatment works. Data for this material have been used to estimate its environmental impact. It has the following properties: a high biochemical oxygen demand and a potential to cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to affect secondary waste treatment microbial respiration, a low potential to affect the germination and/or early growth of some plants. It is expected to have the following properties: a low potential to bioconcentrate. After dilution with a large amount of water, followed by secondary waste treatment, this material is not expected to cause adverse environmental effects.

Oxygen Demand Data:

ThOD: 1.60 g oxygen/g

COD: 1.59 g oxygen/g

BOD-5: 0.03 g oxygen/g

BOD-20: 0.27 g oxygen/g

Acute Aquatic Effects Data:

24-h LC-50 (goldfish): >5000 mg/l

48-h LC-50 (golden orfe): >10000 mg/l

96-h LC-50 (fathead minnow): >1000 microliter(s)/l

96-h LC-50 (daphnid): >1000 microliter(s)/l

Biodegradation:

Using activated sludge acclimated for 20 days at 20°C (68°F), this material served as the sole carbon source, and 97.7% COD removal was observed over a period of up to 120 hours at a rate of 27.5 mg COD removed/gram of dry inoculum/hour.

Secondary Waste Water Treatment Effects:

5-hour IC-50: >5000 mg/l

7-Day Plant Germination Effects - No-adverse-effect concentration:

Ryegrass: >1000 microliter(s)/l

Radish: >1000 microliter(s)/l

Lettuce: >1000 microliter(s)/l

7-Day Plant Seedling Effects - No-adverse-effect concentration:

Marigold: >1000 microliter(s)/l

Radish: >1000 microliter(s)/l

Corn: >1000 microliter(s)/l

Lettuce: >1000 microliter(s)/l

### **13. DISPOSAL CONSIDERATIONS**

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate.

### **14. TRANSPORT INFORMATION**

Not regulated

### **15. REGULATORY INFORMATION**

- This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

- OSHA Classification: nonhazardous

- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause cancer: none

- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the

State to cause adverse reproductive effects: none

- This document has been prepared in accordance with the MSDS requirements of the WHMIS Controlled Products

Regulation.

- WHMIS (Canada) Status: noncontrolled

- WHMIS (Canada) Hazard Classification: not applicable

- Carcinogenicity Classification (components present at 0.1% or more):

- International Agency for Research on Cancer (IARC): not listed

- American Conference of Governmental Industrial Hygienists (ACGIH): not listed

- National Toxicology Program (NTP): not listed

- Occupational Safety and Health Administration (OSHA): not listed

- Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and

Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: none

- SARA (U.S.A.) Sections 311 and 312 hazard classification(s): not applicable

- US Toxic Substances Control Act (TSCA): This product is listed on the TSCA inventory. Any impurities present

in this product are exempt from listing.

- Canadian Environmental Protection Act (CEPA) and Domestic Substances List (DSL): This product is listed on the DSL or otherwise complies with CEPA new substance notification requirements.

- European Inventory of Existing Commercial Chemical Substances (EINECS): This product is listed on EINECS.

EINECS Number: 2039532

### **16. OTHER INFORMATION**

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.