

An ISO 9001:2000
Certified Company



THE POWER OF THREE³

PHARMCO-AAPER

AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

Manufacturer: PHARMCO-AAPER
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 40065
Phone (502) 633-0650
Fax (502) 633-0685

Propylene Glycol

1. CHEMICAL PRODUCT IDENTIFICATION

Product Name: Propylene Glycol
Synonym(s): 1,2-Propanediol; 1,2-Propylene Glycol; 1,2-Dihydroxypropane; 2-Hydroxypropanol
Molecular Formula: $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{OH}$
Molecular Weight: 76.10

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry Number)
100% Propylene Glycol (57-55-6)

3. HAZARDS IDENTIFICATION

WARNING! MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. CAUSES EYE AND SKIN IRRITATION. MAY CAUSE FETAL EFFECTS.

NFPA Hazard Ratings: Health - 0, 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: May cause skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system effects.

Inhalation: Low hazard for usual industrial handling.

Chronic: May cause fetal effects.

Target Organs: Central nervous system.

4. FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Skin: Wash with soap and water. If skin irritation or an allergic skin reaction develops, get medical attention.

Ingestion: Material is of sufficiently low toxicity that induction of vomiting should not be necessary.

5. FIRE FIGHTING MEASURES

Fire:

Flash Point (Tag closed cup): 101°C (214°F)

Lower Flammable Limit at 163°C (325°F): 2.35 volume %

Upper Flammable Limit at 174°C (345°F): 13.7 volume %

Autoignition Temperature (ASTM E 659): 423°C (793°F)

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO₂), 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: none

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.

Storage: Keep container closed.

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

AIHA Workplace Environmental Exposure Level (WEEL): Propylene Glycol: 50 ppm TWA, total; 10 mg/m³ TWA, aerosol only

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 below recommended exposure limits.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, 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 63 FR 1152, January 8, 1998.

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): 1.038

Vapor Pressure at 20°C (68°F): 0.106 mbar (0.08 mm Hg)

Vapor Density (Air = 1): 2.6

Evaporation Rate (n-butyl acetate = 1): 0.005

Boiling Point: 187.3°C (369.0°F)

Melting Point: -60.0°C (-76.0°F)

Viscosity at 20°C (68°F): 60.5 mPa.s or cP

Solubility in Water at 20°C (68°F): 100 %
pH: not available
Octanol/Water Partition Coefficient: log P = -0.92, P = 0.12

10. STABILITY AND REACTIVITY

Stability: stable

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: This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Ingestion: Expected to be a low ingestion hazard.

Acute Toxicity Data:

Oral LD-50 (rat): 21.0-33.7 g/kg

Oral LD-50 (mouse): 23.9-31.8 g/kg

Oral LD-50 (guinea pig): 18.4-19.6 g/kg

Oral LD-50 (rabbit): 15.7-19.2 g/kg

Inhalation LC-50 (rat): >105 ppm/8 hour(s) (highest concentration obtainable)

Dermal LD-50 (rabbit): 20.8 g/kg

Skin irritation (guinea pig): none

Skin irritation (rabbit): none

Skin sensitization (human): slight

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: Oral study (140 days, rat): NOEL = 13200 mg/kg/day

Chronic Toxicity Data:

Oral study (2 years, dog): NOEL = 2000 mg/kg/day

Inhalation study (12-18 months, rat): NOEL = 65.8-100 ppm/day (highest concentration obtainable)

Carcinogenicity Data: Oral study (2 years, dog): NOEL = 2500 mg/kg/day (highest dose tested)

Reproductive Toxicity Data: Oral study (mouse): NOEL for maternal/paternal toxicity = 10100 mg/kg/day (highest dose tested); NOEL for maternal/paternal

fertility = 10100 mg/kg/day (highest dose tested); NOEL for embryo/fetotoxicity = 10100 mg/kg/day (highest dose tested).

Mutagenicity/Genotoxicity Data: Salmonella typhimurium assay (Ames test): negative (+/- activation)

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 persist in the environment, 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: 1.68 g oxygen/g

COD: 1.63 g oxygen/g

BOD-5: 1.08 g oxygen/g

BOD-20: 1.225 g oxygen/g

Acute Aquatic Effects Data:

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

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

96-h LC-50 (rainbow trout): >10000 mg/l

96-h LC-50 (bluegill sunfish): 1700 mg/l

96-h LC-50 (tidewater silverside): 650 mg/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 known
- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause adverse reproductive effects: none known
- 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. Any impurities present in this product are exempt from listing.
- European Inventory of Existing Commercial Chemical Substances (EINECS): This product is listed on EINECS. EINECS Number: 2003380
- Australian Inventory of Chemical Substances (AICS) and National Industrial Chemicals Notification and Assessment Scheme (NICNAS): This product is listed on AICS or otherwise complies with NICNAS.
- Japanese Handbook of Existing and New Chemical Substances: This product is listed in the Handbook or has been approved in Japan by new substance notification.
- Korean Toxic Substances Control Act: This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act. ECL Number: 2-1420

16. OTHER INFORMATION

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.