



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

## DIETHYLENE GLYCOL DIETHYL ETHER

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Diethylene Glycol Diethyl Ether

Synonyms: 2-Ethoxyethyl Ether; Ethyl Diglyme; 1-Ethoxy-2-(beta-ethoxyethoxy)ethane; bis(2, 2-diethoxyethyl)ether; 2-Ethoxyethyl ether; diethyldiglycol, diethyl carbitol

Chemical Formula: (C<sub>2</sub>H<sub>5</sub>OCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>O

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

### 2. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Diethylene Glycol Diethyl Ether	112-36-7	>99%	Yes

### 3. HAZARDS IDENTIFICATION

CAUTION! MAY CAUSE IRRITATION TO EYES, SKIN, AND MUCOUS MEMBRANES. TARGET ORGANS: NONE IDENTIFIED.

Acute Exposure Hazards:

Inhalation Hazard: May cause respiratory tract irritation.

Ingestion Hazard: May cause digestive tract disturbances.

Skin Contact Hazard: May cause skin irritation.

Eye Contact Hazard: May cause eye irritation.

Chronic Exposure Hazards: No information found.

### 4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward. Get medical aid.

*Skin Contact:* Remove any contaminated clothing. Flush skin with water for at least 15 minutes. Get medical attention in irritation develops and persists.

*Eye Contact:* Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

*Notes to Physician:* Treat symptomatically and supportively.

## 5. FIRE FIGHTING MEASURES

*Flammability:* Flammable liquid and vapor.

*Auto-ignition Temperature:* 215° C (419° F)

*Flash Point:* 82° C (180° F)

*Flammable Limits:* Lower Limit – Not available, Upper Limit – Not available

*Products of Combustion:* May decompose into irritating and toxic gases under fire conditions (carbon monoxide, carbon dioxide, peroxides).

*Specific Fire Hazards:* As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Vapors may form explosive mixtures with air. Containers may explode in heat of fire. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Liquid floats on water and may travel to a source of ignition and spread the fire.

*Specific Explosion Hazards:* May form explosive peroxides in contact with oxidizers.

*Fire Fighting Media:* In case of fire, use water spray, dry chemical, carbon dioxide, or appropriate foam.

*Special Remarks:* None

## 6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Use spark-proof tools. Provide ventilation to the affected area and remove all ignition sources. A vapor suppressing foam may be used to reduce vapors. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

## 7. HANDLING AND STORAGE

*Precautions:* Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Ground or bond containers before transferring material. Empty containers contain product residue (liquid and vapor) and can be dangerous. Use with adequate ventilation. Avoid breathing vapor or mist.

*Storage:* Store away from ignition sources. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

*Engineering Controls:* Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

*Personal Protection:* Wear chemical splash goggles. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

*Exposure Limits:*

ACGIH – None listed.

NIOSH – None listed.

OSHA Final PELs – None listed.

OSHA Vacated PELs: None listed.

*Eye Protection:* Wear protective chemical goggles or other appropriate eye protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

*Physical State and Appearance:* Clear, colorless liquid.

*Odor:* Ether-like odor

*Odor Threshold:* Not available

*Taste:* Not available

*Molecular Formula:* (C<sub>2</sub>H<sub>5</sub>OCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>O

Molecular Weight: 162.23  
pH: Not available  
Boiling Point: 189° C @ 760 mm Hg  
Freezing/Melting Point: -44° C  
Decomposition Temperature: Not available.  
Specific Gravity: 0.909 g/cm<sup>3</sup>  
Vapor Density (Air=1): 5.6  
Vapor Pressure: 0.48 mm Hg at 25° C  
Evaporation Rate (Butyl acetate = 1): Not available.  
Viscosity: Not available.  
Solubility: Miscible in water, alcohol, and ether

## 10. STABILITY AND REACTIVITY

Stability: Stable under normal temperature and pressure. After long term storage, chemicals containing similar functional groups form peroxides of unknown stability.

Conditions to Avoid: Excess heat, prolonged exposure to air.

Incompatibility With Various Substances: Strong oxidizers.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, peroxides.

Hazardous Polymerization: Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Animal Toxicity:

Oral, rat: LD50 = 4970 mg/kg;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: As is the case for some other glycol ethers, diglyme produces testicular cancer in rats, producing degeneration of spermatocytes. This effect, which is mediated by the methoxyacetic acid metabolite, appears to be reversible.

Mutagenicity: No information available.

Neurotoxicity: No information available.

Other Studies: No information available.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity: No information available.

Environmental Fate: This chemical is expected to biodegrade slowly in the environment.

Physical: No information available.

## 13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements. This material is neither a "P" listed nor a "U" listed waste under 40 CFR 261.33.

## 14. TRANSPORT INFORMATION

US DOT

Not regulated for transportation.

Canada TDG

Not regulated for transportation.

International (Water, I.M.O.)

Not regulated for transportation.

International (Air, I.C.A.O.)

Not regulated for transportation.

## 15. REGULATORY INFORMATION

### US Federal Regulations:

TSCA: CAS# 112-36-7 is listed on the TSCA Inventory.

Health and Safety Reporting List: Not listed.

Chemical Test Rules: Not listed.

Section 12b: 1% de minimis concentration.

TSCA Significant New Use Rule: Not listed.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: **NONE**

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 112-36-7– immediate, delayed

Section 313: Diethylene glycol diethyl ether, listed as glycol ethers (CAS# 112-36-7) is subject to SARA Title III Section 313 40 CFR 373 reporting requirements.

Clean Air Act: CAS# 112-36-7 (listed as glycol ethers) is listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 112-36-7 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

### US State Regulations:

CAS# 112-36-7 is on the following state right-to-know lists: New Jersey (listed as glycol ethers) and Pennsylvania (listed as glycol ethers).

California Prop 65: No Significant Risk Level: Not listed

### Canada:

DSL/NDSL: CAS# 112-36-7 is listed on Canada's DSL list.

WHMIS: This product has a WHMIS classification of D2A, D2B. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by those regulations.

Ingredient Disclosure List: CAS# 112-36-7 is not listed on Canada's Ingredient Disclosure list.

### DSCL (EEC):

Hazard Symbols: Xn

Risk Phrases: R36 – Causes eye irritation.

Safety Phrases: S25 – Avoid contact with skin and eyes.

WGK (Water Danger/protection): CAS# 112-36-7: Not available

National Fire Protective Association: Health - 1, Flammability - 2, 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.

## 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.