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PHARMCO-AAPER

AND COMMERCIAL ALCOHOLS

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

MATERIAL SAFETY DATA SHEETS

Manufacturer: PHARMCO-AAPER
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Diethylene Glycol Dimethyl Ether

1. CHEMICAL PRODUCT IDENTIFICATION

Product Name: Diethylene Glycol Dimethyl Ether
Synonyms: 2-Methoxyethyl Ether; Ethane,1-1'-oxybis[2-methoxy-; Diglyme; Bis(2-methoxyethyl)ether; 1,2-DIMETHOXYETHANE; Dimethyldiglycol
Molecular Formula: $(\text{CH}_3\text{OCH}_2\text{CH}_2)_2\text{O}$
Molecular Weight: 134.18

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
Diethylene Glycol Dimethyl Ether	111-96-6	99%	Yes

3. HAZARDS IDENTIFICATION

WARNING! COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT KIDNEYS AND CENTRAL NERVOUS SYSTEM.

NFPA Hazard Ratings: Health - 1, Flammability - 2, Reactivity - 1

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

Inhalation: At room temperature, the substance has such a low vapor pressure that inhalation of the vapor is unlikely. However, the substance does irritate the respiratory tract. Coughing, shortness of breath are the symptoms.

Ingestion: Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

Skin Contact: May cause irritation. May be absorbed through the skin with symptoms paralleling those from ingestion exposure.

Eye Contact: Causes irritation, redness, and pain.

Chronic Exposure: Chronic exposure may cause central nervous system effects. The substance tends to irritate the eyes, the skin and upper respiratory tract. Kidney injury may occur.

Aggravation of Pre-existing Conditions: No information found.

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.

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

5. FIRE FIGHTING MEASURES

Fire:

Flash point: 70C (158F) OC

Autoignition temperature: 205C (401F)

Flammable limits in air % by volume: lel: 17.4; uel: 1.5

Explosion: Above the flash point, explosive vapor-air mixtures may be formed.

Fire Extinguishing Media: Powder, alcohol foam, water spray or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. HANDLING AND STORAGE

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Limits:

None established.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless liquid.

Odor: Slight aromatic odor.

Solubility: Miscible in water.

Specific Gravity: 0.94 @ 20C (68F)

pH: No information found.

% Volatiles by volume @ 21C (70F): 100

Boiling Point: 162C (324F)

Melting Point: -64C (-83F)

Vapor Density (Air=1): 5.6

Vapor Pressure (mm Hg): 2.96 @ 25C (77F)

Evaporation Rate (BuAc=1): No information found.

10. STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition. Peroxides and possibly other toxic oxides.

Hazardous Polymerization: May form explosive peroxides on prolonged storage.

Incompatibilities: Oxidizing materials, acids and bases.

Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

11. TOXICOLOGICAL INFORMATION

No LD50/LC50 information found relating to normal routes of occupational exposure. Investigated as a mutagen, reproductive effector.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Diethylene Glycol Dimethyl Ether (111-96-6)	No	No	None

12. ECOLOGICAL INFORMATION

Environmental Fate: When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material is expected to quickly evaporate. When released into the soil, this material is expected to leach into groundwater. This material has an experimentally-determined bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is not expected to be subject to wet deposition. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity: No information found.

13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: FLAMMABLE LIQUIDS, N.O.S. (Diethylene Glycol Dimethyl Ether)

Hazard Class: 3

UN/NA: UN1993

Packing Group: III

International (Water, I.M.O.)

Proper Shipping Name: FLAMMABLE LIQUIDS, N.O.S. (Diethylene Glycol Dimethyl Ether)

Hazard Class: 3.3

UN/NA: UN1993

Packing Group: III

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

Proper Shipping Name: FLAMMABLE LIQUIDS, N.O.S. (Diethylene Glycol Dimethyl Ether)

Hazard Class: 3.3

UN/NA: UN1993

Packing Group: III

15. REGULATORY INFORMATION

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia	
Diethylene Glycol Dimethyl Ether (111-96-6)		Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient		--Canada--			
Diethylene Glycol Dimethyl Ether (111-96-6)	Korea	DSL	NDSL	Phil.	
		Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
Diethylene Glycol Dimethyl Ether (111-96-6)	RQ	TPQ	List	Chemical Catg.
	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	-RCRA-		-TSCA-	
Diethylene Glycol Dimethyl Ether (111-96-6)	CERCLA		261.33	8(d)
	No	No	Yes	

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
Reactivity: No (Pure/Liquid)

Australian Hazchem Code: No information found.

Poison Schedule: No information found.

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**

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.