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**PHARMCO-AAPER**

AND COMMERCIAL ALCOHOLS

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

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# MATERIAL SAFETY DATA SHEETS

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Manufacturer: PHARMCO-AAPER  
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## 1,2-Dibromoethane

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### 1. CHEMICAL PRODUCT IDENTIFICATION

Product Name: 1,2-Dibromoethane  
Synonym(s): Ethylene Dibromide; Aethylenbromid; Glycol bromide  
Molecular Formula:  $\text{BrCH}_2\text{CH}_2\text{Br}$   
Molecular Weight: 187.87

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
1,2-Dibromoethane	106-93-4	99 - 100%	Yes

### 3. HAZARDS IDENTIFICATION

WARNING! HARMFUL IF ABSORBED THROUGH THE SKIN. MAY BE HARMFUL IF SWALLOWED. THIS SUBSTANCE HAS CAUSED ADVERSE REPRODUCTIVE AND FETAL EFFECTS IN ANIMALS. MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. MAY CAUSE CARDIAC DISTURBANCES. MAY CAUSE LUNG DAMAGE. MAY CAUSE LIVER AND KIDNEY DAMAGE. CAUSES DIGESTIVE AND RESPIRATORY TRACT IRRITATION. MAY CAUSE SEVERE EYE AND SKIN IRRITATION WITH POSSIBLE BURNS. MAY CAUSE CANCER IN HUMANS.

Risk of cancer depends on duration and level of exposure.

NFPA Hazard Ratings: Health - 3, Flammability - 0, 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: Causes severe eye irritation. May result in corneal injury.

Skin: Causes severe skin irritation. Harmful if absorbed through the skin. May cause skin burns.

Ingestion: Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause effects similar to those for inhalation exposure.

Inhalation: Effects may be delayed. Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause liver and kidney damage. May cause heart disturbances, possibly leading to cardiac arrest and death. May cause lung damage.

Chronic: May cause fetal effects. May cause cancer in humans.

Target Organs: Kidneys, heart, central nervous system, liver, respiratory system.

#### 4. FIRST-AID MEASURES

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

Skin: Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately. Induce vomiting by giving one teaspoon of Syrup of Ipecac.

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

Notes to Physician: Treat symptomatically.

Antidote: No specific antidote exists.

#### 5. FIRE FIGHTING MEASURES

Fire:

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, Lower: Not available. Upper: Not available.

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Substance is noncombustible.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

## 6. ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Wear a self contained breathing apparatus and appropriate Personal protection. (See Exposure Controls, Personal Protection section). Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Carefully scoop up and place into appropriate disposal container.

## 7. HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Storage under a nitrogen blanket has been recommended.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

ACGIH: skin - potential for cutaneous absorption

NIOSH: 0.045 ppm TWA; NIOSH Potential Occupational Carcinogen - see Appendix A Potential NIOSH carcinogen.

OSHA - Final PELs: 20 ppm TWA; C 30 ppm; C 30 ppm

OSHA Vacated PELs: ETHYLENE DIBROMIDE (1,2-DIBROMOETHANE): 20 ppm TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: clear colorless to faint yellow

Odor: Sweet, chloroform-like.

pH: Not available.  
Vapor Pressure: 11 mm Hg @ 20C  
Vapor Density: 6.5 (air=1)  
Evaporation Rate:  
Viscosity: Not available.  
Boiling Point: 268 deg F  
Freezing/Melting Point: 48.4 deg F  
Decomposition Temperature: Not available.  
Solubility: 4 g/l (20 C) in water.  
Specific Gravity/Density: 2.17 (water=1)

## 10. STABILITY AND REACTIVITY

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Incompatible materials, exposure to light and/or heat in the presence of water (including moist air).

Incompatibilities with Other Materials: Metals (aluminum, magnesium, zinc, calcium, sodium, and potassium), strong alkalis, strong oxidizing agents, liquid ammonia, light.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen bromide.

Hazardous Polymerization: Has not been reported.

## 11. TOXICOLOGICAL INFORMATION

RTECS#: CAS# 106-93-4; KH9275000

LD50/LC50: CAS# 106-93-4:

Inhalation, rat: LC50 = 14300 mg/m<sup>3</sup>/30M;

Oral, rabbit: LD50 = 55 mg/kg;

Oral, rat: LD50 = 108 mg/kg;

Skin, rabbit: LD50 = 300 mg/kg;

Skin, rat: LD50 = 300 mg/kg;

Carcinogenicity: CAS# 106-93-4: ACGIH: A3 - Animal Carcinogen California: carcinogen - initial date 7/1/87

NIOSH: occupational carcinogen

NTP: Suspect carcinogen

OSHA: Possible Select carcinogen

IARC: Group 2A carcinogen

Epidemiology: No data available.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Neurotoxicity: No data available.

Mutagenicity: No data available.

Other Studies: Please refer to RTECS KH9275000 for additional data.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity: Bluegill (fresh water) 18mg/L/48H  
Environmental Fate: No information reported.  
Physical/Chemical: No information available.  
Other: None.

### 13. DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.  
RCRA D-Series Maximum Concentration of Contaminants: None listed.  
RCRA D-Series Chronic Toxicity Reference Levels: None listed.  
RCRA F-Series: None listed.  
RCRA P-Series: None listed.  
RCRA U-Series: CAS# 106-93-4: waste number U067.

### 14. TRANSPORT INFORMATION

Domestic (Land, D.O.T.)  
Proper Shipping Name: Ethylene Dibromide  
Hazard Class: 6.1  
UN/NA: UN1605  
Packing Group: I

International (Water, I.M.O.)  
Proper Shipping Name: Ethylene Dibromide  
Hazard Class: 6.1  
UN/NA: UN1605  
Packing Group: I

International (Air, I.C.A.O.)  
Proper Shipping Name: Ethylene Dibromide  
Hazard Class: 6.1  
UN/NA: UN1605  
Packing Group: I

### 15. REGULATORY INFORMATION

#### US FEDERAL

TSCA: CAS# 106-93-4 is listed on the TSCA inventory.  
Health & Safety Reporting List: None of the chemicals are on the Health & Safety Reporting List.  
Chemical Test Rules: None of the chemicals in this product are under a Chemical Test Rule.  
Section 12b: None of the chemicals are listed under TSCA Section 12b.  
TSCA Significant New Use Rule: None of the chemicals in this material have a SNUR under TSCA.

#### SARA

Section 302 (RQ): CAS# 106-93-4: final RQ = 1 pound (0.454 kg)  
Section 302 (TPQ): None of the chemicals in this product have a TPQ.  
SARA Codes: CAS # 106-93-4: acute, chronic.  
Section 313: This material contains ETHYLENE DIBROMIDE (1,2-DIBROM (CAS# 106-93-4, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act: CAS# 106-93-4 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act: CAS# 106-93-4 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

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:

Chemical Name	CAS Number	RQ
1,2-Dibromoethane	106-93-4	1 lb

#### STATE

CAS# 106-93-4 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Ethylene Dibromide

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Ethylene Dibromide

#### Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases: R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R 36/37/38 Irritating to eyes, respiratory system and skin. R 45 May cause cancer.

Safety Phrases: S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S 53 Avoid exposure - obtain special instructions before use. S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)

CAS# 106-93-4: 3

Canada

CAS# 106-93-4 is listed on Canada's DSL/NDSL List.

This product does not have a WHMIS classification.

CAS# 106-93-4 is not listed on Canada's Ingredient Disclosure List.

#### Exposure Limits

CAS# 106-93-4: OEL-ARAB Republic of Egypt:TWA 0.13 ppm (1 mg/m<sup>3</sup>) OEL-AUSTRALIA;Skin;Carcinogen OEL-BELGIUM;Skin;Carcinogen OEL-CZECHOSLOVAKIA:TWA 10 mg/m<sup>3</sup>;STEL 20 mg/m<sup>3</sup> OEL DENMARK:TWA 0.1 ppm (1 mg/m<sup>3</sup>);Skin;Carcinogen OEL-FINLAND:TWA 20 ppm (145 mg/m<sup>3</sup>);STEL 30 ppm;Skin;CAR OEL-FRANCE;Carcinogen OEL-GERMANY;Skin;Carcinogen OEL-HUNGARY:STE L 0.8 mg/m<sup>3</sup>;Skin;Carcinogen OEL-THE NETHERLANDS:TWA 20 ppm (155 mg/m<sup>3</sup>);Skin OEL-THE PHILIPPINES:TWA 25 ppm (190 mg/m<sup>3</sup>);Skin OEL-POLAND:TWA 100 mg/m<sup>3</sup> OEL-SWEDEN;Carcinogen OEL-SWITZERLAND:TWA 0.1 ppm (0.8 mg/m<sup>3</sup>);Skin;Carcinogen OEL-THAILAND:TWA 20 ppm;STEL 30 ppm OEL-TURKEY:TWA 25 ppm (190 mg/m<sup>3</sup>);Skin OEL-UNITED KINGDOM:TWA 1 ppm (8 mg/m<sup>3</sup>);Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

## 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.