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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
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p-Xylene

1. CHEMICAL PRODUCT IDENTIFICATION

Product Name: p-Xylene
Synonyms: 1,4-Dimethylbenzene
Molecular Weight: 106.17
Molecular Formula: C₆H₄(CH₃)₂

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
p-Xylene	106-42-3	99%	Yes

3. HAZARDS IDENTIFICATION

DANGER! FLAMMABLE LIQUID. HARMFUL IF INHALED. THIS SUBSTANCE HAS CAUSED ADVERSE REPRODUCTIVE AND FETAL EFFECTS IN ANIMALS. MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. ASPIRATION HAZARD. MAY BE ABSORBED THROUGH THE SKIN. POISON! MAY CAUSE LIVER AND KIDNEY DAMAGE. CAUSES EYE AND SKIN IRRITATION. CAUSES DIGESTIVE AND RESPIRATORY TRACT IRRITATION. HARMFUL OR FATAL IF SWALLOWED.

NFPA Hazard Ratings: Health - 2, Flammability - 3, 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. Prolonged or repeated exposure may cause conjunctivitis.

Skin: May cause skin irritation. May be absorbed through the skin in harmful amounts. Exposure may cause irritation characterized by redness, dryness, and inflammation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Causes blistering of the skin.

Ingestion: Harmful if swallowed. Aspiration hazard. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: Harmful if inhaled. Causes respiratory tract irritation. Prolonged exposure may result in dizziness and general weakness. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause narcotic effects. Exposure produces central nervous system depression. Central nervous system effects may include confusion, ataxia, vertigo, tinnitus, weakness, disorientation, lethargy, drowsiness, and finally coma. Exposure may give rise to flushing of face, skin rash, an increase in heart and respiration rates, headaches, giddiness, nausea, and vomiting.

Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause permanent eye damage.

Target Organs: Kidneys, central nervous system, liver.

4. FIRST-AID MEASURES

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

Ingestion: Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

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

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:

Autoignition Temperature: 525 deg C (977.00 deg F)

Flash Point: 27 deg C (80.60 deg F)

Explosion Limits, Lower: 1.00 vol % Upper: 7.60 vol %

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-

contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water.

Extinguishing Media: Use water spray to cool fire-exposed containers. In case of fire use water spray, dry chemical, carbon dioxide, or chemical foam.

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! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

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. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

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: 100 ppm ; 434 mg/m³; 150 ppm STEL; 651 mg/m³ STEL

NIOSH: 100 ppm TWA; 435 mg/m³ TWA 900 ppm IDLH

OSHA - Final PELs: none listed

OSHA Vacated PELs: o-Xylene: No OSHA Vacated PELs are listed for this chemical.

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
Odor: Not available.
pH: Not available.
Vapor Pressure: 10 mm Hg @27.3
Vapor Density: 3.66
Evaporation Rate:
Viscosity: Not available.
Boiling Point: 138760.00 deg C
Freezing/Melting Point: 13 deg C
Decomposition Temperature: Not available.
Solubility: 0.002 g/l
Specific Gravity/Density: .8660g/cm³

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: High temperatures, incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported

11. TOXICOLOGICAL INFORMATION

RTECS#:
CAS# 106-42-3: ZE2625000
LD50/LC50:
CAS# 106-42-3:
Inhalation, rat: LC50 =4550 ppm/4H;
Oral, rat: LD50 = 5 gm/kg;
Carcinogenicity:
CAS# 106-42-3:
ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 3 carcinogen (listed as XYLENES (O-, M-, P- ISOMERS)).
Epidemiology: No data available.
Teratogenicity: An experimental teratogen.
Reproductive Effects: Experimental reproductive effects have been observed.
Neurotoxicity: No data available.
Mutagenicity: No data available.
Other Studies: No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Fish: LC50 (24hr) goldfish 18mg/l (Shell ind.chem. gids 1975); LC50 (96hr) fathead minnow, bluegill sunfish, goldfish, guppy 24-37mg/l (Pickering,Q.H. J.Water Pollut.Control Fed.1966); LC50 (7 day) guppy 35 mg/l (Koeremann, W.H. Quantitative Struct.-Act. Relationships for kinetics and toxicity of aquatic Poll. and their mixtures to Fish 1979); Invertebrate toxicity :EC50 (30min)Photobact. phosphoreum 5.7ppm Microtox test (Kaiser,K.L.E. Water Pollut.Res.J.1991); EC50(48hr)Daphnia Magna 3.2mg/l (Vighti,M. Chemosphere 1987); LC50 (96hr) Grangon franciscorum 2mg/l

Environmental Fate: Degradation studies: Readily biodegraded in shallow groundwater in a sand aquifer. As the

available oxygen was consumed, the rate of degradation decreased (Barker,J.F. Groundwater Monit.Rev. 1987)
Abiotic removal: Moderately reactive under photochemical smog conditions; reported loss rates of 4-25%/hr, which are typical of the reaction with hydroxyl radicals (Howard,P.H. Handbook of environmental fate and exposure data for organic chemicals 1991; Doyle,G.J. Environ.Sci.technol.1978)

Physical/Chemical: Not available.

Other: Not available.

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: None listed.

14. TRANSPORT INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: Xylenes

Hazard Class: 3

UN/NA: UN1307

Packing Group: III

International (Water, I.M.O.)

Proper Shipping Name: Xylenes

Hazard Class: 3.3

UN/NA: UN1307

Packing Group: III

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

Proper Shipping Name: Xylenes

Hazard Class: 3

UN/NA: UN1307

Packing Group: III

15. REGULATORY INFORMATION

US FEDERAL

TSCA: CAS# 106-42-3 is listed on the TSCA inventory.

Health & Safety Reporting List: CAS# 106-42-3: Effective Date: January 26, 1994; Sunset Date: January 26, 2004

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# 106-42-3: final RQ = 100 pounds (45.4 kg) (Listed under 'Xylene (mixed)')

Section 302 (TPQ): None of the chemicals in this product have a TPQ.

SARA Codes: CAS # 106-42-3: acute, chronic, flammable.

Section 313: This material contains p-Xylene, 99% (CAS# 106-42-3, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act: CAS# 106-42-3 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# 106-42-3 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.

STATE

CAS# 106-42-3 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases: R 10 Flammable. R 20/21 Harmful by inhalation and in contact with skin. R 38 Irritating to skin.

Safety Phrases: S 25 Avoid contact with eyes.

WGK (Water Danger/Protection)

CAS# 106-42-3: 2

Canada

CAS# 106-42-3 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of B2, D2A.

CAS# 106-42-3 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 106-42-3 (listed as xylenes (o-, m-, p- isomers)): OEL-ARAB Republic of Egypt:TWA 0.5 ppm (0.9 mg/m³) OEL-AUSTRALIA:TWA 80 ppm (330 mg/m³);STEL 150 ppm (655 mg/m³) OEL-BELGIUM:TWA 100 ppm (434 mg/m³);STEL 150 ppm (651 mg/m³) OEL-CZECHOSLOVAKIA:TWA 200 mg/m³;STEL 1000 mg/m³ OEL-DENMARK:TWA 50 ppm (217 mg/m³);Skin OEL-FINLAND:TWA 100 ppm (435 mg/m³);STEL 150 ppm;Skin OEL-FRANCE:TWA 100 ppm (435 mg/m³);STEL 150 ppm (650 mg/m³) OEL-GERMANY:TWA 100 ppm (440 mg/m³) OEL-HUNGARY:TWA 100 mg/m³;STEL 300 mg/m³ OEL-JAPAN:TWA 100 ppm (430 mg/m³) OEL-THE NETHERLANDS:TWA 100 ppm (435 mg/m³);Skin OEL-THE PHILIPPINES:TWA 0.1 mg/m³ OEL-POLAND:TWA 100 mg/m³ OEL-SWEDEN:TWA 50 ppm (200 mg/m³);STEL 100 ppm (450 mg/m³);Skin OEL-SWITZERLAND:TWA 100 ppm (436 mg/m³);STEL 200 ppm (870 mg/m³) OEL-THAILAND:TWA 100 ppm (435 mg/m³) OEL-TURKEY:TWA 100 ppm (435 mg/m³) OEL-UNITED KINGDOM:TWA 100 ppm (435 mg/m³);STEL 150 ppm;Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI 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.