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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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ISOHEXANE

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name: Isohexanes

Synonyms: Hexane Isomers; methyl pentane; 1,1-dimethylbutane; 2-methylpentane

Intended Use: Solvent

Chemical Family: Aliphatic hydrocarbon

Health Hazards/Precautionary Measures: Causes skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Extremely flammable liquid and vapor. Vapor can cause flash fire.

Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Colorless

Physical form: Liquid

Odor: Mild

NFPA Hazard Class: HMIS Hazard Class

Health: 2 (Moderate) Health: 2\*(Moderate)

Flammability: 3 (High) Flammability: 3 (High)

Reactivity: 0 (Least) Physical Hazard: 0 (Least)

\*Indicates possible chronic health effects.

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

HAZARDOUS COMPONENTS % WEIGHT EXPOSURE GUIDELINE

Limits Agency Type

Hexane Isomers 100 500 ppm ACGIH TWA

CAS# Various 1000 ppm ACGIH STEL

All components are listed on the TSCA inventory.

**3. HAZARDS IDENTIFICATION**

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Skin irritant. Contact may cause redness, itching, burning, and skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation).

Contact may result in skin absorption but symptoms of toxicity are not anticipated by this route alone under normal conditions of use.

Inhalation (Breathing): Low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION

HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: No data available.

Target Organs: Inadequate evidence available for this material. See

Section 11 for target–organ toxicity information of individual components, if any.

Developmental: No data available for this material.

Other Comments: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as Solvent or Painters' Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

Pre–Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma–like) disorders.

Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre–existing heart disorders may be more susceptible to this effect (see Section 4 – Note to Physicians).

#### **4. FIRST AID MEASURES**

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water.

If irritation or redness develops, seek medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place

on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury.

#### **5. FIRE FIGHTING MEASURES**

Flammable Properties: Flash Point: –20 deg F/–29 deg C (TCC, ASTM D56)

OSHA Flammability Class: Flammable liquid

LEL%: 1.0 / UEL%: 7.0

Autoignition Temperature: No Data

Unusual Fire & Explosion Hazards: This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where

they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers.

Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended.

Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn.

In addition, wear other appropriate protective

equipment as conditions warrant (see Section 8). Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

## **6. ACCIDENTAL RELEASE MEASURES**

Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk.

Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

## **7. HANDLING AND STORAGE**

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge.

The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8). Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks, which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide).

Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and

ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage.

Examples of approved materials are nitrile, polyvinyl alcohol, or Viton

(see glove manufacturer literature for information on permeability).

Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: The use of a face shield and chemical goggles to safeguard against potential eye contact, irritation, or injury is recommended.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20 deg C (68 deg F) and 760 mm Hg (1 atm).

Appearance: Colorless

Physical State: Liquid

Odor: Mild

pH: Not applicable

Vapor Pressure (mm Hg): 7.16 psi @100 deg F (38 deg C)

Vapor Density (air=1): Approximately 3

Boiling Point/Range: 131–142 deg F / 55–61 deg C

Freezing/Melting Point: Not established

Solubility in Water: Negligible

Specific Gravity: 0.662 @60/60 deg F (15.6/15/6 deg C)

Percent Volatile: 100 vol.%

Evaporation Rate (nBuAc=1): Approximately 8.1

Viscosity: Approximately 0.4 cSt @100 deg F (38 deg C)

Bulk Density: 5.52 lbs/gal

Flash Point: –20 deg F / –29 deg C (TCC, ASTM D56)

Flammable/Explosive Limits (%): LEL: 1.0 / UEL: 7.0

## 10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong Oxidizing agents such as liquid chlorine, concentrated oxygen, sodium or calcium hypochlorite.

Hazardous Decomposition Products: Combustion can yield carbon dioxide and carbon monoxide.

Hazardous Polymerization: Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Hexane Isomers(CAS# Various)

Target Organ(s): A mixture of hexane isomers, free of n-hexane, did not produce neurotoxic effects in rats exposed to 500 ppm for six months.

Acute Data:

Hexane Isomers: No data available

## 12. ECOLOGICAL INFORMATION

Not evaluated at this time

## 13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001). If the spilled or released material impacts soil, water, or other media, characteristic testing of the contaminated materials may be required prior to their disposal. Further, this material, once it becomes

a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

## 14. TRANSPORT INFORMATION

DOT Shipping Description: Hexanes,3,UN1208,11, RQ\*

Non-Bulk Package Marking: Hexanes, UN1208

Non-Bulk Package Label: Flammable

Bulk Package Placard/Marking: Flammable/1208

Hazardous Substance/RQ \* See Section 15 for RQ's

Packaging References 49 CFR 173.150, 173.202, 173.242

Emergency Response Guide: 128

Note: Enter the letters "RQ" as shown and the name or names of the hazardous substance or substances in parentheses if one or more of the hazardous substance is present in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) shown for the hazardous substance.

## 15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: Yes

Chronic Health: Yes

Fire Hazard: Yes

Pressure Hazard: No

Reactive Hazard: No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

--None --

**Carcinogen Identification:**

This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

**EPA (CERCLA) Reportable Quantity:**

5000 lb equal to 5000 lb, (906 gal), of this material.

Canada – Domestic Substances List: Listed

**WHMIS Class:**

B2–Flammable Liquid

D2B–Materials causing other toxic effects – Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):** No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

**16. OTHER INFORMATION**

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.