SAFETY DATA SHEET

Hexanes

This SDS is valid for all grades of mixed isomers of Hexane with a Hexane concentration lower than 85%

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: Hexanes,Normal Hexane; Hexyl Hydride; n-Hexane; 3-Methyl Pentane
Other means of identification: CAS No. 110-54-3
EINECS No. 203-777-6
Recommended use of the chemical and restrictions on use:

Supplier Details:

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213

Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Emergency Contact: **CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)**

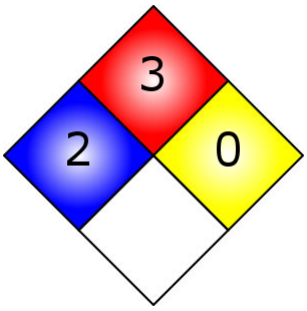
2. HAZARDS IDENTIFICATION

Emergency Overview:
WARNING! HIGHLY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE CENTRAL AND PERIPHERAL NERVOUS SYSTEMS.

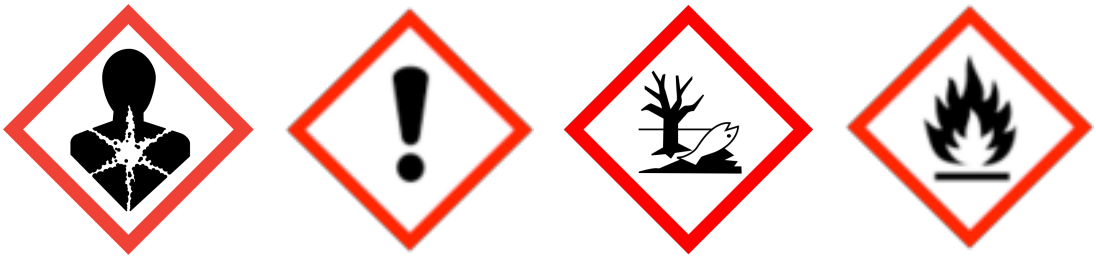
OSHA Hazards:
Flammable liquid, Irritant, Target organ effect, Teratogen

Target Organs:
Kidney, Peripheral nervous system

NFPA



GHS label elements, including precautionary statements



Signal Word:
DANGER!

Hazard statement(s)

H225	Highly flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P210	Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P102	Keep out of reach of children.
P103	Read label before use.
P243	Take precautionary measures against static discharge.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye and face protection.

GHS Classification(s)

Aspiration hazard (Category 1)
Chronic aquatic toxicity (Category 2)
Flammable Liquids (Category 2)
Reproductive toxicity (Category 2)
Skin irritation (Category 2)
Specific target organ toxicity - repeated exposure (Category 2)
Specific target organ toxicity - single exposure (Category 3)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Skin	May be harmful if absorbed through skin. Causes skin irritation.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity: Hexane
Common name / Synonym: Hexanes,Normal Hexane; Hexyl Hydride; n-Hexane; 3-Methyl Pentane
CAS number: 110-54-3
EINECS number: 203-777-6
ICSC number: 0279
RTECS #: MN9275000
UN #: UN1208
EC #: 601-037-00-0

% Weight	Material	CAS
45-65	n-Hexane	110-54-3

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Wash skin with soap and copious amounts of water. Seek medical attention.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration

as needed.

Eyes

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

---

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides expected to be the primary hazardous combustion product.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Flammable Properties
Classification
OSHA/NFPA Class IB Flammable Liquid.
Flash point
-22 °C (-7 °F) - closed cup
Autoignition temperature
225 °C (437 °F)

---

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

Contain spill, then collect with an electrically protected vacuum cleaner or by wet-brushing and put the material into a convenient waste disposal container. Keep container closed.

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage, including any incompatibilites:

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
n-Hexane	US (OSHA)	TWA	500 ppm, 1800 mg/m3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:

Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance *(physical state, color, etc.)*	Liquid. Colorless.
Freezing point	-95 °C (-139 °F)
Initial boiling point and boiling range	69 °C (156 °F)
Flash point	-22 °C (-7 °F) - closed cup
Upper / Lower flammability or explosive limits	1.2% (V) / 7.7% (V)
Vapor pressure	176.0 hPa (132.0 mmHg) at 20 °C (68 °F)
Vapor Density	3.0
Relative Density	0.659 g/mL at 25 °C (77 °F)
Solubility(ies)	not soluble
Auto-ignition temperature	225 °C (437 °F)
Formula (N-HEXANE)	C6H14
Molecular Weight (N-HEXANE)	86.18 g/mol

10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	Vapors may form explosive mixture with air.
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames, and sparks. Extreme temperatures and direct sunlight.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

- n-Hexane 110-54-3

Product Summary:
Laboratory tests have shown reproductive effects in animals. Product is damaging to human fertility. No data available for the teratogenic or mutagenic effects of the product.

Acute Toxicity:

LC50 (Inhalation)	Rat	48,000 ppm	4 hours
LD50 (Oral)	Rat	25,000 mg/kg	

Irritation:
Eyes

Rabbit - mild eye irritation

Skin
No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Hazards

Organ	Description
Eyes	Irritating to the eyes.
Ingestion	May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.
Inhalation	May be harmful if inhaled. Irritating to the respiratory tract. Vapors may cause drowsiness and dizziness.
Skin	May be harmful if absorbed through skin. Irritating to the skin.

12. ECOLOGICAL INFORMATION

- n-Hexane 110-54-3

Ecotoxicity (aquatic and terrestrial, where available):
Acute Fish Toxicity (N-HEXANE)
LC50 / 96 hours Fathead Minnow - 2.5 mg/L

Toxicity to Daphnia (N-HEXANE)
EC50 / 48 hours Water flea - 3,878 mg/L

Persistence and degradability:
No data available

Bioaccumulative potential:
No data available

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. Refer to applicable regional, state and federal codes.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	UN1208
UN proper shipping name	Hexanes
Transport hazard class(es)	3
Packing group *(if applicable)*	II

Reportable Quantity
5,000 lbs
IMDG
UN-Number: UN1208 Class: 3 Packing Group: II
EMS-No: F-E, S-D
Proper shipping name: HEXANES
Marine pollutant: Yes
IATA
UN-Number: UN1208 Class: 3 Packing Group: II
Proper shipping name: Hexanes

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards
Flammable liquid, Irritant, Target organ effect, Teratogen

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL

New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313: N-HEXANE CAS-No. 110-54-3 Revision Date 2007-07-01

SARA 311/312 Hazards
Acute Health Hazard
Chronic Health Hazard
Fire Hazard

CERCLA
Hexane CAS-No. 110-54-3, RQ: 5,000 lbs

Massachusetts Right To Know Components
n-Hexane CAS-No. 110-54-3 Revision Date 2007-07-01

Pennsylvania Right To Know Components
n-Hexane CAS-No. 110-54-3 Revision Date 2007-07-01

New Jersey Right To Know Components
n-Hexane CAS-No. 110-54-3 Revision Date 2007-07-01

California Prop 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

Disclaimer
PHARMCO-AAPER believes that the information on this SDS was obtained from reliable sources. However, the

information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, PHARMCO-AAPER does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable. Information is correct to the best of our knowledge at the date of the SDS publication.