

MATERIAL SAFETY DATA SHEET

Hexane, n-

This MSDS is valid for all grades and catalog #'s

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: n-Hexane; Hexanes, Normal Hexane; Hexyl Hydride; 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:

General reagent 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:

EXTREMELY 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:

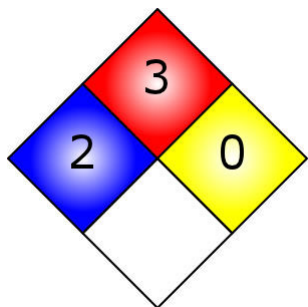
Flammable liquid, Irritant, Target organ effect, Teratogen

Target Organs:

Kidney, Peripheral nervous system, Testes

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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)

P261	Avoid breathing dust/fumes/gas/mist/vapors.
P273	Avoid release to the environment.
P501	Dispose of contents and container to an approved waste disposal plant.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P202	Do not handle until all safety precautions have been read and understood.
P331	Do NOT induce vomiting.
P240	Ground/bond container and receiving equipment.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or a doctor/ physician.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P210	Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P362	Take off contaminated clothing and wash before reuse.
P243	Take precautionary measures against static discharge.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P242	Use only non-sparking tools.
P271	Use only outdoors or in a well-ventilated area.
P264	Wash hands thoroughly after handling.
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	Can be irritating to the eyes.
Ingestion	Can be harmful if ingested. Aspiration hazard if swallowed - can enter lungs and cause damage.
Inhalation	May cause irritation to the respiratory tract if inhaled. Vapors can cause drowsiness and dizziness.
Skin	May cause skin irritation if product is absorbed through the skin.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity:	Hexane, n-
Common name / Synonym:	n-Hexane; Hexanes, Normal Hexane; Hexyl Hydride; 3-Methyl Pentane
CAS number:	110-54-3

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EINECS number: 203-777-6
ICSC number: 0279
RTECS #: MN9275000
UN #: 1208
EC #: 601-037-00-0

% Weight	Material	CAS
60-100	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

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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 incompatibilities:

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/m ³	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.

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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.
Odor	Specific data not available
Odor threshold	Specific data not available
pH	Specific data not available
Freezing point	-95 °C (-139 °F)
Initial boiling point and boiling range	69 °C (156 °F)
Flash point	-22 °C (-7 °F) - closed cup
Evaporation rate	Specific data not available
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	7.7% (V) / 1.2% (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
Partition coefficient n-octanol/water(ies)	log Pow: 4
Auto-ignition temperature	225 °C (437 °F)
Decomposition temperature	Specific data not available

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Formula (N-HEXANE)	C6H14
Molecular Weight (N-HEXANE)	86.18 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
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	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

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

Respiratory or Skin Sensitization

No data available

Skin

No data available

Aspiration Hazard

May be fatal if ingested or inhaled.

Reproductive toxicity

Presumed human reproductive toxicant

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

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May cause damage to organs through prolonged or repeated exposure. Route: Inhalation. Organs: Nervous System

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause respiratory irritation - Respiratory tract

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.

Carcinogenicity - Rat. Route: Inhalation. Development of testicular tumors.

Other Hazards

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

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No data available

Other adverse effects:

Product can be considered an environmental hazard if handled improperly or through improper disposal.

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	1208
UN proper shipping name	Hexanes
Transport hazard class(es)	3
Packing group (if applicable)	II

Reportable Quantity

5,000 lbs

IMDG

UN-Number: 1208 Class: 3 Packing Group: II

EMS-No: F-E, S-D

Proper shipping name: HEXANES

Marine pollutant: No

IATA

UN-Number: 1208 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

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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:

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INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

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