

### SECTION 1: Product and company identification

#### 1.1. Product identifier

Product form : Substance  
 Name : Hexane  
 CAS No : 110-54-3  
 Formula : C6H14

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 10 Riverview Drive  
 Danbury, CT 06810-6268 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week  
 — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887  
 (collect calls accepted, Contract 17729)

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Flam. Liq. 2        H225  
 Skin Irrit. 2      H315  
 STOT SE 3        H336  
 STOT RE 2        H373  
 Asp. Tox. 1        H304  
 Aquatic Chronic 2 H411

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02                      GHS07                      GHS08                      GHS09

Signal word (GHS-US) :

DANGER

Hazard statements (GHS-US) :

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  
 H373 - MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE  
 H411 - TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from Heat/Open flames/Sparks/Hot surfaces. - No smoking  
 P233 - Keep container tightly closed  
 P240 - Ground/Bond container and receiving equipment  
 P241 - Use explosion-proof electrical/ventilating/lighting/... equipment  
 P242 - Use only non-sparking tools

# Hexane

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- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe gas/vapors
- P261 - Avoid breathing gas, vapors
- P264 - Wash exposed skin thoroughly after handling
- P271 - Use and store only outdoors or in a well-ventilated area
- P273 - Avoid release to the environment
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P391 - Collect spillage
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed
- P235 - Keep cool
- P405 - Store locked up
- P501 - Dispose of contents/container in accordance with container Supplier/owner instructions

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Name	Product identifier	%
Hexane (Main constituent)	(CAS No) 110-54-3	100

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.
- First-aid measures after skin contact : In case of contact, immediately flush affected areas with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Discard contaminated shoes.
- First-aid measures after eye contact : Immediately call a poison center or doctor/physician. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.
- First-aid measures after ingestion : Immediately call a poison center or doctor/physician.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : CAUSES DAMAGE TO ORGANS.
- Symptoms/injuries after inhalation : MAY CAUSE DROWSINESS OR DIZZINESS.
- Symptoms/injuries after skin contact : CAUSES SKIN IRRITATION.
- Symptoms/injuries after ingestion : MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : HIGHLY FLAMMABLE LIQUID AND VAPOR.
- Explosion hazard : May form flammable/explosive vapor-air mixture.

### 5.3. Advice for firefighters

- Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Protection during firefighting : **DANGER: FLAMMABLE LIQUID AND VAPOR.** Evacuate all personnel from danger area. Use self-contained breathing apparatus. Immediately cool surrounding containers with water spray from maximum distance, taking care not to extinguish flames. Avoid spreading burning liquid with water. Remove ignition sources if safe to do so. If flames are accidentally extinguished, explosive reignition may occur. Reduce vapors with water spray or fog. Stop flow of liquid if safe to do so, while continuing cooling water spray. Remove all containers from area of fire if safe to do so. Allow fire to burn out. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1919 Subpart L - Fire Protection.
- Other information : Vapor forms explosive mixtures with air and oxidizing agents. If leaking gas catches fire, do not extinguish flames. Flammable and toxic vapors may spread from leak and could explode if reignited by sparks or flames. Vapors are heavier than air and may collect in low spots. Explosive atmospheres may linger. Before entering area, especially confined areas, check with an appropriate device.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : **DANGER: Flammable, liquefied gas. FORMS EXPLOSIVE MIXTURES WITH AIR.** Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shut off flow if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable vapors may spread from leak and could explode if reignited by sparks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

- Protective equipment : Avoid breathing gas, vapors.

### 6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

- For containment : On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

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**Precautions for safe handling** : May irritate skin, eyes, and respiratory tract. Use only with adequate ventilation or respiratory protection. Do not get liquid or vapor in eyes, on skin, or on clothing. Have safety showers and eyewash fountains immediately available. May form explosive mixtures with air. Keep away from heat, sparks, and open flame. Use only spark-proof tools and explosion-proof equipment. Protect containers from damage. Use a suitable hand truck to move containers; do not drag, roll, slide, or drop. For other precautions in using this product, see section 16

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions** : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g, NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

All equipment in storage areas must be explosion-proof. Electric installation in storage areas must meet the requirements of National Electric Code (NEC) Article 500. This material is a static accumulator. To avoid ignition of vapors by static discharge, all metal parts and equipment must be grounded. Follow NFPA 77, Recommended Practice on Static Electricity ([www.nfpa.org](http://www.nfpa.org)), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Hexane (110-54-3)		
ACGIH	ACGIH TLV-TWA (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm
USA IDLH	US IDLH (ppm)	1100 ppm (10% LEL)

### 8.2. Exposure controls

**Appropriate engineering controls** : Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.

**Personal protective equipment** : Avoid all unnecessary exposure.

**Eye protection** : Chemical goggles or safety glasses. Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133.

**Skin and body protection** : Wear work gloves and metatarsal shoes for cylinder handling. Protective equipment where needed. Select in accordance with OSHA 29 CFR 1910.132, 1910.136, and 1910.138.

Respiratory protection	: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Other information	: Do not eat, drink or smoke during use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Colorless liquid.
Color	: Colorless
Odor	: Slight petroleum
Odor threshold	: 65 - 248 ppm
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: -95 °C
Freezing point	: No data available
Boiling point	: 68.7 °C
Flash point	: -22 °C
Critical temperature	: 234.2 °C
Auto-ignition temperature	: 225 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 124 mm Hg (at 20 °C)
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.672 g/cm <sup>3</sup> (at 15 °C)
Relative gas density	: 2.98
Solubility	: Water:
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 1 - 7.5 vol %

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

HIGHLY FLAMMABLE LIQUID AND VAPOR. May form flammable/explosive vapor-air mixture.

#### 10.3. Possibility of hazardous reactions

May occur.

#### 10.4. Conditions to avoid

Extremely high or low temperatures. Open flame.

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### 10.5. Incompatible materials

Strong oxidizers. Oxygen. Chlorine. Fluorine.

### 10.6. Hazardous decomposition products

May release flammable gases. Carbon monoxide. Irritating fumes.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Hexane ( f )110-54-3	
LD50 oral rat	25 g/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE US (dermal)	3000.000 mg/kg body weight
ATE US (gases)	48000.000 ppmV/4h

Skin corrosion/irritation : CAUSES SKIN IRRITATION.  
 Serious eye damage/irritation : Not classified  
 Respiratory or skin sensitization : Not classified  
 Germ cell mutagenicity : Not classified  
 Carcinogenicity : Not classified  
 Reproductive toxicity : Not classified  
 Specific target organ toxicity (single exposure) : MAY CAUSE DROWSINESS OR DIZZINESS.  
 Specific target organ toxicity (repeated exposure) : MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.  
 Aspiration hazard : MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.  
 Symptoms/injuries after inhalation : MAY CAUSE DROWSINESS OR DIZZINESS.  
 Symptoms/injuries after skin contact : CAUSES SKIN IRRITATION.  
 Symptoms/injuries after ingestion : MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

Hexane (110-54-3)	
LC50 fish 1	2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

### 12.2. Persistence and degradability

Hexane (110-54-3)	
Persistence and degradability	May cause long-term adverse effects in the environment.

### 12.3. Bioaccumulative potential

Hexane (110-54-3)	
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : Avoid release to the environment.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

- Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.
- Additional information : Handle empty containers with care because residual vapors are flammable.
- Ecology - waste materials : Avoid release to the environment.

**SECTION 14: Transport information**

- In accordance with DOT
- Transport document description : UN1208 Hexanes, 3, II
- UN-No.(DOT) : UN1208
- Proper Shipping Name (DOT) : Hexanes
- Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
- Hazard labels (DOT) : 3 - Flammable liquid



- Packing group (DOT) : II - Medium Danger
- DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized  
 T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)  
 TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling
- Marine pollutant : P



**Additional information**

- Other information : No supplementary information available.

**Transport by sea**

- UN-No. (IMDG) : 1208
- Proper Shipping Name (IMDG) : HEXANES
- Class (IMDG) : 3 - Flammable liquids
- Packing group (IMDG) : II - substances presenting medium danger

**Air transport**

- UN-No. (IATA) : 1208
- Proper Shipping Name (IATA) : Hexanes
- Class (IATA) : 3 - Flammable Liquids
- Packing group (IATA) : II - Medium Danger

**SECTION 15: Regulatory information**

**15.1. US Federal regulations**

**Hexane (110-54-3)**

- Listed on the United States TSCA (Toxic Substances Control Act) inventory
- Subject to reporting requirements of United States SARA Section 313



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Hexane (110-54-3)	
CERCLA RQ	5000 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Fire hazard
SARA Section 313 - Emission Reporting	1.0 %

### 15.2. International regulations

#### CANADA

Hexane (110-54-3)
Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

Hexane (110-54-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### 15.2.2. National regulations

Hexane (110-54-3)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on the Canadian IDL (Ingredient Disclosure List) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals)

### 15.3. US State regulations

Hexane(110-54-3)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List



### SECTION 16: Other information

**Other information**

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product

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**NFPA health hazard**

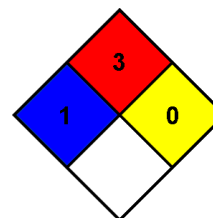
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

**NFPA fire hazard**

: 3 - Liquids and solids that can be ignited under almost all ambient conditions.

**NFPA reactivity**

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



**HMIS III Rating**

Health : 1 Slight Hazard - Irritation or minor reversible injury possible  
 Flammability : 3 Serious Hazard  
 Physical : 0 Minimal Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*