

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Hexane

Product Number : 439177  
Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Flammable liquid, Target Organ Effect, Reproductive hazard

##### Target Organs

Peripheral nervous system., Kidney, Testes. Peripheral nervous system., Kidney, Testes.

##### GHS Classification

Flammable liquids (Category 2)  
Skin irritation (Category 2)  
Eye irritation (Category 2B)  
Reproductive toxicity (Category 2)  
Specific target organ toxicity - single exposure (Category 2)  
Specific target organ toxicity - single exposure (Category 3)  
Aspiration hazard (Category 1)  
Acute aquatic toxicity (Category 2)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H315 + H320 Causes skin and eye irritation.  
H336 May cause drowsiness or dizziness.  
H361 Suspected of damaging fertility or the unborn child.  
H371 May cause damage to organs.  
H401 Toxic to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
 P281 Use personal protective equipment as required.  
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P331 Do NOT induce vomiting.

**HMIS Classification**

**Health hazard:** 2  
**Chronic Health Hazard:** \*  
**Flammability:** 3  
**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 2  
**Fire:** 3  
**Reactivity Hazard:** 0

**Health hazard:** 2  
**Fire:** 3  
**Reactivity Hazard:** 2

**Potential Health Effects**

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

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : n-Hexane  
 Formula : C<sub>6</sub>H<sub>14</sub>  
 Molecular Weight : 86.18 g/mol

| Component              | Concentration |
|------------------------|---------------|
| <b>n-Hexane</b>        |               |
| CAS-No. 110-54-3       | -             |
| EC-No. 203-777-6       |               |
| Index-No. 601-037-00-0 |               |

**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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## 5. FIREFIGHTING MEASURES

### Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

### Suitable extinguishing media

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

### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

### Further information

Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### Conditions for safe storage

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.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

| Components | CAS-No.   | Value | Control parameters                 | Basis  |
|------------|---|-------|------------------------------------|--|
| n-Hexane   | 110-54-3  | TWA   | 50 ppm                             | USA. ACGIH Threshold Limit Values (TLV)  |
| Remarks    | Central Nervous System impairment Eye irritation Peripheral neuropathy Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption |       |                                    |  |
|            |   | TWA   | 50 ppm<br>180 mg/m <sup>3</sup>    | USA. NIOSH Recommended Exposure Limits   |
|            |   | TWA   | 500 ppm<br>1,800 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|            | The value in mg/m <sup>3</sup> is approximate.  |       |                                    |  |
|            |   | TWA   | 50 ppm<br>180 mg/m <sup>3</sup>    | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |

## 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 AXBEK (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.

#### Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: > 480 min

Material tested: Camatril® (Aldrich Z677442, Size M)

#### Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: > 30 min

Material tested: Dermatril® P (Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

|        |            |
|--------|------------|
| Form   | liquid     |
| Colour | colourless |

### Safety data

|                              |                                       |
|------------------------------|---------------------------------------|
| pH                           | 7.0                                   |
| Melting point/freezing point | Melting point/range: -95 °C (-139 °F) |
| Boiling point                | 69 °C (156 °F)                        |
| Flash point                  | -26.0 °C (-14.8 °F) - closed cup      |
| Ignition temperature         | 234 °C (453 °F)                       |
| Autoignition temperature     | 234.0 °C (453.2 °F)                   |
| Lower explosion limit        | 1.2 %(V)                              |

|   |  |
|---|--|
| Upper explosion limit                     | 7.7 %(V)   |
| Vapour pressure                           | 341.3 hPa (256.0 mmHg) at 37.7 °C (99.9 °F)<br>176.0 hPa (132.0 mmHg) at 20.0 °C (68.0 °F) |
| Density                                   | 0.659 g/mL at 25 °C (77 °F)  |
| Water solubility                          | insoluble  |
| Partition coefficient:<br>n-octanol/water | log Pow: 3.90 - 4.11   |
| Relative vapour<br>density                | no data available  |
| Odour                                     | no data available  |
| Odour Threshold                           | no data available  |
| Evaporation rate                          | 15.8   |

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

### Materials to avoid

Oxidizing agents

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 25,000 mg/kg

#### Inhalation LC50

LC50 Inhalation - rat - 4 h - 48000 ppm

#### Dermal LD50

no data available

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/eye irritation

Eyes - rabbit - Mild eye irritation

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

Carcinogenicity - rat - Inhalation

Tumorigenic: Carcinogenic by RTECS criteria. Tumorigenic Effects: Testicular tumors.

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible 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.

### Reproductive toxicity

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals. Suspected human reproductive toxicant Suspected of damaging fertility.

### Teratogenicity

no data available

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

May cause drowsiness or dizziness.

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

Ingestion - May cause damage to organs through prolonged or repeated exposure. - Nervous system

### Aspiration hazard

May be fatal if swallowed and enters airways.

### Potential health effects

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness. |
| <b>Ingestion</b>  | May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.                |
| <b>Skin</b>       | May be harmful if absorbed through skin. May cause skin irritation.  |
| <b>Eyes</b>       | May cause eye irritation.  |

### Signs and Symptoms of Exposure

Prolonged or repeated contact with skin may cause: defatting, Dermatitis, Contact with eyes can cause: Redness, Blurred vision, Provokes tears., Effects due to ingestion may include: Gastrointestinal discomfort, Central nervous system depression, Lung irritation, chest pain, pulmonary edema, giddiness, slowed reaction time, slurred speech, Headache, Dizziness, Drowsiness, Unconsciousness

### Synergistic effects

no data available

### Additional Information

RTECS: MN9275000

## 12. ECOLOGICAL INFORMATION

### Toxicity

|   |  |
|---|--|
| Toxicity to fish                                    | LC50 - Pimephales promelas (fathead minnow) - 2.5 mg/l - 96.0 h  |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 3,878.00 mg/l - 48 h   |
| Toxicity to algae                                   | EC50 - Chlorella vulgaris (Fresh water algae) - 12,840.00 mg/l - 3 h<br>EC50 - SKELETOMA - 0.30 mg/l - 8 h |

### Persistence and degradability

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

**13. DISPOSAL CONSIDERATIONS****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1208 Class: 3 Packing group: II  
 Proper shipping name: Hexanes  
 Reportable Quantity (RQ): 5000 lbs  
 Marine pollutant: No  
 Poison Inhalation Hazard: No

**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****OSHA Hazards**

Flammable liquid, Target Organ Effect, Reproductive hazard

**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:

|          | CAS-No.  | Revision Date |
|----------|----------|---------------|
| n-Hexane | 110-54-3 | 2007-07-01    |

**SARA 311/312 Hazards**

Fire Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

|          | CAS-No.  | Revision Date |
|----------|----------|---------------|
| n-Hexane | 110-54-3 | 2007-07-01    |

**Pennsylvania Right To Know Components**

|          | CAS-No.  | Revision Date |
|----------|----------|---------------|
| n-Hexane | 110-54-3 | 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.

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## 16. OTHER INFORMATION

### Further information

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