

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
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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, Irritant

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 3)
Specific target organ toxicity - single exposure (Category 2)
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: 0

Potential Health Effects

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.
Eyes Causes 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 : C₆H₁₄
 Molecular Weight : 86.18 g/mol

| CAS-No. | EC-No. | Index-No. | Concentration |
|-----------------|-----------|--------------|---------------|
| n-Hexane | | | |
| 110-54-3 | 203-777-6 | 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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

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.

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).

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

Store in cool place. 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

Components with workplace control parameters

| Components | CAS-No. | Value | Control parameters | Basis |
|------------|---|-------|------------------------------------|--|
| n-Hexane | 110-54-3 | TWA | 50 ppm 180 mg/m ³ | USA. NIOSH Recommended Exposure Limits |
| | | 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 180 mg/m ³ | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | TWA | 500 ppm 1,800 mg/m ³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | The value in mg/m ³ is approximate. | | | |

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.

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.

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) 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: n-octanol/water | no data available |
| Relative vapour density | no data available |
| Odour | no data available |
| Odour Threshold | no data available |
| Evaporation rate | 15.8 |

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

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.

Teratogenicity

Suspected human reproductive toxicant

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

May cause damage to organs.

May cause drowsiness or dizziness.

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

no data available

Aspiration hazard

May be fatal if swallowed and enters airways.

Potential health effects

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

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

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

SARA 311/312 Hazards

Fire Hazard, Acute Health 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

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

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