

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.2
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Hexane
Product Number : 248878
Brand : Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. 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	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable Liquid
Target Organ Effect
Irritant
Reproductive hazard
Target Organs
Peripheral nervous system., Kidney, Testes.

HMIS Classification

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

NFPA Rating

Health Hazard: 2
Fire : 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation

Vapours may cause drowsiness and dizziness. May be harmful if inhaled.

Skin

Causes respiratory tract irritation.
May be harmful if absorbed through skin. Causes skin irritation.

Eyes

Causes eye irritation.

Ingestion

Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.

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

Flammable properties

Flash point -26.0 °C (-14.8 °F) - closed cup

Ignition temperature 234 °C (453 °F)

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.

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 for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

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. Store in cool place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters				
Components	CAS-No.	Value	Control parameters	Update
n-Hexane	110-54-3	TWA	50 ppm	1998-09-01
				US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004;Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	1998 Adoption.			
	Substances for which there is a Biological	Exposure Index or Indices.		
	TWA	50 ppm 180 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
	TWA	500 ppm 1.800 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

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.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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 -95.0 °C (-139.0 °F)
Boiling point 68.0 - 70.0 °C (154.4 - 158.0 °F)
Flash point -26.0 °C (-14.8 °F) - closed cup
Ignition temperature 234 °C (453 °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 0.66 g/cm3
Water solubility insoluble
Partition coefficient: log Pow: 3.90 - 4.11
n-octanol/water

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 25,000 mg/kg

LC50 Inhalation - rat - 4 h - 48000 ppm

Irritation and corrosion

Eyes - rabbit - Mild eye irritation

Sensitisation

no data available

Chronic exposure

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.
	Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
Signs and Symptoms of Exposure	
Prolonged or repeated contact with skin may cause:, 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, glandiness, slowed reaction time, slurred speech, Headache, Dizziness, Drowsiness, Unconsciousness	
Potential Health Effects	
Inhalation	Vapours may cause drowsiness and dizziness. May be harmful if inhaled.
Skin	Causes respiratory tract irritation.
Eyes	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	Causes eye irritation.
	Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.
Target Organs	Peripheral nervous system, Kidney, Testes,
12. ECOLOGICAL INFORMATION	
Elimination Information (persistence and degradability)	
no data available	
Ecotoxicity effects	
Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 2.5 mg/l - 96 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 - SKELETONA - 0.30 mg/l - 8 h
Further Information on ecology	
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.	
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
no data available	
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. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.	
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Contaminated packaging	
Dispose of as unused product.	
14. TRANSPORT INFORMATION	
DOT (US)	
UN-Number: 1208 Class: 3	Packing group: II
Proper shipping name: Hexanes	
IMDG	
UN-Number: 1208 Class: 3	Packing group: II
Proper shipping name: HEXANES	EMS-No: F-E, S-D
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, Reproductive hazard	
TSCA Status	
On TSCA Inventory	
DSL Status	
All components of this product are on the Canadian DSL list.	
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	
n-Hexane	CAS-No. 110-54-3 Revision Date 1995-01-01
SARA 311/312 Hazards	
Fire Hazard, Acute Health Hazard, Chronic Health Hazard	
Massachusetts Right To Know Components	
n-Hexane	CAS-No. 110-54-3 Revision Date 1995-01-01
Pennsylvania Right To Know Components	
n-Hexane	CAS-No. 110-54-3 Revision Date 1995-01-01
New Jersey Right To Know Components	
n-Hexane	CAS-No. 110-54-3 Revision Date 1995-01-01
California Prop. 65 Components	
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.	
16. OTHER INFORMATION	
Further Information	
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.