

## SAFETY DATA SHEET

Version 5.4  
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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Heptane		
Product Number	: 246654		
Brand	: Sigma-Aldrich		
Product Use	: For laboratory research purposes.		
Supplier	: Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA	Manufacturer	: Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	: +1 9058299500		
Fax	: +1 9058299292		
Emergency Phone # (For both supplier and manufacturer)	: 1-800-424-9300		
Preparation Information	: Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956		

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### Target Organs

Central nervous system, Heart, Lungs, ears Central nervous system, Heart, Lungs, ears

#### WHMIS Classification

B2	Flammable liquid	Flammable liquid
D2B	Toxic Material Causing Other Toxic Effects	Specific target organ toxicity - single exposure Moderate skin irritant

#### GHS Classification

Flammable liquids (Category 2)  
Skin corrosion/irritation (Category 2)  
Specific target organ toxicity - single exposure (Category 3), Central nervous system  
Aspiration hazard (Category 1)  
Acute aquatic toxicity (Category 1)  
Chronic aquatic toxicity (Category 1)

#### 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	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
P331 Do NOT induce vomiting.  
P501 Dispose of contents/ container to an approved waste disposal plant.

#### HMIS Classification

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

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C<sub>7</sub>H<sub>16</sub>  
Molecular weight : 100.20 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Heptane</b>			
142-82-5	205-563-8	601-008-00-2	<=100%

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### 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

Flush eyes with water as a precaution.

#### 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.

#### Specific hazards arising from the chemical

Flash back possible over considerable distance.

#### Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

**Explosion data - sensitivity to mechanical impact**

No data available

**Explosion data - sensitivity to static discharge**

No data available

**Further information**

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray to cool unopened containers.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid breathing vapours, 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 under inert gas. 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
Heptane	142-82-5	TWA	400.000000 ppm	Canada. British Columbia OEL
		STEL	500.000000 ppm	Canada. British Columbia OEL
		TWAEV	400.000000 ppm 1,635.000000 mg/m3	Canada. Ontario OELs
		STEV	500.000000 ppm 2,045.000000 mg/m3	Canada. Ontario OELs
		TWAEV	400.000000 ppm 1,640.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		STEV	500.000000 ppm	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure

			2,050.000000 mg/m3	values for airborne contaminants
		TWA	400.000000 ppm 1,640.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	500.000000 ppm 2,050.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	400.000000 ppm 1,640.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	500.000000 ppm 2,050.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	400.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	400.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)

## 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.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 65 min

Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, 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 and safety officer 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.

**Specific engineering controls**

Use mechanical exhaust or laboratory fumehood to avoid exposure.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	liquid
Colour	No data available

**Safety data**

pH	No data available
Melting point/freezing point	Melting point/range: -91 °C (-132 °F)
Boiling point	98 °C (208 °F)
Flash point	-3.99 °C (24.82 °F) - closed cup
Ignition temperature	223 °C (433 °F)
Auto-ignition temperature	223.0 °C (433.4 °F)
Lower explosion limit	1.1 %(V)
Upper explosion limit	7 %(V)
Vapour pressure	110.7 hPa (83.0 mmHg) at 37.7 °C (99.9 °F) 53.3 hPa (40.0 mmHg) at 20.0 °C (68.0 °F)
Density	0.684 g/mL at 25 °C (77 °F)
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: > 3.000
Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

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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.

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

No data available

**Inhalation LC50**

LC50 Inhalation - Rat - 4 h - 103,000 mg/m<sup>3</sup>

Irritating to respiratory system.

**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 - No eye irritation - OECD Test Guideline 405

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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.

**Reproductive toxicity**

No data available

**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)**

No data available

**Aspiration hazard**

May be fatal if swallowed and enters airways.

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes 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. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

Prolonged or repeated exposure to skin causes defatting and dermatitis., Central nervous system depression, narcosis, Damage to the lungs.

**Synergistic effects**

No data available

**Additional Information**

RTECS: MI7700000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

Toxicity to fish	LC50 - Carassius auratus (goldfish) - 4 mg/l - 24.0 h LC50 - Tilapia mossambica - 375 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1.50 mg/l - 48 h

**Persistence and degradability**

**Bioaccumulative potential**

Indication of bioaccumulation.

**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.

Very toxic to aquatic life with long lasting effects.

Do not empty into drains. Avoid release to the environment.

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**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.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 1206 Class: 3  
Proper shipping name: Heptanes  
Reportable Quantity (RQ):

Packing group: II

Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1206 Class: 3 Packing group: II EMS-No: F-E, S-D  
Proper shipping name: HEPTANES  
Marine pollutant: No

**IATA**

UN number: 1206 Class: 3 Packing group: II  
Proper shipping name: Heptanes

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**15. REGULATORY INFORMATION**

**WHMIS Classification**

B2	Flammable liquid	Flammable liquid
D2B	Toxic Material Causing Other Toxic Effects	Specific target organ toxicity - single exposure Moderate skin irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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**16. OTHER INFORMATION**

**Text of H-code(s) and R-phrase(s) mentioned in Section 3**

H412	Επιβλαβές για τους υδρόβιους οργανισμούς, με μακροχρόνιες επιπτώσεις.
Skin Corr.	Διάβρωση του δέρματος

**Further information**

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