

## MATERIAL SAFETY DATA SHEET

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Version 1.8

## Section 1 - Product and Company Information

Product Name	HEPTANE, 99%
Product Number	H2198
Brand	ALDRICH
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS MO 63103 US
Technical Phone:	314 771 5765
Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
HEPTANE	142-82-5	No
Formula	C7H16	
Synonyms	Dipropyl methane * Eptani (Italian) * Gettysolve-C * Heptan (Polish) * n-Heptane * Heptane (ACGIH:OSHA) * Heptanen (Dutch) * n-Heptane (OSHA) * Heptyl hydride	
RTECS Number:	MI7700000	

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Harmful.  
Irritating to eyes, respiratory system and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.  
Target organ(s): Nerves. Heart.

## HMIS RATING

HEALTH: 2\*  
FLAMMABILITY: 3  
REACTIVITY: 0

## NFPA RATING

HEALTH: 2  
FLAMMABILITY: 3  
REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is

conscious. Call a physician.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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### Section 5 - Fire Fighting Measures

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#### FLAMMABLE HAZARDS

Flammable Hazards: Yes

#### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion can occur under fire conditions. In advanced or massive fires the area should be evacuated and the fire should be fought from a remote explosion-resistant location.

#### FLASH POINT

25 °F -4 °C Method: closed cup

#### EXPLOSION LIMITS

Lower: 1.1 % Upper: 7 %

#### AUTOIGNITION TEMP

223 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam. Use water spray to cool fire-exposed containers.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors.

Ventilate area and wash spill site after material pickup is complete.

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## Section 7 - Handling and Storage

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### HANDLING

User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

### STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place. Handle and store under nitrogen.

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## Section 8 - Exposure Controls / PPE

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### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.  
Hand: Compatible chemical-resistant gloves.  
Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

### EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	STEL	500 PPM
USA	ACGIH	TWA	400 PPM
USA	MSHA Standard-air	TWA	500 PPM (2000 MG/M3)
USA	OSHA.	PEL	8H TWA 500 PPM (2000 MG/M3)
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	85 PPM
		Ceiling	co440 PPM/15M

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	1200 MG/M3
Poland		NDSch	2000 MG/M3
Poland		NDSP	-

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## Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
Molecular Weight	100.21 AMU	
pH	N/A	
BP/BP Range	98 - 99 °C	
MP/MP Range	-91 °C	
Freezing Point	N/A	
Vapor Pressure	40 mmHg	20 °C
Vapor Density	3.5 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.683 g/cm3	
Bulk Density	N/A	

Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 0.02 %	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: > 3	
Decomposition Temp.	N/A	
Flash Point	25 °F -4 °C	Method: closed cup
Explosion Limits	Lower: 1.1 % Upper: 7 %	
Flammability	N/A	
Autoignition Temp	223 °C	
Refractive Index	1.388	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: Insoluble.	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: Harmful if inhaled.

Ingestion: May be harmful if swallowed.

Multiple Routes: Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract.

### TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system. Heart. Lungs.

### SIGNS AND SYMPTOMS OF EXPOSURE

Prolonged or repeated exposure to skin causes defatting and dermatitis. CNS depression. Narcotic effect. Damage to the lungs.

### TOXICITY DATA

Inhalation

Rat

103,000 mg/m<sup>3</sup>

LC50

Intravenous

Mouse

222 MG/KG

LD50

CHRONIC EXPOSURE - CARCINOGEN

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

IRIS/EPA CARCINOGEN LIST

Rating: Group D

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Section 12 - Ecological Information

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PHYSICAL PROPERTIES AFFECTING ECOTOXICITY

BOD: 3.5 %  
BOD after 5 Days: 55 %

ACCUMULATION

Bioaccumulation Potential: Indication of bioaccumulation.

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish  
Species: Carassius auratus (Goldfish)  
Time: 24 h  
Value: 4 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 1.5 mg/l

ADDITIONAL RESULTS/DATA FROM RELEVANT SCIENTIFIC EXPERIMENTS

Because of harmful effects on water organisms, this material should not be introduced into drains. Avoid contamination of the environment

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Section 13 - Disposal Considerations

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APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. 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.

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Section 14 - Transport Information

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DOT

Proper Shipping Name: Heptanes  
UN#: 1206  
Class: 3  
Packing Group: Packing Group II  
Hazard Label: Flammable liquid  
PIH: Not PIH

IATA

Proper Shipping Name: Heptanes  
IATA UN Number: 1206  
Hazard Class: 3  
Packing Group: II

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## Section 15 - Regulatory Information

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### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F Xn N

Indication of Danger: Highly Flammable. Harmful. Dangerous for the environment.

R: 11 38 50/53 65 67

Risk Statements: Highly flammable. Irritating to skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.

S: 9 16 29 33 60 61 62

Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Do not empty into drains. Take precautionary measures against static discharges. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Harmful.

Risk Statements: Irritating to eyes, respiratory system and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.

Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Do not empty into drains. Take precautionary measures against static discharges. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

US Statements: Target organ(s): Nerves. Heart.

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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## Section 16 - Other Information

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### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

### WARRANTY

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

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