

MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	2
Fire Hazard	3
Reactivity	0



See Section 8.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code:	H1005
Product Name:	HEPTANE, REAGENT
Chemical Name:	Heptane
Synonyms:	Dipropyl methane Gettysolve-C Heptane Heptyl hydride Heptano (Spanish)
Recommended use:	Solvent. In organic synthesis.
CAS #:	142-82-5
RTECS #	MI7700000
Formula:	C7-H16
CI#:	Not available
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
Order Online At:	https://www.spectrumchemical.com
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300
Contact Person:	Regina Wachenheim (East Coast)
Contact Person:	Martin LaBenz (West Coast)

2. HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

WARNING! FLAMMABLE

WARNING! IRRITANT

Irritating to skin

Odor:
Gasoline-like.

Physical state:
Liquid.

Appearance:
No information available

Color:
Clear. Colorless.

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:

Ingestion. Skin. Eyes. Inhalation.

Acute Potential Health Effects:

Skin Contact:

Irritating to skin.

Eye Contact:

May cause eye irritation.

Inhalation:

May cause irritation of respiratory tract. May cause nausea and headache. Inhalation of vapors may cause dizziness or suffocation. May cause central nervous system effects. May affect the nervous system. It may affect the brain. May affect respiration. May cause cardiovascular effects. May affect the liver.

Ingestion:

Ingestion may cause vomiting and nausea. May cause abdominal pain. Aspiration hazard if swallowed - can enter the lungs and cause damage. Aspiration into the lungs may cause chemical pneumonitis. May affect the liver. May cause hypoglycemia. May affect the blood. It may affect the urinary system.

Chronic Potential Health Effects:

Component
n-Heptane
142-82-5 (100)

Carcinogen Status:
No information available

Target Organs:

Central nervous system. Peripheral nervous system. Skin. Respiratory system.

Mutagenic Effects:

No information available

Teratogenic Effects:

No information available

Aggravated Medical Conditions: Pre-existing skin disorders. Impaired respiratory function.

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
n-Heptane	142-82-5	100

4. FIRST AID MEASURES

General Advice:	Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126).
Skin Contact:	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention.
Eye Contact:	Flush eye with water for 15 minutes. Get medical attention.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.
Notes to Physician:	Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F):	-4.°C/25 °F -1 °C/30 °F
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Flash Point Tested according to:

Closed cup
Open cup

Lower Explosion Limit (%):	No information available
Upper Explosion Limit (%):	No information available

Autoignition Temperature (°C/°F):	204-285 °C/399-545 °F
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Suitable Extinguishing Media:	Carbon dioxide (CO ₂). Dry chemical. Water spray mist or foam.
Unsuitable Extinguishing Media:	Do not use a solid (straight) water stream as it may scatter and spread fire.
Hazardous Combustion Products:	Carbon monoxide; Carbon monoxide
Specific hazards:	Flammable May be ignited by heat, sparks or flames Container explosion may occur under fire conditions or when heated Vapor may travel considerable distance to source of ignition and flash back Vapors may form explosive mixtures with air Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks) Fire may produce irritating, corrosive and/or toxic gases

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific Methods:

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for Cleaning Up:

Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling**Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Use only in well-ventilated areas. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Storage**Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Personal Protective Equipment

- Eye protection:** Goggles. Safety glasses with side-shields.
- Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

National occupational exposure limits**United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
n-Heptane - 142-82-5	500 ppm TWA 2000 mg/m ³ TWA	85 ppm TWA 350 mg/m ³ TWA 440 ppm Ceiling 1800 mg/m ³ Ceiling	500 ppm STEL 400 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
n-Heptane 142-82-5	400 ppm TWA 1640 mg/m ³ TWA 500 ppm STEL 2050 mg/m ³ STEL	400 ppm TWA 500 ppm STEL	400 ppm TWA	400 ppm TWAEV 1640 mg/m ³ TWAEV 500 ppm STEV 1640 mg/m ³ STEV

Australia and Mexico

Components	Australia	Mexico
n-Heptane 142-82-5	500 ppm STEL 2050 mg/m ³ STEL 400 ppm TWA 1640 mg/m ³ TWA	400 ppm TWA 1600 mg/m ³ TWA 500 ppm STEL 2000 mg/m ³ STEL

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Liquid.	Appearance: No information available	Color: Clear. Colorless.
Odor: Gasoline-like.	Molecular/Formula weight: 100.20	Taste No information available
Flash point (°C): -4	Lower Explosion Limit (%): 1.05%	Upper Explosion Limit (%): 6.7%
Autoignition Temperature (°C/°F): 204-285 °C/399-545 °F	Melting point/range(°C/°F): -90.7 °C/-131.3 °F	Boiling point/range(°C/°F): 98.4 °C/209.1 °F
pH: No information available	Specific gravity: 0.6838	Density (g/cm³): No information available
Decomposition temperature(°C/°F): No information available	Bulk density: No information available	Vapor pressure @ 20°C (kPa): 5.3 @ 22.3 °C
Evaporation rate: No information available	Vapor density: 3.5	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): 4.66	Miscibility: Miscible with Ether Miscible with Acetone Miscible with Benzene Miscible with Chloroform Miscible with Petroleum Ether

Solubility:
Insoluble in water
Soluble in Carbon tetrachloride
Very soluble in Ethanol

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions
Conditions to avoid:	Heat. Incompatible materials. Moisture sensitive. Exposure to moist air. Slowly decomposed by moisture.
Incompatible Materials:	Oxidizing agents.
Hazardous decomposition products:	Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.
Possibility of Hazardous Reactions:	Violent reaction with phosphorus + chlorine
Polymerization:	Hazardous polymerisation does not occur
Corrosivity:	No information available
Special Remarks on Corrosivity:	No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

n-Heptane - 142-82-5

LD50/oral/rat = 17000 mg/kg
LD50/oral/mouse = 5000 mg/kg Oral LD50 Mouse
LD50/dermal/rat = No information available
LD50/dermal/rabbit = 3000 mg/kg Dermal LD50Rabbit
LC50/inhalation/rat = 103 g/m³ Inhalation LC50 Rat 4 h
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LC50/inhalation/rat 103 g/m³ Inhalation 4 h
48000 ppm 4 h
LC50/Inhalation/mouse No information available
LD50/dermal/rabbit 3000mg/kg
LD50/dermal/rat No information available
LD50/oral/mouse = 5000mg/kg
LD50/oral/rat = 17000mg/kg

Local Effects

Skin irritation: Causes skin irritation.

Eye irritation: Contact with eyes may cause irritation.

Inhalation: May cause irritation of respiratory tract. Inhalation of high concentrations of vapors may cause dizziness or suffocation. May cause nausea, and headache. May cause loss of appetite. May affect behavior/central nervous system (cheerfulness followed by central nervous system depression, somnolence, loss of judgement, hallucinations, convulsions, lightheadedness, weakness, lassitude, incoordination, stupor, coma). May affect the cardiovascular system (cardiac arrhythmias).

Ingestion: Causes digestive (gastrointestinal) tract irritation. Ingestion may cause nausea, vomiting. May cause abdominal pain. May cause abdominal distension. Aspiration hazard if swallowed. Aspiration into the lungs can cause chemical pneumonitis.

Sensitization: No information available

Chronic Toxicity

Chronic Toxicity Prolonged skin contact may defat the skin and produce dermatitis.. Prolonged or repeated ingestion may affect the bladder. Prolonged or repeated ingestion may affect the blood (changes in serum composition). Prolonged or repeated ingestion may affect the liver. Prolonged or repeated ingestion may cause hypoglycemia. Prolonged or repeated ingestion may cause loss of appetite. Prolonged or repeated inhalation may cause loss of appetite. Prolonged or repeated inhalation may cause difficulty breathing, shortness of breath. Prolonged or repeated inhalation may affect the liver. Prolonged or repeated inhalation may affect the peripheral nervous system (weakness, peripheral neuropathy with paresthesia - a tingling, pricking, or numbness of the skin (known as the feeling of "pins and needles) generally of the hands and feet (extremities)). Prolonged or repeated inhalation may affect the blood (anemia, leukopenia, neutropenia). Prolonged or repeated inhalation may affect the brain. Prolonged or repeated inhalation may cause central nervous system effects.

Carcinogenic effects: Not considered carcinogenic

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
n-Heptane	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: No information available

Reproductive Effects: No information available

Teratogenic Effects: No information available

Target Organs: Central nervous system. Peripheral nervous system. Skin. Respiratory system.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: Information given is based on data on the components and the ecotoxicology of similar products

Ecotoxicity effects: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic toxicity:

n-Heptane - 142-82-5

Freshwater Fish Species Data: 375.0 mg/L LC50 Cichlid fish 96 h 1

Water Flea Data: 10 mg/L EC50 Daphnia magna 24 h

Mobility: The product is insoluble and floats on water. Expected to be immobile in soil based on estimated Koc.

Persistence and degradability: No information available

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is very high.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
n-Heptane	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1206

Proper Shipping Name: Heptanes

Hazard Class: 3

Packing Group: II

Subsidiary Risk: Not applicable

Marine Pollutant: No data available

ERG No: 128

DOT RQ (lbs): No information available

TDG (Canada)
UN-No: UN1206
Proper Shipping Name: Heptanes
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Description: No information available

ADR
UN-No: UN1206
Proper Shipping Name: Heptanes
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEPIC Tremcard No: No information available

IMO / IMDG
UN-No: UN1206
Proper Shipping Name: Heptanes
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-E
MFAAG: No information available
Maximum Quantity: No information available

RID
UN-No: UN1206
Proper Shipping Name: Heptanes
Hazard Class: 3
Packing Group: II
Subsidiary Risk: 3
Classification Code: No information available
Description: No information available

ICAO
UN-No: UN1206
Proper Shipping Name: Heptanes
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Description: No information available

IATA
UN-No: UN1206
Proper Shipping Name: Heptanes
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
ERG Code: 3H
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>n</i> -Heptane	T	Present	Present KE-18271	Present (2)-7	Present	Present	Present 205-563-8

U.S. Regulations

n-Heptane

- Massachusetts RTK: Present
- New Jersey RTK Hazardous Substance List: Present
- Pennsylvania RTK: Present
- RI RTK - Hazardous Substances List: Present
- Minnesota - Hazardous Substance List: Present
- California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>n</i> -Heptane	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>n</i> -Heptane	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>n</i> -Heptane	Not Applicable	01/26/199406/30/1998

Canada

WHMIS hazard class:

B2 Flammable liquid
D2B Toxic materials

n-Heptane

B2 D2B

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
<i>n</i> -Heptane	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
n-Heptane	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
n-Heptane	Not listed	Not listed

EU Classification

R-phrase(s)

R11 - Highly flammable.

R38 - Irritating to skin.

R65 - Harmful: may cause lung damage if swallowed.

R67 - Vapors may cause drowsiness and dizziness.

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S -phrase(s)

S9 - Keep container in a well-ventilated place.

S16 - Keep away from sources of ignition - No smoking.

S29 - Do not empty into drains.

S33 - Take precautionary measures against static discharges.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Components	Classification	Concentration Limits:	Safety Phrases
n-Heptane	F; R11 Xi; R38 N; R50-53 Xn; R65 R67	No information	S2 S9 S16 S29 S33 S60 S61 S62

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

F - Highly flammable.

Xi - Irritant.

Xn - Harmful.

N - Dangerous for the environment.



16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

Preparation Date: 06-Feb-2014

Reason for revision: Not applicable
Prepared by: Sonia Owen
Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.