

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: Hexane

Catalog Numbers: S80032, S800321, S800322MF, BP2615-100, BPH302-4EMW, H291-20, H291-200, H291-4, H291-500, H291FB-115, H291FB-19, H291FB-200, H291FB-50, H291RB-115, H291RS-115, H291RS-19, H291RS-200, H291RS-28, H291S-4, H291SS-115, H291SS-200, H291SS-28, H291SS-50, H292-1, H292-20, H292-200, H292-4, H292-500, H292200LC, H292FB-115, H292FB-19, H292FB-200, H292FB-50, H292J-4, H292J-500, H292POP50, H292RB-115, H292RB-200, H292RB-50, H292RS-19, H292RS115, H292RS200, H292RS28, H292RS50, H292SK-4, H292SS-200, H300-4, H302-1, H302-4, H302-4LC, H302J-1, H302J-4, H302ME, H302N-119, H302N-219, H302POP-19, H302POP-50, H302RS-115, H302RS-19, H302RS-200, H302RS-28, H302RS-50, H302SK-1, H302SK-4, H302SS-19, H302SS-28, H303-1, H303-4, H303-4LC, H303J-1, H303J-4, H303RS-115, H303RS-19, H303RS-200, H303RS-28, H303RS-50, H303SS-115, H303SS-200, H303SS-28, H303SS-50, H307-4, H307-4LC, H334-1, H334-4, N3-20, N3-200, N3S-4, NC9173152, NC9200225, NC9321642, NC9321646, NC9321654, NC9321656, NC9321658, NC9323196, NC9394242, NC9410668, NC9851780, O3386-20, S800322, S80032HPLC, S93257, XXH291SAMP4LI, XXH29218LI, XXH292SAMP4LI, XXH300SAMP4LI, XXH302SAMP4LI, XXH303SAMP4LI, XXH307SAMP4LI

Synonyms: n-Hexane; Hexyl hydride; Dipropyl; normal-Hexane; Hex.

Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 201-796-7100

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#: 110-54-3
Chemical Name: Hexane
%: >60
EINECS#: 203-777-6
Hazard Symbols: F XN N
Risk Phrases: 11 38 48/20 51/53 62 65 67

Text for R-phrases: see Section 16

Hazard Symbols:



Risk Phrases:

XN F N



11 38 48/20 51/53 62 65 67

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! May be harmful if absorbed through the skin. Dangerous for the environment. Aspiration hazard if swallowed. Can enter lungs and cause damage. Extremely flammable liquid and vapor. Vapor may cause flash fire. Possible risk of impaired fertility. Breathing vapors may cause drowsiness and dizziness. Causes eye, skin, and respiratory tract irritation. Long-term exposure may cause damage to

the nervous system of the extremities (the hands, arms, legs and feet). Target Organs: Central nervous system, respiratory system, eyes, skin, peripheral nervous system, testes.

Potential Health Effects

- Eye:** Causes mild eye irritation.
- Skin:** Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Causes irritation with burning pain, itching, and redness. Absorbed through the skin.
- Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause central nervous system depression.
- Inhalation:** Causes respiratory tract irritation. Exposure produces central nervous system depression. Vapors may cause dizziness or suffocation.
- Chronic:** Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. Chronic exposure may cause visual disturbances. Laboratory experiments have resulted in mutagenic effects. Peripheral neuropathy symptoms include: muscular weakness, paresthesia, numbing of the hands, feet, legs and arms, unsteadiness, and difficulty in walking and standing. Repeated exposure may cause nervous system abnormalities with muscle weakness and damage, motor incoordination, and sensation disturbances. Chronic exposure produces peripheral neuropathy.

Section 4 - First Aid Measures

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
- Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
- Ingestion:** Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
- Notes to Physician:** Treat symptomatically and supportively. For ingestion, the stomach could be intubated, aspirated, and lavaged with a slurry of activated charcoal--protect the airway from aspiration of gastric contents. Monitor arterial blood gases in cases of severe aspiration.

Section 5 - Fire Fighting Measures

- General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. May accumulate static electrical charges, and may cause ignition of its own vapors. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire.
- Extinguishing Media:** Use dry chemical, carbon dioxide, or appropriate foam. Solid streams of water may be ineffective and spread material. Water may be ineffective because it will not cool material below its flash point.
- Autoignition Temperature:** 225 deg C (437.00 deg F)
- Flash Point:** -7.6 to -15 deg F
- Explosion:** 1.2 vol %
- Limits: Lower:** Explosion 7.7 vol %
- Limits: Upper:**
- NFPA Rating:** health: 1; flammability: 3; instability: 0;

Section 6 - Accidental Release Measures

- General Information:** Use proper personal protective equipment as indicated in Section 8.
- Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Use only non-sparking tools and equipment.

Section 7 - Handling and Storage

- Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
- Storage:** Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Hexane	50 ppm; Skin - potential	50 ppm TWA; 180 mg/m3 TWA	500 ppm
	significant	mg/m3 TWA 1100	1800
	contribution to	ppm IDLH	
	overall exposure		
	by the cutaneous		
	route		

OSHA Vacated PELs: Hexane: 50 ppm TWA; 180 mg/m3 TWA

Personal Protective Equipment

- Eyes:** Wear chemical splash goggles.
- Skin:** Wear appropriate protective gloves to prevent skin exposure.
- Clothing:** Wear appropriate protective clothing to prevent skin exposure.
- Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: clear colorless
Odor: gasoline-like
pH: Not available
Vapor Pressure: 151 mm Hg @ 25 deg C
Vapor Density: 2.97(Air = 1)
Evaporation Rate: Not available
Viscosity: 0.31 mPas 20 deg C
Boiling Point: 62-69 deg C @ 760 mm Hg
Freezing/Melting Point: -95 deg C (-139.00°F)
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: 0.678
Molecular Formula: C₆H₁₄
Molecular Weight: 86.18

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat, electrical sparks, confined spaces.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 110-54-3: MN9275000
LD50/LC50: RTECS:
CAS# 110-54-3: Draize test, rabbit, eye: 10 mg Mild;
Inhalation, mouse: LC50 = 150000 mg/m³/2H;
Inhalation, rat: LC50 = 48000 ppm/4H;
Inhalation, rat: LC50 = 627000 mg/m³/3M;
Oral, rat: LD50 = 25 gm/kg;
.

Carcinogenicity: Hexane - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology: Occupational polyneuropathy has resulted from hexane exposures as low as 500 ppm, but the minimum levels of n-hexane that are neurotoxic in humans haven't been established. Nearly continuous exposure of animals at 250 ppm has caused neurotoxic effects.
Teratogenicity: No evidence of teratogenicity or embryotoxicity in animal studies with hexane. Fetotoxicity has been observed in the presence of maternal toxicity.
Reproductive: Severe testicular damage has been observed in rats exposed to hexane at concentrations which have produced other significant toxicity. Although subneurotoxic doses of its principle toxic metabolite, 2,5-hexanedione, can induce progressive testicular toxicity in rats, there have been no reports of human sterility or other reproductive toxicity associated with n-hexane exposures.
Neurotoxicity: n-Hexane is a mild irritant and CNS depressant in acute exposure, but its principal effects are damage to the sensory and motor peripheral nerves, particularly in chronic exposure.
Mutagenicity: Positive results (chromosomal damage in the bone marrow cells) obtained for rats exposed by inhalation to n-hexane.
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT

Shipping Name: HEXANES

Hazard Class: 3

UN Number: UN1208

Packing Group: II

Canada TDG

Shipping Name: HEXANES

Hazard Class: 3

UN Number: UN1208

Packing Group: II

USA RQ: CAS# 110-54-3: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 110-54-3 is listed on the TSCA Inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules Section 12b

None of the chemicals in this product are under a Chemical Test Rule.

TSCA Significant New Use Rule

None of the chemicals are listed under TSCA Section 12b.

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 110-54-3: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes Section 313

CAS # 110-54-3: acute, chronic, flammable.

This material contains Hexane (CAS# 110-54-3, 60%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act:

CAS# 110-54-3 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

STATE

Hexane can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level:

None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN F N

Risk Phrases:

R 11 Highly flammable.

R 38 Irritating to skin.

R 48/20 Harmful : danger of serious damage to health by prolonged exposure through inhalation.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 62 Possible risk of impaired fertility.

R 65 Harmful: may cause lung damage if swallowed.

R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:

S 9 Keep container in a well-ventilated place.

S 16 Keep away from sources of ignition - No smoking.

S 29 Do not empty into drains.

S 33 Take precautionary measures against static discharges.

S 36/37 Wear suitable protective clothing and gloves.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

WGK (Water Danger/Protection)

CAS# 110-54-3: 1

Canada

CAS# 110-54-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: B2, D2B

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

CAS# 110-54-3 is listed on Canada's Ingredient Disclosure List

Section 16 - Other Information

MSDS Creation Date: 6/03/1999

Revision #10 Date 8/24/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.