Fisher Scientific

Material Safety Data Sheet

Creation Date 27-Jul-2012 **Revision Date** 31-Jan-2013 **Revision Number** 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name n-Hexane

Cat No. H306-1; H306-4; H306-4LC; H306-SK4, H306-RS200

Synonyms Hexane; Hex (OPTIMA/ACS)

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Extremely flammable liquid and vapor. Inhalation may cause central nervous system effects. Irritating to eyes and skin. May cause irritation of respiratory tract. Aspiration hazard if swallowed - can enter lungs and cause damage. Danger of serious damage to health by prolonged exposure. Possible risk of impaired fertility. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance Colorless **Physical State** Liquid **Odor** Petroleum distillates

Target Organs Skin, Respiratory system, Eyes, Central nervous system (CNS), Heart, Blood, Liver, Reproductive System

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes Irritating to eyes.
Skin Irritating to skin. May be harmful in contact with skin.
Inhalation Inhalation may cause central nervous system effects. May cause irritation of respiratory tract. May be harmful if inhaled.
Ingestion Aspiration hazard. May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects None known

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system disorders. Preexisting eye disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Hexane	110-54-3	> 95
2-Methylpentane	107-83-5	< 2.5
3-Methylpentane	96-14-0	< 1

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point -22°C / -7.6°F

Method - No information available.

Autoignition Temperature 223°C / 433.4°F

Explosion Limits
Upper 7.5 vol %
Lower 1.1 vol %

Suitable Extinguishing Media CO_2, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.

Unsuitable Extinguishing Media Water may be ineffective, This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.

Specific Hazards Arising from the Chemical
Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health** 1 **Flammability** 3 **Instability** 0 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hexane	TWA: 50 ppm STEL: 1000 ppm Skin	(Vacated) TWA: 50 ppm (Vacated) TWA: 180 mg/m³ (Vacated) STEL: 1000 ppm (Vacated) STEL: 3600 mg/m³ TWA: 500 ppm TWA: 1800 mg/m³	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m³ Ceiling: 510 ppm Ceiling: 1800 mg/m³
2-Methylpentane	TWA: 500 ppm STEL: 1000 ppm	(Vacated) TWA: 500 ppm (Vacated) TWA: 1800 mg/m³ (Vacated) STEL: 1000 ppm (Vacated) STEL: 3600 mg/m³	TWA: 100 ppm TWA: 350 mg/m³ Ceiling: 510 ppm Ceiling: 1800 mg/m³
3-Methylpentane	TWA: 500 ppm STEL: 1000 ppm	(Vacated) TWA: 500 ppm (Vacated) TWA: 1800 mg/m³ (Vacated) STEL: 1000 ppm (Vacated) STEL: 3600 mg/m³	TWA: 100 ppm TWA: 350 mg/m³ Ceiling: 510 ppm Ceiling: 1800 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Hexane	TWA: 50 ppm TWA: 176 mg/m³ STEL: 1000 ppm STEL: 3500 mg/m³ Skin	TWA: 50 ppm TWA: 176 mg/m³ STEL: 1000 ppm STEL: 3500 mg/m³	TWA: 50 ppm STEL: 1000 ppm Skin
2-Methylpentane	TWA: 500 ppm TWA: 1760 mg/m³ STEL: 1000 ppm STEL: 3500 mg/m³	TWA: 500 ppm TWA: 1760 mg/m³ STEL: 1000 ppm STEL: 3500 mg/m³	TWA: 500 ppm STEL: 1000 ppm
3-Methylpentane	TWA: 500 ppm TWA: 1760 mg/m³ STEL: 1000 ppm STEL: 3500 mg/m³	TWA: 500 ppm TWA: 1760 mg/m³ STEL: 1000 ppm STEL: 3500 mg/m³	TWA: 500 ppm STEL: 1000 ppm

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
Odor	Petroleum distillates
Odor Threshold	No information available.
pH	No information available.
Vapor Pressure	160 mbar @ 20 °C
Vapor Density	2.97 (Air = 1.0)

9. PHYSICAL AND CHEMICAL PROPERTIES

Viscosity	0.31 mPa s at 20 °C
Boiling Point/Range	69°C / 156.2°F@ 760 mmHg
Melting Point/Range	-95°C / -139°F
Decomposition temperature	No information available.
Flash Point	-22°C / -7.6°F
Evaporation Rate	No information available.
Specific Gravity	0.659
Solubility	Insoluble in water
log Pow	No data available
Molecular Weight	86.18
Molecular Formula	C6 H14

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Heat, flames and sparks. Exposure to light.
Incompatible Materials	Strong oxidizing agents, Halogens
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2)
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions .	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hexane	25 g/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h

Irritation	Irritating to eyes and skin
Toxicologically Synergistic Products	No information available.

Chronic Toxicity

Carcinogenicity	There are no known carcinogenic chemicals in this product
Sensitization	No information available.
Mutagenic Effects	Mutagenic effects have occurred in experimental animals.
Reproductive Effects	Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects	Developmental effects have occurred in experimental animals.
Teratogenicity	Teratogenic effects have occurred in experimental animals..
Other Adverse Effects	Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.
Endocrine Disruptor Information	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hexane	Not listed	2.1-2.98 mg/L LC50 96 h	Not listed	EC50: 3.87 mg/L/48h

Persistence and Degradability	No information available
Bioaccumulation/ Accumulation	No information available
Mobility	.

Component	log Pow
Hexane	4.11

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT

UN-No	UN1208
Proper Shipping Name	Hexanes
Hazard Class	3
Packing Group	II

TDG

UN-No	UN1208
Proper Shipping Name	HEXANES
Hazard Class	3
Packing Group	II

IATA

14. TRANSPORT INFORMATION

UN-No UN1208
Proper Shipping Name Hexanes
Hazard Class 3
Packing Group II

IMDG/IMO

UN-No UN1208
Proper Shipping Name Hexanes
Hazard Class 3
Packing Group II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Hexane	X	X	-	203-777-6	-		X	X	X	X	X
2-Methylpentane	X	X	-	203-523-4	-		X	X	X	X	X
3-Methylpentane	X	X	-	202-481-4	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Hexane	110-54-3	> 95	1.0

SARA 311/312 Hazardous Categorization
Acute Health Hazard No

Chronic Health Hazard No
Fire Hazard Yes
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Water Act
Not applicable

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hexane	X		-

OSHA
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Hexane	5000 lb	-

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hexane	X	X	X	X	X
2-Methylpentane	X	X	X	-	-
3-Methylpentane	X	-	X	-	-

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

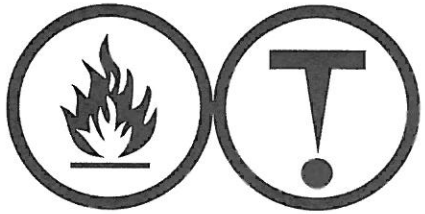
Other International Regulations

Mexico - Grade Serious risk, Grade 3

Canada

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

WHMIS Hazard Class
B2 Flammable liquid
D2A Very toxic materials
D2B Toxic materials



16. OTHER INFORMATION

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	27-Jul-2012
Print Date	31-Jan-2013
Revision Summary	"****", and red text indicates revision

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS