

**SAFETY DATA SHEET**

Creation Date 06-Nov-2009

Revision Date 02-May-2024

Revision Number 6

**1. Identification**

**Product Name** Petroleum ether 40/60

**Cat No. :** L14649

**CAS No** 64742-49-0  
**Synonyms** Ligroine

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

**Details of the supplier of the safety data sheet****Company**

Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757

**Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
**Emergency Number US:**001-201-796-7100 / **Europe:** +32 14 57 52 99  
**CHEMTREC** Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

**2. Hazard(s) identification****Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Aspiration Toxicity	Category 1

**Label Elements****Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor  
May be fatal if swallowed and enters airways

May cause drowsiness or dizziness  
Causes skin irritation  
Causes serious eye irritation



### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

#### Skin

If skin irritation occurs: Get medical advice/attention  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

#### Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
Do NOT induce vomiting

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Toxic to aquatic life with long lasting effects

WARNING. Reproductive Harm - <https://www.p65warnings.ca.gov/>.

### 3. Composition/Information on Ingredients

Component	CAS No	Weight %
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	<100
Hexane	110-54-3	-

### 4. First-aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. Risk of serious damage to the lungs (by aspiration).
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
<b>Most important symptoms and effects</b>	Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media</b>	Water may be ineffective, Do not use a solid water stream as it may scatter and spread fire
<b>Flash Point</b>	-45 °C / -49 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	230 °C / 446 °F
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	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. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### 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.

### NFPA

**Health**  
3

**Flammability**  
3

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

<b>Personal Precautions</b>	Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system.

**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** Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area. Incompatible Materials. Strong oxidizing agents.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limit established by the region specific regulatory bodies.

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Hexane	TWA: 50 ppm Skin	(Vacated) TWA: 50 ppm (Vacated) TWA: 180 mg/m <sup>3</sup> TWA: 500 ppm TWA: 1800 mg/m <sup>3</sup>	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m <sup>3</sup>	TWA: 50 ppm

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

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

### 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. Tight sealing safety goggles. Face protection shield.

**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.

**Recommended Filter type:** low boiling organic solvent. Type AX. Brown. conforming to EN371.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Petroleum distillates
Odor Threshold	No information available
pH	No information available
Melting Point/Range	No data available

<b>Boiling Point/Range</b>	40 - 70 °C / 104 - 158 °F
<b>Flash Point</b>	-45 °C / -49 °F
<b>Evaporation Rate</b>	13 (Butyl acetate = 1.0)
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
Upper	No data available
Lower	No data available
<b>Vapor Pressure</b>	23 hPa @ 20 °C
<b>Vapor Density</b>	>1 @ 101 kPa
<b>Specific Gravity</b>	0.65
<b>Solubility</b>	Insoluble in water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	230 °C / 446 °F
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	0.45 mm <sup>2</sup> /s at 25 °C (ASTM D445)

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
<b>Incompatible Materials</b>	Strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Vapor LC50** Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	LD50 > 5000 mg/kg ( Rat )	LD50 > 3160 mg/kg ( Rabbit )	LC50 = 73680 ppm ( Rat ) 4 h
Hexane	LD50 = 25 g/kg ( Rat )	LD50 = 3000 mg/kg ( Rabbit )	LC50 = 48000 ppm ( Rat ) 4 h

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** Irritating to eyes and skin

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen. The classification as a carcinogen need not apply if the full refining history is known and it can be shown that the substance from which it is produced is not a carcinogen. This note applies only to certain complex oil derived substances in Annex I.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
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Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	Not listed	Not listed	Not listed	Not listed	Not listed
Hexane	110-54-3	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** California Proposition 65. Product is or contains a chemical which is a known or suspected reproductive hazard.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Central nervous system (CNS)

**STOT - repeated exposure** None known

**Aspiration hazard** Category 1

**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	Not listed	LC50: = 8.41 mg/L, 96h semi-static, closed (Oncorhynchus mykiss)	Not listed	Not listed
Hexane	Not listed	LC50: 2.1 - 2.98 mg/L, 96h flow-through (Pimephales promelas)	Not listed	EC50: 3.87 mg/L/48h

**Persistence and Degradability** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its volatility.

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 UN1268  
 Proper Shipping Name Petroleum distillates, n.o.s.  
 Hazard Class 3  
 Packing Group II

**TDG**

<b>UN-No</b>	UN1268
<b>Proper Shipping Name</b>	Petroleum distillates, n.o.s.
<b>Hazard Class</b>	3
<b>Packing Group</b>	II

**IATA**

<b>UN-No</b>	UN1268
<b>Proper Shipping Name</b>	Petroleum distillates, n.o.s.
<b>Hazard Class</b>	3
<b>Packing Group</b>	II

**IMDG/IMO**

<b>UN-No</b>	UN1268
<b>Proper Shipping Name</b>	Petroleum distillates, n.o.s.
<b>Hazard Class</b>	3
<b>Packing Group</b>	II

## 15. Regulatory information

**United States of America Inventory**

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	X	ACTIVE	-
Hexane	110-54-3	X	ACTIVE	-

**Legend:**

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	X	-	265-151-9	X	-		X	X	KE-25623
Hexane	110-54-3	X	-	203-777-6	X	X	X	X	X	KE-18626

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting thresholds
Hexane	110-54-3	-	1.0 %	-

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

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

**OSHA - Occupational Safety and Health Administration** Not applicable

#### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Hexane	5000 lb	-	5000 lb 2270 kg

**California Proposition 65** This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Hexane	110-54-3	Male Reproductive	-	Developmental

**U.S. State Right-to-Know Regulations** Not applicable

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hexane	X	X	X	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** Severe risk, Grade 4

#### Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	-	Use restricted. See item 28. (see link for restriction details) Use restricted. See item 29. (see link for restriction details) Use restricted. See item 75.	-



			(see link for restriction details)	
Hexane	110-54-3	-	Use restricted. See item 75. (see link for restriction details)	-

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	Listed	Not applicable	Not applicable	Not applicable
Hexane	110-54-3	Listed	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane)	64742-49-0	Not applicable	Not applicable	Not applicable	Not applicable
Hexane	110-54-3	Not applicable	Not applicable	Not applicable	Annex I - Y42

## 16. Other information

**Prepared By** Health, Safety and Environmental Department  
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**Creation Date** 06-Nov-2009  
**Revision Date** 02-May-2024  
**Print Date** 02-May-2024  
**Revision Summary** New emergency telephone response service provider.

**Disclaimer**

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**