



SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 04/10/2014

Version 2.0

SECTION 1. Identification

Product identifier

Product number	104391
Product name	n-Hexane for liquid chromatography LiChrosolv®
CAS-No.	110-54-3

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis, Analytical and preparative chromatography
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-751-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Reproductive toxicity, Category 2, H361f
Specific target organ systemic toxicity - repeated exposure, Category 2, H373
Aspiration hazard, Category 1, H304
Skin irritation, Category 2, H315
Specific target organ systemic toxicity - single exposure, Category 3, H336
Chronic aquatic toxicity, Category 2, H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Danger

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Hazard Statements

H225 Highly flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.
P273 Avoid release to the environment.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P331 Do NOT induce vomiting.
P403 + P235 Store in a well-ventilated place. Keep cool.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$\text{CH}_3(\text{CH}_2)_4\text{CH}_3$	C_6H_{14} (Hill)
Molar mass	86.18 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

n-Hexane (>= 90 % - <= 100 %)

110-54-3

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Consult a physician.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

Eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

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Ingestion

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Drowsiness, narcosis, Nausea, drowsiness, Tiredness, CNS disorders, paralysis symptoms

Risk of corneal clouding.

It generally applies for aliphatic hydrocarbons with 6 - 18 carbon atoms that they may cause pneumonia, in some cases also pulmonary oedema, upon direct inhalation, i.e. in conditions that can occur only in very special circumstances (nebulizations, spraying, inhalation of aerosols and similar). After absorption of very large quantities: narcosis.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Remove container from danger zone and cool with water.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols.

Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains. Risk of explosion.

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Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Storage temperature: no restrictions.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>n-Hexane 110-54-3</i>			
ACGIH	Time Weighted Average (TWA): Skin designation:	50 ppm	Can be absorbed through the skin.
NIOSH/GUIDE	Recommended exposure limit (REL):	50 ppm 180 mg/m ³	
OSHA_TRANS	PEL:	500 ppm 1,800 mg/m ³	
Z1A	Time Weighted Average (TWA):	50 ppm 180 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

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Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Flame retardant antistatic protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	benzine-like
Odor Threshold	No information available.
pH	not applicable
Melting point	-94.3 °C
Boiling point/boiling range	156 °F (69 °C) at 1,013 hPa
Flash point	-8 °F (-22 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	1.0 %(V)
Upper explosion limit	8.1 %(V)
Vapor pressure	160 hPa at 68 °F (20 °C)
Relative vapor density	2.79
Density	0.66 g/cm ³ at 68 °F (20 °C)

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Relative density	No information available.
Water solubility	0.0095 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 4.11 (calculated) (Lit.) Potential bioaccumulation
Autoignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	0.326 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	464 °F (240 °C) Method: DIN 51794
Viscosity, kinematic	0.50 mm ² /s at 68 °F (20 °C)

SECTION 10. Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Risk of explosion with:

Strong oxidizing agents

Conditions to avoid

Warming.

Incompatible materials

rubber, various plastics

Hazardous decomposition products

no information available

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SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Eyes

Skin

Respiratory system

Central nervous system

Peripheral nervous system

Acute oral toxicity

LD50 rat: 25,000 mg/kg (RTECS)

Symptoms: Nausea

Acute inhalation toxicity

LC50 rat: 171.6 mg/l; 4 h (RTECS)

Symptoms: drowsiness, Drowsiness, Irritation symptoms in the respiratory tract.

Acute dermal toxicity

LD50 rabbit: > 2,000 mg/kg

(External MSDS)

absorption

Skin irritation

Causes skin irritation.

Eye irritation

Risk of corneal clouding.

Genotoxicity in vivo

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(National Toxicology Program)

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(National Toxicology Program)

CMR effects

Reproductive toxicity:

Suspected of damaging fertility.

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Specific target organ systemic toxicity - single exposure

Target Organs: Central nervous system
May cause drowsiness or dizziness.

Specific target organ systemic toxicity - repeated exposure

Target Organs: Central nervous system
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After absorption:

Tiredness, narcosis

After long-term exposure to the chemical:

CNS disorders, paralysis symptoms

It generally applies for aliphatic hydrocarbons with 6 - 18 carbon atoms that they may cause pneumonia, in some cases also pulmonary oedema, upon direct inhalation, i.e. in conditions that can occur only in very special circumstances (nebulizations, spraying, inhalation of aerosols and similar). After absorption of very large quantities: narcosis.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 Pimephales promelas (fathead minnow): 2.5 mg/l; 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 2.1 mg/l; 48 h (Lit.)

Persistence and degradability

No information available.

Bioaccumulative potential

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Partition coefficient: n-octanol/water

log Pow: 4.11

(calculated)

(Lit.) Potential bioaccumulation

Mobility in soil

No information available.

Other adverse effects

Henry constant

183000 Pa*m³/mol

(HSDB) Distribution preferentially in air.

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1208
Proper shipping name	HEXANES
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1208
Proper shipping name	HEXANES
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1208
Proper shipping name	HEXANES
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes

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EmS

F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Skin irritant
Reproductive hazard
Target organ effects
Eye irritant
Respiratory irritant

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

n-Hexane	110-54-3	100 %
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SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

n-Hexane

Pennsylvania Right To Know

Ingredients

n-Hexane

New Jersey Right To Know

Ingredients

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n-Hexane

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 04/10/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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