



SAFETY DATA SHEET

n-Hexane

MSDS No. : n-Hexane-2015

SECTION 1: Product and company Identification

1.1 Product Identifier

Product Name: n-Hexane

Synonyms: Hexyl hydride, dipropyl

Chemical Family: Aliphatic Hydrocarbon

1.2 Product Use

Hexanes is used in the formulation of glues for shoes, leather products, and roofing. This product is also used to extract cooking oils from seeds, for cleansing and degreasing a variety of items, and in textile manufacturing

1.3 Detail of the supplier of the safety data sheet

Manufacture / Supplier / Importer: Tabriz Oil Refining Company
5 Tabriz – Azarshar Road
Tabriz,
East Azerbaijan,
I.R Iran.
Postal Cod: 5197131111
www.tabrizrefinery.co.ir

Contact person: General Information
+98-4121148305
info@tbzrefinery.co.ir

Emergency telephone number: +98- 4121149117-118

SECTION 2: Hazard Identification

Danger:

Extremely flammable liquid and vapor.

Vapor may cause flash fire.

Breathing vapors may cause drowsiness and dizziness.

Causes eye, skin, and respiratory tract irritation.

May be harmful, if absorbed through the skin.

Aspiration hazard if swallowed.

Can enter lungs and cause damage.

Long-term exposure may cause damage to the nervous system of the extremities.



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Possible risk of impaired fertility.
Dangerous for the environment.

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. There have been no reports of skin sensitization in people occupationally exposed to n-hexane. Skin sensitization was not observed in a maximization test using 25 volunteers.

Ingestion: May cause irritation to the digestive tract with nausea, vomiting, and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which may lead to death. May cause central nervous system depression.

Inhalation:

Causes irritation to the respiratory tract. Exposure produces central nervous system depression. Vapors may cause dizziness or suffocation. Hexane vapor concentration can become so high that oxygen is displaced, especially in confined spaces.

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.



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SECTION 3: Composition / Information on Ingredients

CAS No.	Chemical Name	Percent
110-54-3	n-Hexane	25-60 wt.%
110-82-7	Cyclohexane	Max. 0.5 wt.%
	Other Isomers	Balance

SECTION 4: First aid measures

Eyes:

Flush eyes with plenty of water for 15 minutes, occasionally lifting upper and lower eyelids. Get medical aid at once.

Skin:

Flush skin with plenty of water for 15 minutes. Remove contaminated clothing. Get medical aid at once.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Hexane may be aspirated. If vomiting occurs naturally, have victim lean forward. If victim is conscious, give 2-4 glasses of water. Get medical aid at once.

Inhalation:

Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Get medical aid at once.

Notes to Physician:

Treat symptomatically and supportively. For ingestion, the stomach should 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.



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SECTION 5: Fire fighting measures

General Information: Wear self-contained breathing apparatus and full protective gear. 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 vapors. Vapor may cause flash fire. Vapors are heavier than air and may travel to 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: carbon dioxide, dry chemical, or regular foam. Water may be ineffective because it will not cool material below its flash point. For tank, rail car or tank truck, evacuation radius (800 meters or 1/2 mile)

Auto ignition Temperature: Not available

Flash Point: Not available

Explosion Limits: Not available

SECTION 6: Accidental release measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (vermiculite, sand, earth) and place in suitable container for disposal. Clean up spills immediately. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal – caution, flammable vapors may accumulate in closed containers. Remove sources of ignition and heat. Avoid runoff into sewers and ditches. Provide ventilation and use non-sparking tools and equipment. A vapor suppressing foam may be used to reduce vapors. Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Carefully contain and stop the source of the spill, if safe to do so.

SECTION 7: Handling and storage

Handling: Wash thoroughly after handling. Remove contaminated clothing. Ground and bond containers when dispensing. Keep container tightly closed.



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Keep away from heat and flames and other ignition sources. Avoid breathing vapors. Use with adequate ventilation. Empty containers retain product residue and can be dangerous.

Storage: Store in cool, dry, well ventilated area away from incompatible materials. Keep away from sources of ignition and oxidizing materials. Keep in a bonded area. Keep / store only in original container

Other precautions: Provide instruction and training for operators. Use personal protective as required. Avoid contact with skin, eyes and clothes. No smoking. Take any precaution to avoid mixing with incompatible materials.

NOTE: In case of using non-metallic (non- conductive) container such as PE, manufacture’s advice taking is essential.

SECTION 8: Personal protection / Exposure Control

Engineering Controls: Use with adequate general ventilation or local explosion-proof ventilation to keep airborne levels within acceptable limits. An eye wash fountain and safety shower should be in the immediate work area.

Chemical Name	ACGIH	NIOSH	OSHA
n-Hexane	50 ppm TWA; Skinpotential significant contribution to overall exposure by the cutaneous route	50 ppm TWA; 180 mg/m3 TWA 1100 ppm IDLH	500 ppm TWA 1800 mg/m3 TWA
Cyclohexane	300 ppm TWA	Not available	300 ppm TWA

Personal Protective Equipment:

Eyes: Wear chemical splash goggles

Skin: Wear appropriate gloves to protect hands.

Clothing: Wear proper clothing and safety shoes to protect skin.

Respirators: Follow OSHA respirator regulations found in 29 CFR 1910.134. Use NIOSH/MSHA approved respirator whenever workplace conditions are exceeded.



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SECTION 9: Physical and Chemical Properties

Physical State: Liquid
Color: Min. 25 (Saybolt)
Odor: Merchantable
Density: Report
95% Distillation @: 68 C
5% Distillation @: 62 C
Total Sulfur (wt%): Trace
Aromatic content : Max. 3 vol.%
Odor threshold: Not available
Initial Boiling Point (IBP): Not available
Boiling Point (or range): Not available
pH: Not available
Vapor Pressure: Not available
Specific Gravity (air=1): Not available
Specific Gravity (water=1): Not available
Evaporation Rate: Not available
Viscosity: Not available
Freezing/Melting Point: Not available
Decomposition Temperature: Not available
Solubility in water: Not available
Molecular Formula: Not available
Molecular Weight: Not available
Evaporation rate: Not available
Vapor pressure: Not available
Partition coefficient: Not available
Auto – ignition temperature: Not available
Decomposition temperature: Not available
Explosive properties: Not available



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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, Halogens, Combustible Materials.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide.

Hazardous Polymerization: Not known to occur.

SECTION 11: Toxicological Information

LD50/LC50:

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 g/kg

Carcinogenicity:

Not listed by IARC, NTP, ACGIH, 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 have not 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 has been found. Fetotoxicity has been observed in the presence of maternal toxicity.

Reproductive:

Severe testicular damage has been observed in rats exposed to hexane at concentrations that have produced other significant toxicity. Although subneurotoxic doses of its principal toxic metabolite, 2,5-hexanedione, can induce progressive testicular toxicity in



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rats, there have been no reports of human sterility or other reproductive toxicity associated with n-hexane exposures.

Mutagenicity:

Positive results (chromosomal damage in the bone marrow cells) obtained for rats exposed by inhalation to n-hexane.

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.

SECTION 12: Ecological Information

Ecotoxicity:

No data available. Estimated BCF values = 2.24 and 2.89. These values suggest that hexane will show low bioconcentration in aquatic organisms. Estimate Koc value = 4.11. This product will show slight soil mobility and is expected to rapidly volatilize from moist surface soils.

Environmental:

Terrestrial: Volatilization and adsorption are expected to be the most important fate processes.

Aquatic: Photolysis or hydrolysis is not expected to be important. Atmospheric fate: Expected to exist entirely in the vapor phase in ambient air. Expected half-life: 2.8 days. Expected to biodegrade but not to bioconcentrate.

Physical:

No information available.

SECTION 13: Disposal Considerations
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Dispose of in accordance with Federal, State, and local regulations.

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SECTION 14: Transport Information

DOT number: UN 1208

UN proper shipping name: n-Hexane

Transport hazard class (es) : Class: 3 – flammable liquid Packing Group: II

Hazard identification number (kemler No.) : Not Available

Classification code: Not Available

ADR / RID Labels : 3-flammable liquid



SECTION 15: Regulatory Information

US Federal: Not available

US State: Not available

SECTION 16: Other Information

Risk Phrases: R 11 (Highly Flammable)

NFPA Rating (Scale 0-4) : Health Hazard (1), Fire Hazard (3), Reactivity Hazard (0), Special Hazard (non-sign)



Tabriz Oil Refining Company

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Safety Phrases:

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 9 (Keep container in a well-ventilated place)