

DECAHYDRONAPHTHALENE

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1. Product Identification

Synonyms: Naphthalene, decahydro; cis and trans-decahydronaphthalene practical; decahydronaphthalene anhydrous; DECALIN; DE-KALIN

CAS No.: 91-17-8

Molecular Weight: 138.25

Chemical Formula: C₁₀H₁₈

Product Codes: CHEM-610 and others.

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Decahydronaphthalene	91-17-8	97 - 100%	Yes
Naphthalene, 1,2,3,4-tetrahydro-	119-64-2	0 - 3% Yes	

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. ASPIRATION MAY CAUSE LUNG DAMAGE. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. FLAMMABLE LIQUID AND VAPOR.

SAF-T-DATA^(tm) Ratings

Health Rating: 1 - Slight

Flammability Rating: 2 - Moderate

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER.

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Exposure to high concentrations may cause numbness, nausea, headache, CNS depression and vomiting.

Ingestion: Harmful if swallowed. Direct aspiration into the lungs may cause chemical pneumonitis and may cause lung damage. Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

Skin Contact: Causes irritation to skin. Symptoms include redness, itching, and pain. May cause dermatitis.

Eye Contact: Causes irritation, redness, and pain. Contact may cause eye damage.

Chronic Exposure: Prolonged or repeated skin contact may produce a skin infection.

Aggravation of Pre-existing Conditions: The use of alcohol beverages may enhance the toxic effects of this substance.

4. First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Flash point: 58°C (136°F) CC

Autoignition temperature: 250°C (482°F)

Flammable limits in air % by volume: lel: 0.7; uel: 4.9

Flammable Liquid and Vapor!

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Sealed containers may rupture when heated. Contact with strong oxidizers may cause fire.

Sensitive to static discharge.

Fire Extinguishing Media:

Dry chemical, alcohol foam or carbon dioxide. Do not use a solid stream of water, since the stream will scatter and spread the fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-facepiece operated in the pressure demand or other positive pressure mode.

Vapors can flow along surfaces to distant ignition source and flash back.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and Storage

Keep packed under nitrogen. Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless liquid.

Odor:

Slight odor resembling methanol.

Solubility:

Insoluble in water.

Specific Gravity:

0.896

pH:

No information found.

% Volatiles by volume @ 21°C (70°F):

100

Boiling Point:

Trans: 187°C (369°F) cis: 196°C (384°F)

Melting Point:

Trans: -31°C (-23°F) cis: -43°C (135°F)

Vapor Density (Air=1):

4.76

Vapor Pressure (mm Hg):

Cis: 2.3

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Hygroscopic. Reacts violently with strong oxidizers. Potentially explosive peroxides can form on long-time storage in contact with air. Light and heat accelerate peroxide formation.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers.

Conditions to Avoid:

Heat, flame, ignition sources, incompatibles, light, and air.

11. Toxicological Information

Toxicological Data:

Oral rat LD50: 4170 mg/Kg Skin rabbit LD50: 5900 mg/Kg Inhalation rat LC50: 710 ppm/4H
Investigated as a tumorigen.

Ingredient	Cancer Lists		IARC Category
	NTP Carcinogen		
	Known	Anticipated	
Decahydronaphthalene (91-17-8)	No	No	None
Naphthalene, 1,2,3,4-tetrahydro- (119-64-2)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material may biodegrade to a moderate extent. When released to water, this material is expected to quickly evaporate. This material may bioaccumulate to some extent. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA-approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: DECAHYDRONAPHTHALENES

Hazard Class: 3

UN/NA: UN1147

Packing Group: III

International (Water, I.M.O.)

Proper Shipping Name: DECAHYDRONAPHTHALENES

Hazard Class: 3.3

UN/NA: UN1147

Packing Group: III

International (Air, I.C.A.O.)

Proper Shipping Name: DECAHYDRONAPHTHALENES

Hazard Class: 3.3

UN/NA: UN1147

Packing Group: III

15. Regulatory Information

Chemical Inventory Status - Part 1

Ingredient	TSCA	EC	Japan	Australia
Decahydronaphthalene (91-17-8)	Yes	Yes	Yes	Yes
Naphthalene, 1,2,3,4-tetrahydro- (119-64-2)	Yes	Yes	Yes	Yes

Chemical Inventory Status - Part 2

Ingredient	Canada	Korea	DSL	NDSL	Phil.
Decahydronaphthalene (91-17-8)	Yes	Yes	No	Yes	
Naphthalene, 1,2,3,4-tetrahydro- (119-64-2)	Yes	Yes	No	Yes	

Federal, State & International Regulations - Part 1

Ingredient	SARA 302	SARA 313	RQ	TPQ	List	Chemical Catg.
Decahydronaphthalene (91-17-8)	No	No	No	No	No	No
Naphthalene, 1,2,3,4-tetrahydro- (119-64-2)	No	No	No	No	No	No

Federal, State & International Regulations - Part 2

Ingredient	RCRA	TSCA	CERCLA	261.33	8(d)
Decahydronaphthalene (91-17-8)	No	No	No	No	No
Naphthalene, 1,2,3,4-tetrahydro- (119-64-2)	No	No	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No

Reactivity: No (Mixture / Liquid)

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 2 Flammability: 2 Reactivity: 0

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED OR INHALED. ASPIRATION MAY CAUSE LUNG DAMAGE. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. FLAMMABLE LIQUID AND VAPOR.

Label Precautions:

Avoid breathing vapor or mist.

Avoid contact with eyes, skin and clothing.

Keep container closed. Use only with adequate ventilation.

Wash thoroughly after handling. Keep away from heat, sparks and flame.

Label First Aid:

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent and Consumer Hobby.

Revision Information:

None

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