

NAPHTHALENE

MSDS Number: N0090 --- Effective Date: 02/25/99

1. Product Identification

Synonyms: Naphthene; mothballs; tar camphor; naphthaliin; white-tar

CAS No.: 91-20-3

Molecular Weight: 128.16

Chemical Formula: C₁₀H₈

Product Codes:

J.T. Baker: 2718

Mallinckrodt: 6348

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Naphthalene	91-20-3	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY CAUSE ALLERGIC SKIN REACTION. MAY AFFECT LIVER, KIDNEY, BLOOD AND CENTRAL NERVOUS SYSTEM. COMBUSTIBLE.

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 2 - Moderate

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Inhalation of dust or vapors can cause headache, nausea, vomiting, extensive sweating, and disorientation. The predominant reaction is delayed intravascular hemolysis with symptoms of anemia, fever, jaundice, and kidney or liver damage.

Ingestion:

Toxic. Can cause headache, profuse perspiration, listlessness, dark urine, nausea, vomiting and disorientation. Intravascular hemolysis may also occur with symptoms similar to those

noted for inhalation. Severe cases may produce coma with or without convulsions. Death may result from renal failure.

Skin Contact:

Can irritate the skin and, on prolonged contact, may cause rashes and allergy. "Sensitized" individuals may suffer a severe dermatitis.

Eye Contact:

Vapors and solid causes irritation, redness and pain. Very high exposures can damage the nerves of the eye.

Chronic Exposure:

Has led to cataract formation in eyes. May cause skin allergy.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin, blood or vascular disorders or impaired respiratory function may be more susceptible to the effects of the substance. Particularly susceptible individuals are found in the general population, most commonly in dark skinned races.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Wash skin with soap or mild detergent and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

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: 87C (189F) CC

Autoignition temperature: 526C (979F)

Combustible. May be ignited by heat, sparks or flame. May burn rapidly with flare-burning effect. Fire may produce irritating or poisonous gases.

Explosion:

Explosive limits, volume % in air: lel: 0.9; uel: 5.9. Above flashpoint, vapor-air mixtures are explosive within flammable limits noted above. Closed containers exposed to heat may explode. Contact with strong oxidizers may cause fire or explosion.

Fire Extinguishing Media:

Dry chemical, foam, water or carbon dioxide. Foam or direct water spray on molten naphthalene may cause extensive foaming. Molten naphthalene spatters in contact with water; apply water from as far a distance as possible.

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

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Keep away from moisture and oxidizers. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL):
10 ppm, 50 mg/m³.

- ACGIH Threshold Limit Value (TLV):

TWA= 10 ppm, 52 mg/m³

STEL= 15 ppm, 79 mg/m³.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. 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):

If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece 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 full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White crystals.

Odor:

Strong coal tar odor (moth balls).

Solubility:

Insoluble in water.

Specific Gravity:

1.2

pH:

No information found.

% Volatiles by volume @ 21C (70F):

No information found.

Boiling Point:

218C (424F)

Melting Point:

80C (176F)

Vapor Density (Air=1):

4.4

Vapor Pressure (mm Hg):

1 @ 53C (127F)

Evaporation Rate (BuAc=1):

< 1

10. Stability and Reactivity

Stability:

Stable at room temperature in sealed containers. Sublimes appreciably at temperatures above melting point.

Hazardous Decomposition Products:

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

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers, strong alkalis and strong mineral acids, mixtures of aluminum trichloride and benzoyl chloride. Reacts violently with chromic anhydride. Melted naphthalene will attack some forms of plastics, rubber, and coatings.

Conditions to Avoid:

Avoid heat, sparks, flames and other ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 490 mg/kg;

Inhalation rat LC50: 340 mg/m³, 1 hour;

Skin rabbit LD50: > 20 g/kg;

Irritation data: skin (open Draize) rabbit 495 mg, mild; eye (standard Draize) rabbit 100 mg, mild;

Investigated as a tumorigen, mutagen and reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Naphthalene (91-20-3)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released to water, this material is expected to quickly evaporate. When released into water, this material may biodegrade to a moderate extent. When released into the water, this material is expected to have a half-life between 1 and 10 days. 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. When released into the air, this material is expected to have a half-life of less than 1 day.

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: NAPHTHALENE, REFINED

Hazard Class: 4.1

UN/NA: UN1334

Packing Group: III

Information reported for product/size: 1KG

International (Water, I.M.O.)

Proper Shipping Name: NAPHTHALENE, REFINED

Hazard Class: 4.1

UN/NA: UN1334

Packing Group: III

Information reported for product/size: 1KG

International (Air, I.C.A.O.)**Proper Shipping Name:** NAPHTHALENE, REFINED**Hazard Class:** 4.1**UN/NA:** UN1334**Packing Group:** III**Information reported for product/size:** 1KG

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Naphthalene (91-20-3)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	DSL	--Canada-- NDSL	Phil.
Naphthalene (91-20-3)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302- RQ	TPQ	-----SARA 313----- List	Chemical Catg.
Naphthalene (91-20-3)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Naphthalene (91-20-3)	100	U165	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: 2Z**Poison Schedule:** S6**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. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY CAUSE ALLERGIC SKIN REACTION. MAY AFFECT LIVER, KIDNEY, BLOOD AND CENTRAL NERVOUS SYSTEM. COMBUSTIBLE.

Label Precautions:

Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeated contact with skin.
Avoid breathing dust.
Avoid breathing vapor.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep away from heat, sparks and flame.

Label First Aid:

In all cases call a physician. 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. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person.

Product Use:

Laboratory Reagent.