

naphthalene 91-20-3 MSDS

Section 1 - Chemical Product

MSDS Name:Naphthalene 98% Material Safety Data Sheet

Synonym:Coal tar camphor; Tar camphor; Naphthalin; White tar; Naphthene; Moth flakes: Moth balls

Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
91-20-3			

Hazard Symbols: XN N

Risk Phrases:

Section 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed. Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.Hygroscopic.

Potential Health Effects

Eye:

Naphthalene is an eye irritant. The vapor causes eye irritation at 15 ppm. Eye contact with the solid material may result in conjunctivitis, superficial injury to the cornea, diminished visual acuity, and other effects. It may cause cataracts.

Skin:

Causes mild skin irritation. May be absorbed through the skin in harmful amounts. Incidence of skin hypersensitivity is not widespread in the general population &, based on the long history of use of naphthalene as a consumer product, this effect is mostly confined to industrial exposure where coal tar contamination may be present.

Ingestion:

Harmful if swallowed. May cause liver and kidney damage. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, and death. May cause severe digestive tract irritation with abdominal pain, nausea, vomiting and diarrhea. Ingestion of large quantities may cause severe hemolytic anemia and hemoglobinuria.

Inhalation:

Harmful if inhaled. Causes respiratory tract irritation. Readily absorbed when inhaled. Material volatilizes at room temperature.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage. May cause anemia and other blood cell abnormalities. Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen.

Effects may be delayed. Chronic exposure may cause lung damage.

Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause corneal injury, optical neuritis, blurred vision, and possible cataract formation. Chronic inhalation, skin absorption or ingestion of naphthalene have caused severe hemolytic anemia.

Section 4 - FIRST AID MEASURES

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin:

In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Individuals with a glucose-6-phosphate dehydrogenase deficiency are hypersensitive to the effects of naphthalene.

Section 5 - FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool.

Flammable solid. Dusts may be an explosion hazard if mixed with air at critical proportions and in the presence of an ignition source.

Volatile solid that gives off flammable vapors when heated.

Extinguishing Media:

Water or foam may cause frothing. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 6 - ACCIDENTAL RELEASE MEASURES

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

Spills/Leaks:

Avoid runoff into storm sewers and ditches which lead to waterways.

Clean up spills immediately, observing precautions in the Protective Equipment section. Scoop up with a nonsparking tool, then place into a suitable container for disposal. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - HANDLING and STORAGE

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid breathing dust, vapor, mist, or gas. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation.

Storage:

Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Storage under a nitrogen blanket has been recommended. Store protected from moisture. Separate from oxidizing materials.

Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment Eyes: Wear chemical goggles.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Color: white

Odor: Distinctive mothball-like.

pH: Not available.

Vapor Pressure: 0.05 mm Hg @ 20 deg C

Viscosity: Not available.

Boiling Point: 218 deg C

Freezing/Melting Point: 79 - 82 deg C

Autoignition Temperature: 526 deg C (978.80 deg F)

Flash Point: 78 deg C (172.40 deg F)

Explosion Limits, lower: 0.90 vol %

Explosion Limits, upper: 5.90 vol %

Decomposition Temperature: 540 deg C

Solubility in water: Insoluble.

Specific Gravity/Density: 0.9900g/cm³

Molecular Formula: C₁₀H₈

Molecular Weight: 128.17

Section 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:

Ignition sources, dust generation, moisture, excess heat, exposure to moist air or water, steam.

Incompatibilities with Other Materials:

Strong oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 91-20-3: QJ0525000 LD50/LC50:

CAS# 91-20-3: Draize test, rabbit, eye: 100 mg Mild; Inhalation, rat: LC50 = >340 mg/m³/1H; Oral, mouse: LD50 = 316 mg/kg; Oral, rat: LD50 = 490 mg/kg; Skin, rabbit: LD50 = >20 gm/kg; Skin, rat: LD50 = >2500 mg/kg.

Carcinogenicity:

Naphthalene - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Other:

See actual entry in RTECS for complete information.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Rainbow trout: LC50 = 1.60 mg/L; 96 Hr; Flow-through at 15 CFish: Fathead Minnow: LC50 = 6.14 mg/L; 96 Hr; Flow-through at 24.5 CWater flea Daphnia: EC50 = 2.16-8.60 mg/L; 48 Hr;

Unspecified Bacteria: Phytobacterium phosphoreum: EC50 = 0.93 mg/L; 30 min; Microtox test

Fish: Pink salmon: LC50 = 1.24 mg/L; 96 Hr; (fry) Static bioassay at 12°C Releases into water are lost due to volatilization, photolysis, adsorption, and biodegradation. The principal loss processes will depend on local conditions but half-lives can be expected to range from a couple of days to a few months. When adsorbed to sediment, biodegradation occurs much more Other Harmful to aquatic life in very low concentrations.

Section 13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - TRANSPORT INFORMATION

IATA

Shipping Name: NAPHTHALENE, REFINED

Hazard Class: 4.1

UN Number: 1334

Packing Group: III

IMO

Shipping Name: NAPHTHALENE, REFINED

Hazard Class: 4.1

UN Number: 1334

Packing Group: III

RID/ADR

Shipping Name: NAPHTHALENE, REFINED

Hazard Class: 4.1
UN Number: 1334
Packing group: III

Section 15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N

Risk Phrases:

R 22 Harmful if swallowed.

R 50/53 Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 36/37 Wear suitable protective clothing and gloves.

S 60 This material and/or its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)

CAS# 91-20-3: 2

United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada

None of the chemicals in this product are listed on the DSL/NDSL list.

CAS# 91-20-3 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 91-20-3: OEL-ARAB Republic of Egypt:TWA 10 ppm (50 mg/m³)

OEL-AUSTRALIA:TWA 10 ppm (50 mg/m³);STEL 15 ppm (75 mg/m³)

OEL-BELGIUM:TWA 10 ppm (52 mg/m³);STEL 15 ppm (79 mg/m³)

OEL-DENMARK:TWA 10 ppm (50 mg/m³)

OEL-FINLAND:TWA 10 ppm (50 mg/m³);STEL 20 ppm (10 mg/m³)

OEL-FRANCE:TWA 10 ppm (50 mg/m³)

OEL-GERMANY:TWA 10 ppm (50 mg/m³)

OEL-HUNGARY:TWA 40 mg/m³;STEL 80 mg/m³;Skin

OEL-THE NETHERLANDS:TWA 10 ppm (50 mg/m³)

OEL-THE PHILIPPINES:TWA 10 ppm (50 mg/m³)

OEL-POLAND:TWA 20 mg/m³

OEL-RUSSIA:STEL 20 mg/m³

OEL-SWITZERLAND:TWA 10 ppm (50 mg/m³)

OEL-UNITED KINGDOM:TWA 10 ppm (50 mg/m³);STEL 15 ppm (75 mg/m³)

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL

TSCA

CAS# 91-20-3 is not listed on the TSCA inventory.

It is for research and development use only.

SECTION 16 - ADDITIONAL INFORMATION

N/A