NAPHTHALENE

SECTION 1: PRODUCT IDENTIFICATION

Product Name: NAPHTHALENE
Product Code: 2379.
CAS#: 91-20-3
Synonym: Naphthalin; Naphthaline; 1-Naphthalene; Camphor.
Chemical Name: 1-Naphthalene.
Chemical Formula: $C_{10}H_8$
Formula Weight: 128.17.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:
Name: NAPHTHALENE
Toxicological Data on Ingredients:
Flammable solids (Category 2), H228
Acute toxicity, Oral (Category 4), H302
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

SECTION 3: HAZARDS IDENTIFICATION

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Slightly hazardous in case of skin contact (permeator), of inhalation. Severe over-exposure can result in death.
Potential Chronic Health Effects:
Carcinogenic Effects: Not available
Mutagenic Effects: Not available
Teratogenic Effects: Not available
Developmental Toxicity: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

SECTION 4: FIRST AID MEASURES

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact: After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention.
Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation: If inhaled, allow the victim to rest in a well-ventilated area. Seek immediate medical attention.
Serious Inhalation: Not available
Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available

SECTION 5: FIRE FIGHTING MEASURES

Flammability of the Product: Flammable.
Auto-Ignition Temperature: 526°C (978.8°F).
Flash Points: CLOSED CUP: 79°C (174.2°F). OPEN CUP: 88°C (190.4° F).
Flammable Limits: LOWER: 0.9% UPPER: 5.9%.
Products of Combustion: Carbon Oxides.
Fire Hazards in Presence of Various Substances: Flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of open flames and sparks.
Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards: May form explosive mixtures with air. Naphthalene can accumulate static electrical charges and may ignite its own vapors.
Special Remarks on Explosion Hazards: Naphthalene can react explosively with dinitrogen pentaoxide and chromic anhydride..
Naphthalene dust and vapors may form explosive mixtures when mixed with air due to its flammability properties.
Special Remarks on Explosion Hazards: Not available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system

SECTION 7: HANDLING AND STORAGE

Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.
Storage: Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection: Safety glasses, Lab coat, Dust respirator, Gloves. Be sure to use an approved/certified respirator or equivalent.
Personal Protection in Case of a Large Spill: Splash goggles, Full suit, Dust respirator, Boots, Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits: Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance	:	Solid, crystalline.
Odor	:	Not available
Taste	:	Not available
Color	:	Not available
Molecular Weight	:	128.17
PH	:	Not available
Boiling Point	:	Not available
Melting Point	:	79 - 81ºC.
Critical Temperature	:	Not available
Specific Gravity	:	Not available
Vapor Pressure	:	Not available
Vapor Density	:	Not available
Volatility	:	Not available
Odor Threshold	:	Not available
Water/Oil Dist. Coeff.	:	Not available
Ionicity (in Water)	:	Not available
Dispersion Properties	:	Not available
Solubility	:	Easily soluble in diethyl ether. Partially soluble in methanol. Very slightly soluble in cold water, hot water.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Heat, ingniton sources (flames, sparks, static), incompatible materials.
Incompatibility with various substances: Reactive with oxidizing agents.
Corrosivity: Non-corrosive in presence of glass.
Special Remarks on Reactivity: It will react violently wity chromic anhydride, aluminum chloride + benzoyl chloride. Naphthalene will volatize at room temperature and emit a moth ball odor.
Special Remarks on Corrosivity: May attack some forms of rubber and plastic.
Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Toxicity to Animals:
LD50: 316 mg/kg [Mouse]; >2500 mg/kg [Rat];
LC50: 340 1 hours [Rat].
Chronic Effects on Humans: Classified 2B (Possible for human.) by IARC. A4 (Not classifiable for human) by ACGIH. May cause damage to the following organs: blood, kidneys, liver, skin.
Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion. Slightly hazardous in case of skin contact (permeator), of inhalation.
Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans: May affect genetic material (mutagenic). May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. May cause cancer based on animal test data.
Special Remarks on other Toxic Effects on Humans: Causes skin irritation. It can be absorbed through the skin and cause systemic effects. Causes eye irritation. Direct contact may cause conjunctivitis, corneal damage. Inhalation of vapor or dust may produce respiratory tract irritation and signs and symptoms similar due to ingestion or dermal absorption. Harmful if swallowed. It can cause flushing, nausea, abdominal cramps, vomiting, diarrhea, malaise. It can affect the blood (anemia, hemolysis), liver (hepatomegaly, hepatic necrosis, liver damage), kidneys (dysuria, albuminuria, oliguria, hemoglobinuria, hematuria, acute renal failure, kidney damage), behavior/central nervous

system (CNS depression, headache, lethargy, somnolence, restlessness, convulsions, coma), cardiovascular system(hypotension, tachycardia). It can induce methemoglobinemia. It may cause hyperkalemia, metabolic acidosis, visual changes, skin tingling. Prolonged or repeated ingestion may affect the blood (hemolytic anemia), spleen (spleenomegaly), liver (jaundice, liver damage), behavior/central nervous system (tremors, restlessness, hallucinations, extreme apprehension and cause cataracts

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:
LC50: 1.6 mg/l 96 hours [Trout].
BOD5 and COD: Not available.
Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14: TRANSPORT INFORMATION

DOT Classification: CLASS 4.1: Flammable solid.
Identification: Naphthalene, refined UNNA: 1334 PG: III.
Special Provisions for Transport: Not Available.

SECTION 15: REGULATORY INFORMATION

Federal and State Regulations: TSCA 8(b) inventory:
Naphthalene. **Other Regulations:** Not available. **Other Classifications:**
WHMIS (Canada): Not controlled under WHMIS (Canada).
DSCL (EEC): R22- Harmful if swallowed. R40- Limited evidence of a carcinogenic effect. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
HMIS (U.S.A.):
Health Hazard: 2
Fire Hazard: 2
Reactivity: 0
Personal Protection: E
National Fire Protection Association (U.S.A.):
Health: 2
Flammability: 2
Reactivity: 0
Specific hazard:
Protective Equipment: Gloves, Lab coat, Safety glasses, Dust respirator - be sure to use an approved/certified respirator or equivalent.

SECTION 16: OTHER INFORMATION

References:
H228 Flammable solid.
H302 Harmful if swallowed.

H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Other Special Considerations: Not available.

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