

Material Safety Data Sheet

Naphthalene, Scintillation Grade, 99+%

ACC# 01080

Section 1 - Chemical Product and Company Identification

MSDS Name: Naphthalene, Scintillation Grade, 99+%

Catalog Numbers: AC180200000, AC180200010, AC180200050, AC180202500

Synonyms: Coal tar camphor, Naphthalin, Naphthalinium, Naphthene; Albocarbon; Moth Balls

Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
91-20-3	Naphthalene	>99	202-049-5

Hazard Symbols: XN

Risk Phrases: 20/21/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white. Flash Point: 174 deg F. **Warning!** May cause allergic skin reaction. May cause liver and kidney damage. May cause blood abnormalities. Hygroscopic. Harmful if swallowed. May be fatal if inhaled. Causes eye and skin irritation. Causes digestive and respiratory tract irritation. May cause fetal effects based upon animal studies. Flammable solid. May be harmful if absorbed through the skin.

Target Organs: Blood, kidneys, central nervous system, liver, eyes, skin.

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. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

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: May be fatal if inhaled. Causes respiratory tract irritation. May cause salivation, nausea, vomiting, abdominal pain, fever, and labored breathing. 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: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. 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: Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

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. Use water spray to keep fire-exposed containers cool. Dust can be an explosion hazard when exposed to heat or flame. May be ignited by friction, heat, sparks, or flame. May re-ignite after fire is extinguished. Containers may explode when heated.

Extinguishing Media: Use dry sand or earth to smother fire. Water or foam may cause frothing. Cool containers with flooding quantities of water until well after fire is out. Use 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.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Do not breathe dust, vapor, mist, or gas. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood.

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. 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 only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Naphthalene	10 ppm TWA; 15 ppm STEL; skin - potential for cutaneous absorption	10 ppm TWA; 50 mg/m ³ TWA 250 ppm IDLH	10 ppm TWA; 50 mg/m ³ TWA

OSHA Vacated PELs: Naphthalene: 10 ppm TWA; 50 mg/m³ TWA; 15 ppm STEL; 75 mg/m³ STEL

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: Crystalline powder

Appearance: white

Odor: Distinctive mothball-like.

pH: Not available.

Vapor Pressure: 0.054 mm Hg @20C

Vapor Density: 4.42 (air=1)

Evaporation Rate: <1.0 (butyl acetate=1)

Viscosity: Not available.

Boiling Point: 218 deg C

Freezing/Melting Point: 80 - 82 deg C

Autoignition Temperature: 979 deg F (526.11 deg C)

Flash Point: 174 deg F (78.89 deg C)

Decomposition Temperature: 540 deg C

NFPA Rating: (estimated) Health: 2; Flammability: 2; Reactivity: 0

Explosion Limits, Lower: 0.90 vol %

Upper: 5.90 vol %

Solubility: insoluble

Specific Gravity/Density: 0.9970g/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. Volatile in steam.

Conditions to Avoid: Incompatible materials, ignition sources, dust generation, moisture, excess heat, exposure to moist air or water, steam.

Incompatibilities with Other Materials: Oxidizing agents, chromium trioxide, chromic anhydride, dinitrogen pentoxide, mineral acids, moisture, strong alkalies, aluminum chloride + benzoyl chloride.

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 = 533 mg/kg;

Oral, rat: LD50 = 490 mg/kg;

Skin, rabbit: LD50 = >20 gm/kg;

Skin, rat: LD50 = >2500 mg/kg;

Carcinogenicity:

CAS# 91-20-3:

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Epidemiology: Subcutaneous, rat: TDLo = 3500 mg/kg/12W-I (Tumorigenic - eq uivocal tumorigenic agent by RTECS criteria - Blood - lympha, including Hodgkin's disease and Reproductive - Tumorigenic effects - uterine tumors).; Inhalation, mouse: TCLo = 30 ppm/6H/2Y-I (Tumorigenic - neoplastic by RTECS criteria - Lungs, Thorax, or Respiration - tumors).

Teratogenicity: Naphthalene and its metabolites have been reported to cross the human placenta in amounts sufficient to cause fetal toxicity. Oral, rat: TDLo = 4500 mg/kg (female 6-15 day(s) after conception) Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus) and Specific Developmental Abnormalities - other developmental abnormalities.; Intraperitoneal, rat: TDLo = 5925 mg/kg (female 1-15 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system and cardiovascular (circulatory) system.

Reproductive Effects: No information available.

Neurotoxicity: No information available.

Mutagenicity: Micronucleus Test: Human, Lymphocyte = 30 mg/L.; Cytogenetic Analysis: Hamster, Ovary = 30 mg/L.; Sister Chromatid Exchange: Hamster, Ovary = 15 mg/L.

Other Studies: Standard Draize Test: Administration onto the skin (rabbit) = 495 mg (Mild).; Standard Draize Test: Administration into the eye (rabbit) = 100 mg (Mild).

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 1.60 mg/L; 96 Hr; Flow-through at 15 C Fathead Minnow: LC50 = 6.14 mg/L; 96 Hr; Flow-through at 24.5 C flea Daphnia: EC50 = 2.16-8.60 mg/L; 48 Hr; Unspecified: Phytobacterium phosphoreum: EC50 = 0.93 mg/L; 30 min; Microtox test 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 rapidly than in the overlying water column. When spilled on land, naphthalene is adsorbed moderately to soil and undergoes biodegradation. However, in some cases it will appear in the groundwater where biodegradation still may occur if conditions are aerobic.

Environmental: Bioconcentration occurs to a moderate extent but since depuration and metabolism readily proceed in aquatic organisms, this is a short term problem. transport and disposal of fuel oil, coal tar, etc. In the atmosphere, naphthalene rapidly photodegrades (half-life 3-8 hr). Naphthalene shows low biological oxygen demand and is expected to cause little O₂ depletion in aquatic systems.

Physical: Log P (oct) = 3.01 - 3.59

Other: Harmful to aquatic life in very low concentrations.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: CAS# 91-20-3: waste number U165.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	NAPHTHALENE, REFINED				NAPHTHALENE
Hazard Class:	4.1				4.1(9.2)
UN Number:	UN1334				UN1334
Packing Group:	III				III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 91-20-3 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 91-20-3: Effective Date: June 1, 1987; Sunset Date: June 1, 1997

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 91-20-3: final RQ = 100 pounds (45.4 kg)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 91-20-3: acute, chronic, flammable.

Section 313

This material contains Naphthalene (CAS# 91-20-3, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 91-20-3 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 91-20-3 is listed as a Hazardous Substance under the CWA. CAS# 91-20-3 is listed as a Priority Pollutant under the Clean Water Act. CAS# 91-20-3 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 91-20-3 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

Safety Phrases:

S 36/37 Wear suitable protective clothing and gloves.

WGK (Water Danger/Protection)

CAS# 91-20-3: 2

Canada

CAS# 91-20-3 is listed on Canada's DSL List. CAS# 91-20-3 is listed on Canada's DSL List.

This product has a WHMIS classification of B4, D1A, D2A.

CAS# 91-20-3 is 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:TW A 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:TW A 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

Section 16 - Additional Information

MSDS Creation Date: 5/14/1999**Revision #3 Date:** 10/10/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.