

Material Safety Data Sheet

Decahydronaphthalene, mixture of cis and trans, 98%

ACC# 96011

Section 1 - Chemical Product and Company Identification

MSDS Name: Decahydronaphthalene, mixture of cis and trans, 98%

Catalog Numbers: AC111840000, AC111840010, AC111840025, AC111840050, AC111845000

Synonyms: Bicyclo(4.4.0)decane; Decalin; Naphthalene; Perhydronaphthalene; Decahydronaphthalene.

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 |
|---------|----------------------|---------|---------------|
| 91-17-8 | Decahydronaphthalene | 98 | 202-046-9 |

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 57 deg C.

Warning! Causes respiratory tract irritation. **Flammable liquid and vapor.** Causes eye and skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. May form explosive peroxides. May cause central nervous system depression. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable.

Target Organs: Central nervous system, eyes, skin, mucous membranes.

Potential Health Effects

Eye: Contact with eyes may cause severe irritation, and possible eye burns.

Skin: Prolonged and/or repeated contact may cause irritation and/or dermatitis. Exposure may cause irritation and possible burns.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause blue or greenish-brown urine.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause kidney damage. High concentrations may cause pulmonary edema and lung hemorrhages.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. In Decalin studies, NTP found clear evidence of carcinogenicity in male rats. However, the mechanism is not relevant to humans. NTP found no evidence of carcinogenicity in female rats, no evidence in male mice, and equivocal evidence in female mice.

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 water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

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. Vapors may form an explosive mixture with air. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. For large fires, use water spray or fog. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 57 deg C (134.60 deg F)

Autoignition Temperature: 250 deg C (482.00 deg F)

Explosion Limits, Lower: 0.7 @ 100°C

Upper: 4.9 @ 100°C

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

Section 6 - Accidental Release Measures

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

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid ingestion and inhalation. If peroxide formation is suspected, do not open or move container. Do not use if the material has evaporated to dryness. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Keep under a nitrogen blanket. Store in a cool, dry, well-ventilated area away from incompatible substances.

After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Addition of water or appropriate reducing materials will lessen peroxide formation. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|----------------------|-------------|-------------|-------------------|
| Decahydronaphthalene | none listed | none listed | none listed |

OSHA Vacated PELs: Decahydronaphthalene: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: aromatic odor

pH: Not available.

Vapor Pressure: 1 mm Hg @ 22.7C

Vapor Density: 4.8 (air=1)

Evaporation Rate: Not available.

Viscosity: 3 mPa s 20 C

Boiling Point: 187 deg C

Freezing/Melting Point: -31 deg C

Decomposition Temperature: Not available.

Solubility: Insoluble.

Specific Gravity/Density: 0.8900

Molecular Formula: C₁₀H₁₈

Molecular Weight: 138.25

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Prolonged exposure to air and sunlight may form unstable peroxides. Under normal storage conditions, peroxidizable

compounds can form and accumulate peroxides which may explode when subjected to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation.

Conditions to Avoid: Light, ignition sources, exposure to air, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 91-17-8: QJ3150000

LD50/LC50:

CAS# 91-17-8:

Inhalation, rat: LC50 = 710 ppm/4H;

Oral, rat: LD50 = 4170 mg/kg;

Skin, rabbit: LD50 = 5900 uL/kg;

Carcinogenicity:

CAS# 91-17-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information present.

Teratogenicity: No information present.

Reproductive Effects: No information present.

Neurotoxicity: No information present.

Mutagenicity: No information present.

Other Studies: Has caused kidney and endocrine tumors in experimental animals. In guinea pigs, vapor exposure caused cataracts and kidney lesions.

Section 12 - Ecological Information

No information available.

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: None listed.

Section 14 - Transport Information

| | US DOT | Canada TDG |
|-----------------------|----------------------|---------------------------|
| Shipping Name: | DECAHYDRONAPHTHALENE | No information available. |
| Hazard Class: | 3 | |
| UN Number: | UN1147 | |
| Packing Group: | III | |

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 91-17-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

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.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 91-17-8: acute, flammable.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

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

STATE

CAS# 91-17-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

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:

XI

Risk Phrases:

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 91-17-8: 1

Canada - DSL/NDSL

CAS# 91-17-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B, B3.

Canadian Ingredient Disclosure List

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| Section 16 - Additional Information |
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MSDS Creation Date: 11/24/1997

Revision #4 Date: 11/20/2002

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