Section 1 - Chemical Product and Company Identification

MSDS Name: 1,2,3,4-Tetrahydronaphthalene
Catalog Numbers: AC146730000, AC1467300010, AC146730025, AC146730050, AC146730100, AC146730200, AC146730200, AC146735000, AC187670000, AC187670010, AC187670025, AC187670050, AC187670050, T72-4
Synonyms: THN; Tetrahydronaphthalene; Tetralin; an aromatic-cycloaliphatic hydrocarbon.

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaan 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

Risk Phrases: 91-17-8
CAS#: 91-20-3
Chemical Name: Decahydronaphthalene
%: 2
EINECS#: 202-046-9

Risk Phrases: 119-64-2
CAS#: 119-64-2
Chemical Name: 1,2,3,4-Tetrahydronaphthalene
%: 97
EINECS#: 204-340-2

Hazard Symbols:
EMERGENCY OVERVIEW

Warning! Combustible liquid and vapor. May cause respiratory tract irritation. May cause central nervous system depression. Aspiration hazard if swallowed. Can enter lungs and cause damage. Causes eye and skin irritation. Uninhibited material, or material from which the inhibitor has been removed or reacted, may form explosive peroxides. Target Organs: Kidneys, central nervous system, liver, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. Not expected to cause an allergic skin reaction. Aspiration hazard. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Inhalation of vapor may cause respiratory tract irritation. May cause narcotic effects in high concentration. Exposure produces central nervous system depression. May cause dizziness, incoordination, and unconsciousness.

Chronic: Overexposure may cause delayed kidney injury. Chronic ingestion may cause liver damage.

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. Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. 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. May form explosive peroxides. May accumulate static electrical charges, and may cause ignition of its own vapors. Containers may explode when heated. Combustible 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. Use water spray to cool fire-exposed containers. Water may be ineffective.

Autoignition Temperature: 385 deg C ( 725.00 deg F)

Flash Point: 71 deg C ( 159.80 deg F)

Explosion Limits: Lower: 0.8% @ 100°C
Limits: Upper:
5.0% @ 150°C

NFPA Rating:
- health: 1
- 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. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Isolate area and deny entry. Provide ventilation. Place under an inert atmosphere.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Avoid contact with skin and eyes. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed.

Avoid contact with air and sunlight. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Unused chemicals should not be returned to the container. Do not distill since this removes peroxide-inhibitors.

Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Regularly check inhibitor levels to maintain peroxide levels below 1%. Do not break the seal on the container until it is needed. Long-term storage is not recommended. 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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
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<tbody>
<tr>
<td>Decahydronaphthalene</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
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<td></td>
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<tr>
<td>Naphthalene</td>
<td>10 ppm; 15 ppm</td>
<td>10 ppm TWA; 50</td>
<td>10 ppm TWA; 50</td>
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<td></td>
<td>STEL; Skin</td>
<td>mg/m3 TWA 250</td>
<td>mg/m3 TWA</td>
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<td></td>
<td>potential</td>
<td>ppm IDLH</td>
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<tr>
<td>1,2,3,4-Tetrahydronaphthalene</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Decahydronaphthalene: None listed Naphthalene: 10 ppm TWA; 50 mg/m3 TWA 1,2,3,4-Tetrahydronaphthalene: None listed

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 ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a Respirators: NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: clear, colorless to pale yellow
Odor: gasoline-like - hydrocarbon-like - naphthalene-like
pH: Not available
Vapor Pressure: 1 mm Hg @ 38 deg C
Vapor Density: 4.55 (air=1)
Evaporation Rate: <1 (Butyl Acetate=1)
Viscosity: 2.2 mPa s @20 deg C
Boiling Point: 207 deg C ( 404.60°F)
Freezing/Melting Point: -30 deg C ( -22.00°F)
Decomposition Temperature:
Solubility in water: Negligible
Specific Gravity/Density: .97
Molecular Formula: C10H12
Molecular Weight: 132.20

Section 10 - Stability and Reactivity

Chemical Stability: 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 monoxide, carbon dioxide.

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 91-17-8: QJ3150000
CAS# 91-20-3: QJ0525000
CAS# 119-64-2: QK3850000

RTECS:
CAS# 91-17-8: Inhalation, rat: LC50 = 710 ppm/4H;
Skin, rabbit: LD50 = 4170 mg/kg;

CAS# 91-20-3: Draize test, rabbit, eye: 100 mg Mild;
Inhalation, rat: LC50 = >340 mg/m3/1H;

CAS# 119-64-2: Oral, mouse: LD50 = 316 mg/kg;
Oral, rat: LD50 = 490 mg/kg;
Skin, rabbit: LD50 = >20 gm/kg;
Skin, rat: LD50 = >2500 mg/kg;

RTECS:

LD50/LC50:
CAS# 91-17-8: Oral, rat: LD50 = 1620 uL/kg;
Skin, rabbit: LD50 = 17300 uL/kg;
Other: 1620 uL/kg = 1572 mg/kg. LC50 inhalation gpg: > 275 ppm/8H.

Decahydronaphthalene - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Naphthalene - California: carcinogen, initial date 4/19/02 NTP: Suspect carcinogen IARC: Group 2B carcinogen
1,2,3,4-Tetrahydronaphthalene - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Section 12 - Ecological Information
Other: See actual entry in RTECS for complete information.

Section 13 - Disposal Considerations
Other: No information available.
Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information
US DOT
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.
Hazard Class: 9
UN Number: UN3082
Packing Group: III
Canada TDG
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:

USA RQ: CAS# 91-20-3: 100 lb final RQ; 45.4 kg final RQ

Section 15 - Regulatory Information
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XI N
Risk Phrases:
  R 19 May form explosive peroxides.
  R 36/38 Irritating to eyes and skin.
  R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Phrases:
  S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  S 28A After contact with skin, wash immediately with plenty of water.
  S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)
CAS# 91-17-8: 1
CAS# 91-20-3: 2
CAS# 119-64-2: 2

Canada
CAS# 91-17-8 is listed on Canada's DSL List
CAS# 91-20-3 is listed on Canada's DSL List
CAS# 119-64-2 is listed on Canada's DSL List
Canadian WHMIS Classifications: B3, D2B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 91-17-8 is not listed on Canada's Ingredient Disclosure List.
CAS# 91-20-3 is listed on Canada's Ingredient Disclosure List
CAS# 119-64-2 is listed on Canada's Ingredient Disclosure List

US Federal
TSCA
CAS# 91-17-8 is listed on the TSCA Inventory.
CAS# 91-20-3 is listed on the TSCA Inventory.
CAS# 119-64-2 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 10/26/1998
Revision #9 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility 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 the company 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 the company has been advised of the possibility of such damages.

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