1 - Product and Company Information

Product Name: 1,2,3,4-TETRAHYDRONAPHTHALENE, REAGENTPLUS, 99%
Product Number: 429325
Company: Sigma-Aldrich Pty. Ltd.
12 Anella Avenue
Castle Hill NSW 2154
Australia
Technical Phone #: +61 2 9841 0555 (1800 800 097)
Fax: +61 2 9841 0500 (1800 800 096)
Emergency Phone #: +44 8701906777 (1800 448 465)

2 - Composition/Information on Ingredients

Product Name: 1,2,3,4-TETRAHYDRONAPHTHALENE
CAS #: 119-64-2
EC no: 204-340-2
Annex I Index Number: 601-045-00-4

Ingredient Name: NAPHTHALENE
Percent: 0.7
CAS #: 91-20-3
EC no: 202-049-5
Annex I Index Number: 601-052-00-2
Carc. Cat.: 3

Symbols: Xn N
R-Phrases: 22 40 50/53
Harmful if swallowed. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Formula: C10H12
Molecular Weight: 132.21 AMU
Synonyms:
Naphthalene 1,2,3,4-tetrahydride * Delta(sup 5,7,9)-naphthantriene * Tetrahydronaphtalene * 1,2,3,4-Tetrahydronaphthalene * Tetralin * Tetralina (Polish) * Tetraline * Tetranap

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
May form explosive peroxides. Irritating to eyes and skin. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4 - First Aid Measures

AFTER INHALATION
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
AFTER SKIN CONTACT
In case of contact, immediately wash skin with soap and copious amounts of water.

AFTER EYE CONTACT
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

AFTER INGESTION
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS
Specific Hazard(s): Emits toxic fumes under fire conditions. Combustible liquid. Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING
Directions for Safe Handling: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Conditions of Storage: Keep tightly closed. Keep away from heat and open flame.


8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS
Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

EXPOSURE LIMITS
<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>NDS</td>
<td>100 MG/M3</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>NDSCh</td>
<td>300 MG/M3</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>NDSP</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

PERSONAL PROTECTIVE EQUIPMENT
Respiratory Protection: Government approved respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance
Physical State: Liquid

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>204 – 207 °C</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>-35 °C</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>75 °C Method: closed cup</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>384 °C</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>Lower: 0.8 % Upper: 5 %</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.18 mmHg 20 °C</td>
<td></td>
</tr>
<tr>
<td>SG/Density</td>
<td>0.969 g/cm3</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>4.55 g/l</td>
<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
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<td></td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>&lt; 0.05 %</td>
<td></td>
</tr>
<tr>
<td>Surface Tension</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Conductivity</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Data</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

10 - Stability and Reactivity

STABILITY
Stable: Stable.
Conditions of Instability: May form peroxides of unknown stability.
Conditions to Avoid: Light. Heat. Air.
Materials to Avoid: Oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: QK3850000

ACUTE TOXICITY
LD50 Oral Rat 1620 UL/KG
LD50 Skin Rabbit 17300 UL/KG
LC50 Inhalation Guinea pig 275 ppm

IRRITATION DATA
Skin Rabbit 500 mg Remarks: Open irritation test

SENSITIZATION
Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

SIGNS AND SYMPTOMS OF EXPOSURE
Can cause CNS depression.

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Ingestion: Harmful if swallowed.

TARGET ORGAN INFORMATION

12 - Ecological Information
No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL
Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR
UN#: 3082
Class: 9
PG: III
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.

IMDG
UN#: 3082
Class: 9
PG: III
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Marine Pollutant: No
Severe Marine Pollutant: No
Technical Name: Required

IATA
UN#: 3082
Class: 9
PG: III
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Inhalation Packing Group I: No
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES
ANNEX I INDEX NUMBER: 601-045-00-4
INDICATION OF DANGER: Xi N
   Irritant. Dangerous for the environment.
R-PHRASES: 19 36/38 51/53
   May form explosive peroxides. Irritating to eyes and skin.
   Toxic to aquatic organisms, may cause long-term adverse effects
   in the aquatic environment.
S-PHRASES: 26 28 61
   In case of contact with eyes, rinse immediately with plenty of
   water and seek medical advice. After contact with skin, wash
   immediately with plenty of water. Avoid release to the
   environment. Refer to special instructions/safety data sheets.

COUNTRY SPECIFIC INFORMATION

Germany
   WGK: 2

SWITZERLAND
   SWISS POISON CLASS: 4

16 - Other Information

WARRANTY
   The above information is believed to be correct but does not
   purport to be all inclusive and shall be used only as a guide. The
   information in this document is based on the present state of our
   knowledge and is applicable to the product with regard to
   appropriate safety precautions. It does not represent any
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