1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : Sodium tetraborate decahydrate

Product Number : S9640
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment
May impair fertility. May cause harm to the unborn child.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Boraxdecahydrate
Sodium boratedecahydrate

Formula : B₄Na₂O₇ · 10H₂O
Molecular Weight : 381,37 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1303-96-4</td>
<td>215-540-4</td>
<td>005-011-01-1</td>
<td>T, R60 - R61</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid exposure - obtain special instructions before use. Avoid dust formation. Avoid breathing dust. Provide appropriate exhaust ventilation at places where dust is formed.

Storage
Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection
Safety glasses with side-shields conforming to EN166

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form crystalline
Colour white
Safety data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>9.2 at 10 g/l</td>
</tr>
<tr>
<td>Melting point</td>
<td>62 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>no data available</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>1.73 g/mL at 25 °C</td>
</tr>
<tr>
<td>Water solubility</td>
<td>38.1 g/l at 20 °C - completely soluble</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents, Strong reducing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Borane/boron oxides, Sodium oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 4.500 - 5.000 mg/kg
LD50 Dermal - rabbit - 10.000 mg/kg

Irritation and corrosion
no data available

Sensitisation
no data available

Chronic exposure
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

fetotoxicity

Presumed human reproductive toxicant

Signs and Symptoms of Exposure
Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust. A recent epidemiological study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.
Potential Health Effects

**Inhalation**
May be harmful if inhaled. May cause respiratory tract irritation.

**Skin**
May be harmful if absorbed through skin. May cause skin irritation.

**Eyes**
May cause eye irritation.

**Ingestion**
May be harmful if swallowed.

Additional Information
RTECS: VZ2275000

12. ECOLOGICAL INFORMATION

**Elimination information (persistence and degradability)**

no data available

**Ecotoxicity effects**

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>CONCENTRATION</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>LC50</td>
<td>178 mg/l - 72 h</td>
</tr>
<tr>
<td>Toxicity to daphnia</td>
<td>EC50</td>
<td>1.085 - 1.402 mg/l - 48 h</td>
</tr>
<tr>
<td>Toxicity to algae</td>
<td>IC50</td>
<td>158 mg/l - 96 h</td>
</tr>
</tbody>
</table>

**Further information on ecology**

no data available

13. DISPOSAL CONSIDERATIONS

**Product**
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

14. TRANSPORT INFORMATION

**ADR/RID**
Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

15. REGULATORY INFORMATION

**Labelling according to EC Directives**

**EC Label**

<table>
<thead>
<tr>
<th>HAZARD SYMBOL</th>
<th>HAZARD DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Toxic</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>R-PHRASE(S)</th>
<th>R-PHRASE DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>R60</td>
<td>May impair fertility.</td>
</tr>
<tr>
<td>R61</td>
<td>May cause harm to the unborn child.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>S-PHRASE(S)</th>
<th>S-PHRASE DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>S53</td>
<td>Avoid exposure - obtain special instructions before use.</td>
</tr>
<tr>
<td>S45</td>
<td>In case of accident or if you feel unwell, seek medical advice immediately (show the</td>
</tr>
</tbody>
</table>
16. OTHER INFORMATION

Further information
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