1. Product Identification

Synonyms: Sodium borate decahydrate; borax; sodium pyroborate
CAS No.: 1330-43-4 (Anhydrous) 1303-96-4 (Decahydrate)
Molecular Weight: 381.37
Chemical Formula: Na₂B₄O₇ · 10H₂O
Product Codes:
J.T. Baker: 3568, 3570, 3574, 3575
Macron: 7418, 7457, 7460, 7792

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borates, Tetra, Sodium Salts (Anhydrous)</td>
<td>1330-43-4</td>
<td>99 - 100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

- Health Rating: 2 - Moderate (Life)
- Flammability Rating: 0 - None
- Reactivity Rating: 1 - Slight
- Contact Rating: 2 - Moderate (Life)
- Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
- Storage Color Code: Green (General Storage)
Potential Health Effects
----------------------------------

**Inhalation:**
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

**Ingestion:**
May cause nausea, vomiting, diarrhea, muscular spasms, dullness, lethargy, circulatory depression, central nervous system depression, shock, kidney damage, coma, and death. Estimated lethal dose 15 to 20 grams.

**Skin Contact:**
Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin with possible systemic effects.

**Eye Contact:**
Causes irritation, redness, and pain.

**Chronic Exposure:**
Prolonged or repeated ingestion or skin absorption may cause anorexia, weight loss, vomiting, mild diarrhea, skin rash, convulsions, and anemia.

**Aggravation of Pre-existing Conditions:**
No information found.

4. First Aid Measures

**Inhalation:**
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:**
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin Contact:**
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

**Fire:**
Not considered to be a fire hazard.

**Explosion:**
Not considered to be an explosion hazard.

**Fire Extinguishing Media:**
Use any means suitable for extinguishing surrounding fire.

**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.
7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
- NIOSH Recommended Exposure Limit (REL): 1 mg/m3 (TWA)
- ACGIH Threshold Limit Value (TLV): 5 mg/m3 (TWA)

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
White, Gray, Bluish or Greenish White Streaked Crystals.

Odor:
Odorless.

Solubility:
6g/100g water.

Density:
1.73

pH:
Alkaline

% Volatiles by volume @ 21C (70F):
0

Boiling Point:
320C (608F) Loses water

Melting Point:
75C (167F)

Vapor Density (Air=1):
No information found.

Vapor Pressure (mm Hg):
No information found.
10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**
Toxic gases and vapors may be released if involved in a fire.

**Hazardous Polymerization:**
Will not occur.

**Incompatibilities:**
Acids, alkaloids, and metallic salts.

**Conditions to Avoid:**
Incompatibles.

11. Toxicological Information


<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC Category</th>
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<tbody>
<tr>
<td>Borates, Tetra, Sodium Salts (Anhydrous) (1330-43-4)</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

12. Ecological Information

**Environmental Fate:**
When released into the soil, this material may leach into groundwater.

**Environmental Toxicity:**
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

<table>
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<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
<th>Japan</th>
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--- Chemical Inventory Status - Part 2 ----------------------------- -Canada--

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<tr>
<th>Ingredient</th>
<th>Korea</th>
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<th>NDSL</th>
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<td>No</td>
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--- Federal, State & International Regulations - Part 1 -------------------

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<tr>
<th>Ingredient</th>
<th>RQ</th>
<th>TPQ</th>
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--- Federal, State & International Regulations - Part 2 -------------------

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<tr>
<th>Ingredient</th>
<th>CERCLA</th>
<th>261.33</th>
<th>8(d)</th>
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<tbody>
<tr>
<td>Borates, Tetra, Sodium Salts</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Chemical Weapons Convention: No  TSCA 12(b): No  CDTA: No
SARA 311/312: Acute: Yes  Chronic: Yes  Fire: No  Pressure: No
Reactivity: No  (Mixture / Solid)

--- Other Information --

**Australian Hazchem Code:** None allocated.
**Poison Schedule:** S5
**WHMIS:**
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and
the MSDS contains all of the information required by the CPR.

--- 16. Other Information ---

**NFPA Ratings:** Health: 1  Flammability: 0  Reactivity: 0
**Label Hazard Warning:**
WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES
IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
**Label Precautions:**
Avoid contact with eyes, skin and clothing.
Avoid breathing dust.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
**Label First Aid:**
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to
an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is
difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15
minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical
attention.
Product Use:
Laboratory Reagent.

Revision Information:
No Changes.

Disclaimer:
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**********
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Prepared by: Environmental Health & Safety