Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Boric acid
Product Number: B7901
Brand: Sigma
Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone: +1 800-325-8832
Fax: +1 800-325-8052
Emergency Phone #: (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: H3BO3
Molecular Weight: 61.93 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10043-35-3</td>
<td>233-139-2</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
- Delayed target organ effects
- Reproductive hazard

Target Organs
- Tastes.

HIMS Classification
- Health Hazard: 1
- Chronic Health Hazard: *
- Flammability: 0
- Physical hazards: 0

NFPA Rating
- Health Hazard: 0
- Fire: 0
- Reactivity Hazard: 0

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

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

4. FIRST AID MEASURES

General advice
Move out of dangerous area.

Inhalation
If breathed in, move person into fresh air. If not breathing give artificial respiration.

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIRE-FIGHTING MEASURES

Flammability properties
- Flash point: no data available
- Ignition temperature: no data available

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
Avoid dust formation.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Provide appropriate exhaust ventilation at places where dust is formed.

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

- Moisture sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid</td>
<td>10043-35-3</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>2005-01-01</td>
<td>US. American Conference of Governmental and Industrial Hygienists</td>
</tr>
</tbody>
</table>
Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004. Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)

Remarks
Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.
ACGIH 2005 Adoption
Refers to Appendix A — Carcinogens.

<table>
<thead>
<tr>
<th>STEL</th>
<th>6 mg/m³</th>
<th>2005-01-01</th>
</tr>
</thead>
</table>

Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.
ACGIH 2005 Adoption
Refers to Appendix A — Carcinogens.

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Exposure to moisture.

Materials to avoid
Potassium, Acid anhydrides

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.
Boranes/boron oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD₅₀ Oral - rat: 2,600 mg/kg.

Irritation and corrosion
no data available

Sensitisation
no data available

Chronic exposure
May cause reproductive disorders.

Signs and Symptoms of Exposure
Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, amphotericin lesions on the skin and mucous membranes. Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams.

Potential Health Effects

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Skin</th>
<th>Eyes</th>
<th>Ingestion</th>
<th>Target Organs</th>
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<td>May be harmful if inhaled. May cause respiratory tract irritation.</td>
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<td>May cause eye irritation.</td>
<td>May be harmful if swallowed.</td>
<td>Testes.</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)
no data available
Ecotoxicity effects

Toxicity to fish
LC50 - Phycocystis ludus - 279 mg/l - 96 h
LC50 - Lepernias maerophirus (Bluegill) - > 1,021 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates.
LC50 - Daphnia magna (Water flea) - 53.2 mg/l - 21 d
EC50 - Daphnia magna (Water flea) - 133 mg/l - 48 h

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

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Delayed target organ effects, Reproductive hazard

TSCA Status
On TSCA inventory

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components
No Components Listed

Pennsylvania Right To Know Components

CAS-No. Revision Date
Boric acid 10043-35-3

New Jersey Right To Know Components

CAS-No. Revision Date
Boric acid 10043-35-3

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further Information
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