



Do not breathe dust/fume/gas/mist/vapors/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection

#### **Precautionary Statements - Response**

Immediately call a poison center or doctor/physician  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a poison center or doctor/physician  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a poison center or doctor/physician  
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

#### **Precautionary Statements - Storage**

Store locked up

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Other hazards**

Toxic to aquatic life with long lasting effects

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical name	CAS No	Weight-%
Zinc Sulfate Monohydrate	7446-19-7	8-12
Manganese Sulfate Monohydrate	10034-96-5	8-11
Boric Acid	10043-35-3	1.5-2.0

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### **4. FIRST AID MEASURES**

#### **Description of first aid measures**

<b>General Advice</b>	Immediately call a poison center or doctor/physician.
<b>Eye Contact</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
<b>Skin Contact</b>	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
<b>Ingestion</b>	Rinse mouth. Do NOT induce vomiting.

#### **Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	Causes severe skin burns and eye damage. May cause damage to organs through prolonged or repeated exposure.
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#### **Indication of any immediate medical attention and special treatment needed**

<b>Notes to Physician</b>	Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

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

**Unsuitable Extinguishing Media** Not determined.

### Specific Hazards Arising from the Chemical

May react with high carbon metals to produce hydrogen gas, which can form an explosive mixture.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** Caution should be exercised regarding personal safety and exposure to released product. Keep unnecessary people away, isolate hazard area and deny entry.

### Environmental precautions

**Environmental precautions** See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

**Methods for Containment** Flush with water into retaining area or container.

**Methods for Clean-Up** Neutralize solution with bicarbonate of soda.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing and eye/face protection.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Store locked up. Store in a safe place away from pets and keep out of the reach of children. Store away from excessive heat. Product will freeze. Always store product above 32 degrees F (Do Not Freeze). Freezing may cause product separation. Always keep container closed. Keep away from galvanized pipe and any nylon storage or handling equipment.

**Incompatible Materials** Strong bases. Strong reducing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese Sulfate Monohydrate 10034-96-5	TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	(vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn
Boric Acid	STEL: 6 mg/m <sup>3</sup> inhalable	-	-

10043-35-3	particulate matter TWA: 2 mg/m <sup>3</sup> inhalable particulate matter		
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**Appropriate engineering controls**

**Engineering Controls** Showers. Eyewash stations. Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Wear eye/face protection.

**Skin and Body Protection** Wear long-sleeved shirt, long pants, and shoes plus socks. Chemical resistant protective gloves.

**Respiratory Protection** Refer to 29 CFR 1910.134 for respiratory protection requirements.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid	<b>Odor</b>	Minimal
<b>Appearance</b>	Light pink liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Light pink		

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>
<b>pH</b>	0.4	
<b>Melting point / freezing point</b>	Not determined	
<b>Boiling point / boiling range</b>	Not determined	
<b>Flash point</b>	Not determined	
<b>Evaporation Rate</b>	Not determined	
<b>Flammability (Solid, Gas)</b>	Liquid-Not applicable	
<b>Flammability Limit in Air</b>		
<b>Upper flammability or explosive limits</b>	Not determined	
<b>Lower flammability or explosive limits</b>	Not determined	
<b>Vapor Pressure</b>	Not determined	
<b>Vapor Density</b>	1.0	(Air=1)
<b>Relative Density</b>	1.222-1.322	
<b>Water Solubility</b>	Completely soluble	
<b>Solubility in other solvents</b>	Not determined	
<b>Partition Coefficient</b>	Not determined	
<b>Autoignition temperature</b>	Not determined	
<b>Decomposition temperature</b>	Not determined	
<b>Kinematic viscosity</b>	Not determined	
<b>Dynamic Viscosity</b>	Not determined	
<b>Explosive Properties</b>	Not determined	
<b>Oxidizing Properties</b>	Not determined	

**10. STABILITY AND REACTIVITY**

**Reactivity**

Not reactive under normal conditions.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous Polymerization** Will not occur.

**Conditions to Avoid**

Incompatible Materials.

**Incompatible materials**

Strong bases. Strong reducing agents.

**Hazardous decomposition products**

Sulfur dioxide. Sulfur trioxide.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

**Eye Contact** Avoid contact with eyes.

**Skin Contact** Avoid contact with skin.

**Inhalation** Do not inhale.

**Ingestion** Do not ingest.

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Boric Acid 10043-35-3	= 2660 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 0.16 mg/L ( Rat ) 4 h

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** Please see section 4 of this SDS for symptoms.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Causes severe skin burns.

**Serious eye damage/eye irritation** Causes severe eye damage.

**Carcinogenicity** Borax is considered to be a human carcinogen when in respirable form (dust / powder).

Chemical name	ACGIH	IARC	NTP	OSHA
Boric Acid 10043-35-3		Group 2A		X

**Legend**

*IARC (International Agency for Research on Cancer)*

*Group 2A - Probably Carcinogenic to Humans*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

*X - Present*

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

Oral LD50 10,000.0000 mg/kg

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Toxic to aquatic life with long lasting effects.

**Component Information**

Chemical name	Algae/aquatic plants	Fish	Crustacea
Boric Acid 10043-35-3			115 - 153: 48 h Daphnia magna mg/L EC50

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

There is no data for this product.

**Mobility**

Chemical name	Partition coefficient
Boric Acid 10043-35-3	-0.757

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS**

**Waste Treatment Methods**

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**California Hazardous Waste Status**

Chemical name	California Hazardous Waste Status
Zinc Sulfate Monohydrate 7446-19-7	Toxic
Boric Acid 10043-35-3	Toxic

**14. TRANSPORT INFORMATION**

**Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

**UN/ID No** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s. (Zinc Sulfate)  
**Hazard class** 9  
**Packing Group** III



**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Zinc Sulfate Monohydrate 7446-19-7	X		X
Manganese Sulfate Monohydrate 10034-96-5	X		X
Boric Acid 10043-35-3	X		

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special Hazards</b>
	2	0	1	X
<b><u>HMIS</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Physical hazards</b>	<b>Personal Protection</b>
	2	0	1	X

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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**