

**Section 1 - Chemical Product and Company Identification**

**MSDS Name:** Boric acid  
**Catalog Numbers:** AC180570000, AC180570010, AC180570025, AC217080000, AC217085000, AC315180000, AC315180000, AC315181000, AC327130000, AC327130010, AC423480000, AC423480020, AC423480020, AC423485000, S79802, S79923, S79923-1, S93142, S93143, A73-1, A73-10, A73-3, A73-325LB, A73-50, A73-500, A74-1, A74-10, A74-3, A74-500, A74-500LC, A77-10, A77-NHL, A78-10, A78-500, A79-12, A79-212, BP168-1, BP168-500, NC9269806, NC9974905  
**Synonyms:** Boracic acid; Hydrogen borate; Orthoboric acid.  
**Company Identification:** Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
**For information in the US, call:** 201-796-7100  
**Emergency Number US:** 201-796-7100  
**CHEMTREC Phone Number, US:** 800-424-9300

**Section 2 - Composition, Information on Ingredients**

-----  
**CAS#:** 10043-35-3  
**Chemical Name:** Boric acid  
**%:** >99  
**EINECS#:** 233-139-2  
-----

**Hazard Symbols:** T



**Risk Phrases:** 60 61

**Section 3 - Hazards Identification**

**EMERGENCY OVERVIEW**

Warning! May cause harm to the unborn child. May impair fertility. Causes eye, skin, and respiratory tract irritation. Target Organs: Respiratory system, eyes, reproductive system, skin.

**Potential Health Effects**

**Eye:** Causes eye irritation.  
**Skin:** Causes skin irritation. May be absorbed through damaged or abraded skin in harmful amounts.  
**Ingestion:** Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause gastric disturbances and electrolytic imbalance. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Boric acid poisoning begins with nausea, vomiting and diarrhea. There is a red skin rash followed by extensive exfoliation not only in areas of rash but also of mucous membranes. Other symptoms may include weakness, headache, restlessness & kidney injury  
**Inhalation:** Causes respiratory tract irritation.  
**Chronic:** Prolonged or repeated skin contact may cause dermatitis. Chronic poisoning by boron compounds, borism, may be little more than dry skin and mucous membranes, followed by appearance of a red tongue, patchy alopecia (hair loss), cracked lips, and conjunctivitis. Infants and young children are more susceptible to boric acid poisoning than adults. May

cause adverse reproductive effects.

**Section 4 - First Aid Measures**

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:**

**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

**Autoignition Temperature:** Not available.

**Flash Point:** Not available

**Explosion Limits:** Not available

**Lower:**

**Explosion Limits:** Not available

**Upper:**

**NFPA Rating:** health: 2; flammability: 0; instability: 0;

**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid breathing dust, mist, or vapor. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:**  
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits** +-----+-----

Chemical Name	ACGIH	NIOSH	OSHA -
Final PELs			

-----			
Boric acid	2 mg/m3	none listed	none
listed	(inhalable		
	fraction, listed		
	under Borate		
	compounds,		
	inorganic); 6		
	mg/m3 STEL		
	(inhalable		
	fraction, listed		
	under Borate		
	compounds,		
	inorganic)		
+-----+			

OSHA Vacated PELs: Boric acid: None listed

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear a chemical apron. Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A NIOSH/MSHA approved air purifying dust or mist respirator or European Standard EN 149.

**Section 9 - Physical and Chemical Properties**

**Physical State:** Solid

**Color:** white

**Odor:** odorless

**pH:** 3.6-4 (4% aq soln)

**Vapor Pressure:** Not available

**Vapor Density:** Not available

**Evaporation Rate:** Negligible.

**Viscosity:** Not applicable.

**Boiling Point:** Not available

**Freezing/Melting Point:** 169 deg C ( 336.20°F)

**Decomposition Temperature:**

**Solubility in water:** 4.9g/100g water @ 20°C

**Specific Gravity/Density:** 1.44 (Water=1)

**Molecular Formula:** H3BO3

**Molecular Weight:** 61.83

**Section 10 - Stability and Reactivity**

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions. Boric acid is a stable product, but when heated, it loses water to form metaboric acid (HBO<sub>2</sub>), and on further heating it is converted into boric oxide (B<sub>2</sub>O<sub>3</sub>).

**Conditions to Avoid:** High temperatures, dust generation, exposure to moist air or water.

**Incompatibilities with Other Materials** Acetic anhydride, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), alkali carbonates, Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosion hazard..

**Hazardous Decomposition Products** Oxides of boron.

**Hazardous Polymerization**

Has not been reported.

### Section 11 - Toxicological Information

**RTECS#:** CAS# 10043-35-3: ED4550000 ED4560000

**LD50/LC50:** RTECS:  
**CAS# 10043-35-3:** Oral, mouse: LD50 = 3450 mg/kg;  
Oral, rat: LD50 = 2660 mg/kg;  
Oral, rat: LD50 = 2500 mg/kg;

**Carcinogenicity:** Boric acid - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**Other:** See actual entry in RTECS for complete information.

### Section 12 - Ecological Information

**Ecotoxicity:** Water flea Daphnia: LC50 = 115.0-153.0 mg/L; 48 Hr.; Static Condition  
Fish: Rainbow trout: LC50=150mg B/L; 24-day  
Fish: Goldfish: LC50=46mg B/L; 7-day

### Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

### Section 14 - Transport Information

US DOT

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name: Not available

Hazard Class:

UN Number:

Packing Group:

### Section 15 - Regulatory Information

**European/International Regulations**

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 61 May cause harm to the unborn child.

R 60 May impair fertility.

Safety Phrases:

S 53 Avoid exposure - obtain special instructions before use.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 10043-35-3: 1

Canada

CAS# 10043-35-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: D2A, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 10043-35-3 is listed on Canada's Ingredient Disclosure List

**US Federal**

TSCA

CAS# 10043-35-3 is listed on the TSCA Inventory.

**Section 16 - Other Information**

**MSDS Creation Date:** 5/03/1999

**Revision #8 Date:** 6/19/2006

**Revisions were made in Sections: 9**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.