

# Material Safety Data Sheet

## Boric Acid

ACC# 03260

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Boric Acid

**Catalog Numbers:** AC180570000, AC180570010, AC180570025, AC217080000, AC217085000, AC315180000, AC315181000, AC327130000, AC327130010, AC423480000, AC423480020, AC423485000, S79802, S79923, S79923-1, S93142, S93143, A73-1, A73-10, A73-10LC, A73-3, A73-325LB, A73-50, A73-500, A73140KG, A74-1, A74-10, A74-3, A74-500, A74-500LC, A77-10, A77-NHL, A78-10, A78-3, A78-50, A78-500, A7912, A79212, AVX741, BP168-1, BP168-500, NC9107241, NC9517819, NC9592726, NC9627238, NC9974905, XXA73PD3140KG, XXA7450KG, ZZA7321204

**Synonyms:** Boracic acid; Hydrogen borate; Orthoboric Acid.**Company Identification:**

Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10043-35-3	Boric acid	>99.0	233-139-2

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white solid.

**Warning!** May cause eye and skin irritation. May cause respiratory tract irritation. Causes digestive tract irritation. May cause central nervous system effects. May cause adverse reproductive effects.

**Target Organs:** None known.

#### Potential Health Effects

**Eye:** May cause eye irritation.**Skin:** May cause skin irritation. May be absorbed through damaged or abraded skin in harmful amounts.

**Ingestion:** Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause gastric disturbances and electrolytic imbalance. May cause central nervous system effects. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). CNS effects (excitement or depression, lethargy, headache, coma, seizures), dehydration, arrhythmias, shock and metabolic acidosis have been reported in extreme adult and pediatric

cases.

**Inhalation:** May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. May cause irritation of the mucous membranes.

**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:** Treat symptomatically and supportively.

**Antidote:** None reported.

## 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.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) 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, vapor, mist, or gas. 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	none listed	none listed	none listed

**OSHA Vacated PELs:** Boric acid: No OSHA Vacated PELs are listed for this chemical.

### 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

**Appearance:** white

**Odor:** odorless

**pH:** 5.2 (1% sol. at 20C)

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Negligible.

**Viscosity:** Not applicable.

**Boiling Point:** Not available.

**Freezing/Melting Point:** 339 deg F

**Decomposition Temperature:** Not available.

**Solubility:** 4.9g/100g water at 20C.

**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, first forming 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, incompatible materials, dust generation, exposure to moist air or water.

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

**Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, oxides of boron.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

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

**LD50/LC50:**

CAS# 10043-35-3:

Oral, mouse: LD50 = 3450 mg/kg;

Oral, rat: LD50 = 2660 mg/kg;

Oral, rat: LD50 = 2500 mg/kg;

**Carcinogenicity:**

CAS# 10043-35-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Neurotoxicity:** No information available.

**Mutagenicity:** No information available.

**Other Studies:** None.

## 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; Mosquito fish (fresh water) TLm=1800 ppm/24H Mosquito fish (fresh water) TLm=1800 ppm/24H

**Environmental:** Boric acid is a water-soluble white powder that may, at high concentrations, cause damage to trees or vegetation by root absorption.

**Physical:** No information available.

**Other:** None.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	Not reviewed.	No information available.
<b>Hazard Class:</b>		
<b>UN Number:</b>		
<b>Packing Group:</b>		

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

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

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 10043-35-3: acute, chronic.

#### Section 313

No chemicals are reportable under Section 313.

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 10043-35-3 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

### California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

### European/International Regulations

#### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

T

#### Risk Phrases:

R 60 May impair fertility.

**Safety Phrases:**

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

S 53 Avoid exposure - obtain special instructions before use.

**WGK (Water Danger/Protection)**

CAS# 10043-35-3: 1

**Canada - DSL/NDSL**

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

**Canada - WHMIS**

This product has a WHMIS classification of D2A.

**Canadian Ingredient Disclosure List**

CAS# 10043-35-3 is listed on the Canadian Ingredient Disclosure List.

<b>Section 16 - Additional Information</b>
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**MSDS Creation Date:** 5/03/1999

**Revision #6 Date:** 2/09/2004

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