AMERICAN BORATE COMPANY
MATERIAL SAFETY DATA SHEET

PRODUCT AND COMPANY INFORMATION

Product Name: Boric Acid (includes Powder and Technical Grade)

Manufacturer: American Borate Company
5700 Cleveland Street, Suite 420
Virginia Beach, VA 23462
Telephone: (757) 490-2242 or (800) 486-1072

Distributed By:
SAL Chemical
3036 Birch Drive
Weirton, WV 26062
Phone: 304-748-8200

Emergency Contacts: Emergencies **ONLY** (after 5pm and weekends) CHEMTREC 1-800-424-9300
Date Prepared: 08-01-07

SECTION I – COMPONENT DATA – HAZARDOUS INGREDIENTS

Chemical Name	Common Name	C.A.S. Number
Boric Acid (H3B03)	None	10043-35-3

SECTION II HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Boric Acid is a white odorless, powdered substance that is not flammable, combustible, or explosive, and it presents no unusual hazard if involved in a fire. Boric Acid presents little or no hazard (to humans) and has low acute oral and dermal toxicities. Care should be taken to minimize the amount of Boric Acid released to the environment to avoid ecological effects.

POTENTIAL ECOLOGICAL EFFECTS: Large amounts of Boric Acid can be harmful to boron-sensitive plants and other ecological systems.

POTENTIAL HEALTH EFFECTS:

Routes of Exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because Boric Acid is not absorbed through intact skin.

Inhalation: Occasional mild irritation effects to nose and throat may occur from inhalation of Boric Acid dusts at levels greater than 10mg/m3.

Eye Contact: Boric Acid is non-irritating to eyes in normal industrial use.

Skin Contact: Boric Acid does not cause irritation to intact skin.

Ingestion: Products containing Boric Acid are not intended for ingestion. Boric Acid has a relatively low acute toxicity. Small amounts (e.g., a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Cancer: Boric Acid did not cause cancer in long-term animal studies, and is not considered a carcinogen.

Reproductive: Long-term, high dose animal ingestion studies have demonstrated reproductive effects in male animals. A human study of occupational exposure to borate dust showed no adverse effect to reproduction.

Development: High dose animal ingestion studies have demonstrated developmental effects in fetuses of pregnant animals, including fetal weight loss. A human study showed no adverse effect on reproduction.

Target Organs: No target organ has been identified in humans. High dose animal ingestion studies indicate the testes are the target organs in male animals.

Signs and Symptoms of Exposure: Symptoms of accidental over-exposure to Boric Acid have been associated with ingestion or by absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling.

SECTION III – PHYSICAL DATA

Appearance and Odor: Clear to off white powder or flakes, odorless
Specific Gravity (1120 = 1): 1.5
Melting Point: 171°C
Vapor Pressure (mmHg @ 20°C): Negligible
Percent Volatile By Volume: Not determined
Vapor Density (AIR = 1): NA
Solubility In Water: 4.89/100 ml. **pH:** 6.1 (0.1% Solution); 5.1 (1.0% Solution); 3.7 (4.7% Solution) @ 20°C

SECTION IV – FIRE & EXPLOSION HAZARD DATA

General Hazard: None (non flammable, non combustible, non explosive)
Flash Point (°F): NA
Method Used: NA
Flammability Limits: NEL: NA UEL: NA
Auto-Ignition Temperature (°F): NA
Extinguishing Media: Any fire extinguishing media may be used.
Special Fire-Fighting Instructions: None
Unusual Fire and Explosion Hazards: None
This information and recommendations are based upon data believed to be accurate. However, no guarantee or warranty of any kind expressed or implied is made with respect to this information.

SECTION V – REACTIVITY DATA

Stability (Conditions to Avoid): Stable, loses H20 on heating
Incompatibility (Materials to Avoid): Reacts with alkalines to form salts. Reaction with strong reducing agents such as metal hydrides or alkali metals will generate -hydrogen gas which could create an explosive hazard. May cause corrosion of base metals.
Hazardous Decomposition Products: None known
Hazardous Polymerization: Will not occur

SECTION VI – HEALTH HAZARD DATA

Primary Route(s) of Entry: Inhalation, skin contact, and ingestion
Health Hazards (Acute and Chronic):

Inhalation
Acute - Considered a nuisance dust, high concentrations may cause upper respiratory irritation.
Chronic - None known

Skin Contact
Acute - Mild irritation or drying
Chronic - Not absorbed through intact skin, prolonged contact damages skin. May result in absorption of boron leading to systemic poisoning as seen with ingestion. See ingestion.

Eye Contact
Acute: Irritation
Chronic: None known

Ingestion
Acute - Nausea, vomiting, diarrhea, possibly followed by weakness, depression and headache. Skin rashes, cracked lips, and loss of hair may follow ingestion. Shock may occur following ingestion of large quantities.
Chronic - Same as acute.

Signs and Symptoms of Exposure: Respiratory, skin or eye irritation, nausea, vomiting, and diarrhea from ingestion.
Medical Conditions Generally Aggravated by Exposure: None known.

SECTION VI – HEALTH HAZARD DATA CONTINUED

EXPOSURE LIMITS:

Hazardous Ingredients	OSHA PEL (mg/M3)	ACGIH TLV (mg/M3)	CAL OSHA PEL
Boric Acid	15 Total Dust 5 Respirable Dust	10	10 mg/M3 ACGIH for Nuisance Dust

CARCINOGENICITY:

Chemical Components	NTP Listed	IARC Listed	OSHA Regulated
Boric Acid	No	No	No

SECTION VII – EMERGENCY & FIRST AID PROCEDURES

Inhalation: Remove to fresh air. Seek medical attention if irritation persists.
Skin: Wash with water. If irritation persists, seek medical attention.
Eyes: Wash with running water for at least 15 minutes. Seek medical attention if irritation persists for more than 30 minutes.
Ingestion: Swallowing less than one teaspoon will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water and seek medical attention.
Note to Physicians: Observation only is required for adult ingestion of less than 6 grams of Boric Acid. For ingestion in excess of 6 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boric Acid analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment. (For Further information: Litovitz T.L., Norman, S.A., Veltri, J.C. Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. 1986; 4:427-458). 24 hour Medical consultation is available at (800) 228-5635 EXT. 144.

SECTION VIII – SPECIAL HANDLING INFORMATION

Ventilation: Natural
Respiratory Protection: A NIOSH/MSHA certified nuisance dust mask should be worn to prevent irritation if exposure exceeds guidelines.
Protective Clothing: Goggles, gloves, and long sleeved clothing to prevent excessive contact with dry materials.
Work/Hygienic Practices: No special requirements.

SECTION IX – SPILL, LEAK, & DISPOSAL PROCEDURES

Action To Take For Spills (Use Appropriate Safety Equipment): Sweep up, avoid water. bodies.
Waste Disposal Method: As an inert solid waste in accordance with state, local, and federal regulations. (RCRA-40CFR 261)
EPA Hazardous Waste Number: None
Water Spill: Boric Acid will cause localized contamination of surrounding waters based on quantity dissolved in these waters. At high concentration some damage to local vegetation, fish, and other aquatic life may be expected. Advise local water authority that affected water should not be used for irrigation or extraction of potable water until natural dilution returns boron levels to normal.

SECTION X - TRANSPORTATION

Precautions To Be Taken In Handling and Storage: Store in dry location.

DOT Information: Hazardous Material Proper Shipping Name: Not hazardous
Hazard Class: Not hazardous
UN Identification Number: None
Additional Information: None Boric Acid is not regulated under international rail, highway, water or air transport regulations.
Special Sensitivity: Moisture

SECTION XI – REGULATORY INFORMATION

TSCA No.: (10043-35-3) Boric Acid appears on the EPA TSCA inventory list.
RCRA: Boric Acid is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act or regulations (40 CFR 261 et seq.).
Superfund: CERCLA/SARA. Boric Acid is not listed under CERCLA (the Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA, (the Superfund Amendments and Reauthorization Act), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65; Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355; or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302.
Safe Drinking Water Act: Boric Acid is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding Boron.
Clean Water Act (Federal Water Pollution Control Act): 33 USC 1251 et seq.

(a) Boric Acid is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314.
(b) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129.
(c) It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

OSHA/Cal OSHA: This MSDS document meets the requirements of both OSHA (29 CFR 1910.1200) and Cal OSHA (Title 8 CCR 5194(g)) hazard communication standards.
IARC: The International Agency for Research on Cancer (of the World Health Organization) does not list or categorize Boric Acid as a carcinogen.
NTP Annual Report on Carcinogens: Boric Acid is not listed.
OSHA Carcinogen: Boric Acid is not listed.
California Proposition 65: Boric Acid is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.
Federal Food, Drug and Cosmetic Act: Pursuant to 21 CFR 175.105, 176.180 and 181.30, Boric Acid is approved by the FDA for use in adhesive components of packaging materials, as a component of paper coatings on such materials, or for use in the manufacture thereof, which materials are expected to come in contact with dry food products.
CONEG Model Legislation: Boric Acid meets all the CONEG requirements relating to heavy metal limitations on components of packaging materials.
WHMIS-Boric acid is classified as Class D-Div.2A under Canadian WHMIS guidelines.

SECTION XII – OTHER INFORMATION

Product Label Text Hazard Information:

- May be harmful if swallowed.
- May cause reproductive harm or birth defects based on animal data.
- Avoid contamination of food or feed.
- Not for food, drug or pesticidal use.
- Refer to MSDS.
- KEEP OUT OF REACH OF CHILDREN.

National Fire Protection Association (NFPA) Classification:

Health 0
Flammability 0
Reactivity 0

Hazardous Materials Information Systems (HMIS):

Red: (Flammability) 0
Yellow: (Reactivity) 0
Blue: (Acute Health) 1*
*Chronic Effects

SECTION XIII – TOXICITY/ECOLOGY

LD50 oral rat: 2660 mg/kg
LDL (lowest lethal dose -oral woman: 200 mg/kg
Carcinogenicity: NA
Mutagenicity: NA
CHEMICAL INVENTORY LISTING:

US EPA TSCA	10043-35-3
Canadian DSL	10043-35-3
EINECS	233-139-2
South Korea	1-439
Japanese MITI	(1)-63

Clean Air Act (Montreal Protocol)-Boric acid was not manufactured with and does not contain any Class 1 or Class 2 ozone depleting substances.