Safety Data Sheet

Boric Acid

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Boric Acid

Synonyms/Generic Names: Boron Trihydroxide; Orthoboric Acid; Boracic Acid

SDS Number: 107.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC – 800-424-9300 or 703-527-3887 (24 Hours/Day, 7Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target organ effect, Teratogen, Reproductive hazard

Target Organs: Kidneys, circulatory and central nervous system

Signal Words: Danger

Pictograms:

GHS Classification:

Acute toxicity, Oral	Category 5
Reproductive toxicity	Category 1A

GHS Label Elements, including precautionary statements:

Hazard Statements:

H303	May be harmful if swallowed
H360	May damage fertility or the unborn child.

Precautionary Statements:

P201	Obtain special instructions before use.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	1
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	0
Reactivity	0
Personal	E

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Boric Acid	100	10043-35-3	233-139-2	H_3BO_3	61.83 g/mole

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	A mixture of potassium and boric acid may explode upon impact. A mixture of boric acid and acetic anhydride will explode when heated to 58-60°C. Emits toxic fumes (Borane, Boron oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Do not disperse dust into the air during cleanup. Any release to the environment may require reporting to federal/national or local agencies.
Methods and materials for containment and cleaning up	Ventilate the release area. Do not disperse dust into the air during clean-up. Pick up and arrange disposal without creating dust. Sweep up and place in a closed container. Dispose of all waste or cleanup materials in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment.

Conditions for safe storage, including any incompatibilities
Store in a tightly closed container. Store in a dry, cool and ventilated area. Do not become exposed to the material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Controls:

Component	Exposure Limits	Basis	Entity
Boric Acid	2 mg/m^3	TLV	ACGIH
	6 mg/m^3	STEL	ACGIH

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels

Personal Protection

Eyes	Wear chemical safety glasses and/or full face shield where dust formation is possible.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear rubber gloves and protective clothes with lab coat or coveralls/apron. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	White crystalline powder. Solid.
Odor	No odor
Odor threshold	Not Available
pH	5.2 (1% aq. Soln.)
Melting point/freezing point	169°C (336°F)
Initial boiling point and boiling range	300°C (572°F) @ 760 mmHg
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	(air=1) Not Available
Relative density	Not Available
Solubility (ies)	Soluble

Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Flammable
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Moisture; excessive heat; dusting conditions
Incompatible Materials	Potassium; Acetic Anhydride; alkalis
Hazardous Decomposition Products	Borane; Boron oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 Oral – rat – 2660 mg/kg LD50 Oral – mouse – 3450 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Redness, itching
Eyes	Redness, itching, tearing, conjunctivitis
Respiratory	Irritation of mucous membranes, coughing, wheezing, shortness of breath
Ingestion	Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain

Chronic Toxicity	Not Available
Teratogenicity	Teratogenic; presumed human reproductive toxicant
Mutagenicity	Mutagenic effects have occurred in microorganisms
Embryotoxicity	May cause harm; developmental effects have occurred in experimental animals
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Presumed human reproductive toxicant
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	Fish: LC50 (Ptychocheilus lucius) - 279 mg/l (96 hr) Fish: LC50 Lepomis macrochirus – 1021 mg/l (96 hr)
Aquatic Invertebrate	LC50 Daphnia magna – 53.2 mg/l (21 days)

	EC50 Daphnia magna – 133 mg/l (48 hr)
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORT INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Boric Acid
SARA 312	Boric Acid
SARA 313	Not Listed
WHMIS Canada	CLASS D-2A: Very toxic material causing other toxic effects.

16. OTHER INFORMATION

Revision	Date
Revision 1	06/24/2013