

## 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

|                   |  |
|-------------------|--|
| <b>Eyes</b>       | Causes eye irritation.   |
| <b>Inhalation</b> | May be harmful if inhaled. Causes respiratory tract irritation.  |
| <b>Skin</b>       | May be harmful if absorbed through skin. Causes skin irritation. |
| <b>Ingestion</b>  | May be harmful if swallowed.                                     |

### NFPA Ratings

|                        |               |
|------------------------|---------------|
| <b>Health</b>          | 1             |
| <b>Flammability</b>    | 0             |
| <b>Reactivity</b>      | 0             |
| <b>Specific hazard</b> | Not Available |

### HMIS Ratings

|                   |   |
|-------------------|---|
| <b>Health</b>     | 2 |
| <b>Fire</b>       | 0 |
| <b>Reactivity</b> | 0 |
| <b>Personal</b>   | E |

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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| <b>Component</b> | <b>Weight %</b> | <b>CAS #</b> | <b>EINECS# /<br/>ELINCS#</b> | <b>Formula</b>                 | <b>Molecular<br/>Weight</b> |
|------------------|-----------------|--------------|------------------------------|--------------------------------|-----------------------------|
| Boric Acid       | 100             | 10043-35-3   | 233-139-2                    | H <sub>3</sub> BO <sub>3</sub> | 61.83 g/mole                |

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## 4. FIRST-AID MEASURES

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

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## 5. FIREFIGHTING MEASURES

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|--|---|
| <b>Suitable (and unsuitable) extinguishing media</b>                 | Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.  |
| <b>Special protective equipment and precautions for firefighters</b> | Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.   |
| <b>Specific hazards arising from the chemical</b>                    | 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). |

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## 6. ACCIDENTAL RELEASE MEASURES

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|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | See section 8 for recommendations on the use of personal protective equipment.   |
| <b>Environmental precautions</b>   | Do not disperse dust into the air during cleanup. Any release to the environment may require reporting to federal/national or local agencies.  |
| <b>Methods and materials for containment and cleaning up</b>               | 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. |

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## 7. HANDLING AND STORAGE

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### 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.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### Occupational Exposure Controls:

| Component  | Exposure Limits     | Basis | Entity |
|------------|---------------------|-------|--------|
| Boric Acid | 2 mg/m <sup>3</sup> | TLV   | ACGIH  |
|            | 6 mg/m <sup>3</sup> | 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

|                   |   |
|-------------------|---|
| <b>Eyes</b>       | Wear chemical safety glasses and/or full face shield where dust formation is possible.  |
| <b>Inhalation</b> | Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.   |
| <b>Skin</b>       | 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. |
| <b>Other</b>      | Not Available   |

### Other Recommendations

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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|   |                                  |
|---|----------------------------------|
| 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

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

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

|                    |  |
|--------------------|--|
| <b>Skin</b>        | Not Available  |
| <b>Eyes</b>        | Not Available  |
| <b>Respiratory</b> | Not Available  |
| <b>Ingestion</b>   | LD50 Oral – rat – 2660 mg/kg<br>LD50 Oral – mouse – 3450 mg/kg |

### Carcinogenicity

|              |  |
|--------------|--|
| <b>IARC</b>  | 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. |
| <b>ACGIH</b> | 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.            |
| <b>NTP</b>   | 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.                 |
| <b>OSHA</b>  | 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

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

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

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

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

|                    |                                       |
|--------------------|---------------------------------------|
|                    | EC50 Daphnia magna – 133 mg/l (48 hr) |
| <b>Terrestrial</b> | Not Available                         |

|                                      |               |
|--------------------------------------|---------------|
| <b>Persistence and Degradability</b> | Not Available |
| <b>Bioaccumulative Potential</b>     | Not Available |
| <b>Mobility in Soil</b>              | Not Available |
| <b>PBT and vPvB Assessment</b>       | Not Available |
| <b>Other Adverse Effects</b>         | Not Available |

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### 13. DISPOSAL CONSIDERATIONS

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|                           |   |
|---------------------------|---|
| <b>Waste Residues</b>     | 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. |
| <b>Product Containers</b> | 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.

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### 14. TRANSPORT INFORMATION

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

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### 15. REGULATORY INFORMATION

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|                           |  |
|---------------------------|--|
| 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. |

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## 16. OTHER INFORMATION

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| Revision   | Date       |
|------------|------------|
| Revision 1 | 06/24/2013 |
|            |            |
|            |            |

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