

# Safety Data Sheet

## Section 1: Chemical Product and Company Information

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Product Name: BORIC ACID POWDER  
Product #: 8304569, 8304570, 8304572

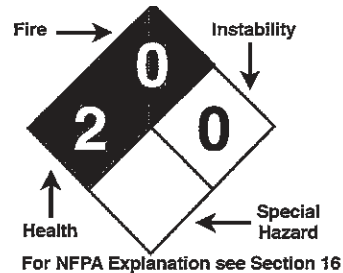
Emergency phone: CHEMTELL - 800-255-3924

CAS#: 10043-35-3

Chemical Name: Boric Acid

Synonyms: Boracic acid; Orthoboric acid.; Hydrogen borate.

Chemical Family: Inorganic Borates



## Section 2: Hazards Identification

### Emergency Overview

**Danger!** Acute toxicity, oral. Reproductive toxicity. May be harmful if swallowed. Ingested, adult, fatal dose reported at 5 to > 30 gr. If exposed or concerned: Get medical advice/ attention. Obtain special instructions before use.

### OSHA Hazards:

Target Organ Effect: Central nervous system, liver and kidneys

Teratogen: May cause harm to the unborn child

Reproductive hazard: May impair fertility

### Target Organs:

Central nervous system, liver and kidneys, testes

GHS Classification (Global Harmonized Classification see Section 16):

Acute toxicity, oral Category 5 (H303)

Reproductive toxicity Category 1B (H360)

GHS Label, Hazards and Precautionary Statements

GHS Pictogram:



(GHS Pictogram Hazards Definitions See Section 16)

Label Signal Word: **Danger!**

Hazard Statements:

May be harmful if swallowed. (H303)

May damage fertility or the unborn child. (H360)

**Precautionary Statements:****Prevention:**

Obtain special instructions before use. (P201)

Do not handle until all safety precautions have been read and understood. (P202)

Wear protective gloves/protective clothing/eye protection/face protection. (P280)

**Response:**

**If exposed or concerned,** Get medical advice/attention... (P308+P313)

Call a **POISON CENTER**/doctor if you feel unwell. (P312)

**Storage:**

Store locked up. (P405)

**Disposal Considerations:**

Dispose of content/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

**NFPA Ratings:** Health: **2**; Flammability: **0**; Reactivity: **0**

**Potential Health Effects:**

**Inhalation:** Causes irritation to the mucous membranes of the respiratory tract. May be absorbed from the mucous membranes.

**Ingestion:** Symptoms parallel absorption via inhalation. Adult fatal dose reported at 5 to > 30 gr.

**Skin Contact:** Causes skin irritation. Not significantly absorbed through the intact skin. Readily absorbed through damaged or burned skin.

**Eye Contact:** Causes irritation, redness, and pain.

**Chronic Exposure:** Prolonged absorption causes weight loss, vomiting, diarrhea, skin rash, convulsions and anaemia. Liver, testes and particularly the kidneys may be susceptible.

**Aggravation of Pre-existing Conditions:**

No information found.

**Carcinogenicity:** No known or anticipated carcinogen. (see section 11)

**Section 3: Composition/Information on Ingredients**

Chemical Name	CAS#	%	ACGIH STEL	ACGIH TWA
Boric Acid H <sub>3</sub> BO <sub>3</sub>	10043-35-3	99.9	6 mg/m <sup>3</sup> 16 hr TLV	2 mg/m <sup>3</sup> 8 hr TLV

**Section 4: First Aid Measures**

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Contact a Physician.**

**Ingestion:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. **Get medical attention immediately.**

**Skin Contact:** Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. **Get medical attention if irritation develops or persists.** Wash clothing before re-use.

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. **Get medical attention immediately.**

**NOTE TO THE PHYSICIAN:** Treat symptomatically and supportively.

**Section 5: Fire Fighting Measures**

**Fire Hazard:** Not considered to be a fire hazard.

**Suitable Extinguishing Media:** Use any means suitable for extinguish surrounding fire.

**Specific Hazards During Fire Fighting:** A mixture of potassium and boric acid may explode on impact.

**Protective Equipment for Fire-Fighters:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face-piece operated in the pressure demand or other positive pressure mode. (see Section 8)

**Section 6: Accidental Release Measures**

**Person-Related Safety Precautions:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. (Section 8).

**Measures for Environmental Protection:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Measures for Cleaning / Collecting:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Measures for Disposal:** Under Federal RCRA, it is the responsibility of the user of Product to determine at the time of disposal, whether the Product falls under the RCRA as a hazardous waste. Follow all Federal, State and Local Regulations in disposal of product.

**Section 7: Handling and Storage**

**Handling:** Use good housekeeping practices to prevent accumulation of dust and follow sound cleaning techniques that will keep airborne particulates at a low level.

**Storage and Receptacles:** Store in closed containers in a cool, dry area. Carbon steel or aluminum containers are suitable for storage. Stainless steel is needed for moist conditions.

**Hygienic Work Practices:** Wash hands after handling this material. Avoid contact especially when skin is cut. Containers of this material may be hazardous when empty since they retain product residues (dust, solids);

**Observe all Warnings and Precautions Listed for the Product.**

**Section 8: Exposure Controls / Personal Protection**

**Exposure Limits:**

Chemical Name	CAS #	ACGIH STEL	ACGIH TWA
Boric Acid H <sub>3</sub> BO <sub>3</sub>	10043-35-3	6 mg/m <sup>3</sup> 16 hr TLV	2 mg/m <sup>3</sup> 8 hr TLV

Remarks: Upper Respiratory Tract irritation Not classifiable as a human carcinogen varies.

**Engineering Controls:** Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

**Personal Protective Measures:**

**Respirators:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. To obtain safe and appropriate gloves for this chemical, contact the supplier of the CE approved gloves and an Industrial Hygienist.

**Eye protection:** Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and Body Protection:** Impervious clothing, this type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**General Hygienic Measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Section 9: Physical and Chemical Properties**

**Chemical Name:** Boric Acid  
**Chemical Formula:**  $H_3BO_3$   
**Chemical Weight:** 61.83  
**Appearance:** white Granules or powder  
**Odor:** odorless  
**Odor Threshold:** no data  
**pH:** 5.1 Aqueous solution: (0.1M)  
**Melting / Freezing Point:** 169°C (336°F)  
**Boiling Point / Boiling Range:** Decomposes  
**Flash Point:** no data  
**Evaporation Rate:** no data  
**Flammability (solid, gas):** no data  
**Flammability Limit: Upper:** no data    **Lower:** no data  
**Explosion limits: Upper:** no data    **Lower:** no data  
**Vapor Pressure (mm Hg):** 2.6 @ 20C (68°F)  
**Vapor Density:** no data  
**Density:** 1.43  
**Solubilities:** 1g/18mL in cold water  
**Partition coefficient (water / n-octanol):** no data  
**Auto-Ignition Temperature:** no data  
**Decomposition Temperature:** no data  
**Viscosity:** no data  
**% Volatiles by volume @ 21C (70F):** 0  
**Specific Gravity:** no data

**Section 10: Stability and Reactivity**

**Chemical Stability:** Stable under ordinary conditions of use and storage. If moisture is present, boric acid can be corrosive to iron.  
**Hazardous Polymerization:** Will not occur.  
**Conditions to Avoid:** moisture, incompatibles.  
**Incompatibilities:** Potassium, acetic anhydride, alkalis, carbonates, and hydroxides.  
**Hazardous Decomposition Products:** Loses chemically combined water upon heating, forming metaboric acid ( $HBO_2$ ) at 212-221°F, then pyroboric acid ( $H_2B_4O_7$ ) at 285-320°F, and Boric anhydride at higher temperatures.

**Section 11: Toxicological Information****Routes of Entry:**

Inhalation, Skin, Ingestion

**Acute toxicity****Oral LD<sub>50</sub>**LD<sub>50</sub> Oral: rat - 2,660 mg/kgLD<sub>Lo</sub> Oral: woman 200 mg/kg**Inhalation LC<sub>50</sub>**

no data

**Dermal LD<sub>50</sub>**

no data

**Other Information on Acute Toxicity**

Investigated as a mutagen, tumorigen, reproductive effector (see NIOSH: RTECS: ED4550000)

**Skin Corrosion/Irritation**

no data

**Serious Eye Damage/Eye Irritation**

no data

**Respiratory or Skin Sensitization**

no data

**Germ cell Mutagenicity**

no data

**Carcinogenicity**

**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP:** No component 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 component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive Toxicity**

Presumed human reproductive toxicant. (see NIOSH: RTECS: ED4550000)

**Teratogenicity**

Fetotoxicity

Presumed human reproductive toxicant. (see NIOSH: RTECS: ED4550000)

**Specific Target Organ Toxicity - single exposure (Globally Harmonized System)**

no data

**Specific Target Organ Toxicity - repeated exposure (Globally Harmonized System)**

no data

**Aspiration Hazard**

no data

**Potential Health Effects**

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion:** May be harmful if swallowed.

**Skin:** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes:** May cause eye irritation.

**Signs and Symptoms of Exposure**

Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes. Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams.

**Synergistic Effects**

no data

**Additional Information**

NIOSH: RTECS: ED4550000

**Section 12: Ecological Information****Toxicity****Toxicity to Fish**

LC<sub>50</sub> - Ptychocheilus lucius - 279 mg/l - 96 h

LC<sub>50</sub> - Lepomis macrochirus (Bluegill) - > 1,021 mg/l - 96 h

**Toxicity to daphnia and other aquatic invertebrates**

LC<sub>50</sub> - Daphnia magna (Water flea) - 53.2 mg/l - 21 d

EC<sub>50</sub> - Daphnia magna (Water flea) - 133 mg/l - 48 h

**Persistence and Degradability**

no data

**Bioaccumulative Potential**

no data

**Mobility in Soil**

no data

**PBT and vPvB Assessment**

no data

**Other adverse Effects**

no data

**Section 13: Disposal Considerations**

**Waste Disposal Recommendation:**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated Packaging:** Dispose of as unused product.

**In Waste Disposal Always Observe all Federal, State, and Local Environmental regulations.**

**Section 14: Transport Information**

DOT (US)	IMDG:	IATA:
Not dangerous goods	Not dangerous goods	Not dangerous goods

**Section 15: Regulatory Information**

**State / Federal Regulations:**

**OSHA Hazards**

Target Organ Effect, Teratogen, Reproductive hazard

**SARA 302 Components**

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

**SARA 313:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

Chemical	CAS#	Revision Date
Boric Acid H <sub>3</sub> BO <sub>3</sub>	10043-35-3	2009-07-17

**New Jersey Right To Know Components**

Chemical	CAS#	Revision Date
Boric Acid H <sub>3</sub> BO <sub>3</sub>	10043-35-3	2009-07-17

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Section 16: Other Information**

**Acronyms**










**ACGIH** - American Conference of Governmental Industrial Hygienists




**ANSI** - American National Standards Institute

**CAS** - Chemical Abstracts Service

**CERCLA** - Comprehensive Environmental Response, Compensation & Liability Act of 1980  
**CFR** - Code of Federal Regulations  
**CHEMTREC** - Chemical Transportation Emergency Center  
**CPR** - Controlled Products Regulations  
**CWC** - Chemical Weapons Convention  
**DOT** - U.S. Department of Transportation  
**DSL** - Canadian Domestic Substance List  
**EHS** - Extremely Hazardous Substance  
**EPA** - U.S. Environmental Protection Agency  
**HMS** - Hazardous Material Identification System  
**IARC** - International Agency for Research on Cancer  
**LEL/UEL** - Lower and Upper Explosive Limit  
**NAERG** - North American Emergency Response Guidebook  
**NIOSH** - National Institute of Occupational Safety and Health  
**NFPA** - National Fire Protection Association  
**NTP** - National Toxicology Program  
**OSHA** - Occupational Safety and Health Administration  
**PEL** - Permissible Exposure Limit (set by OSHA)  
**PPE** - Personal Protective Equipment  
**RCRA** - Resource Conservation and Recovery Act of 1976  
**RTECS** - The Registry of Toxic Effects of Chemical Substances  
**SARA** - Superfund Amendments and Reauthorization Act  
**SDS** - Safety Data Sheet  
**STEL** - Concentration to which workers can be exposed continuously for a **short** period of time without suffering from irritation, irreversible tissue damage or narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency.  
**TDG** (Canadian): Transport of Dangerous Goods Regulations

### GHS Pictograms and Hazards

<b>Health Hazard</b>  <ul style="list-style-type: none"> <li>• Carcinogen</li> <li>• Mutagenicity</li> <li>• Reproductive Toxicity</li> <li>• Respiratory Sensitizer</li> <li>• Target Organ Toxicity</li> <li>• Aspiration Toxicity</li> </ul>	<b>Flame</b>  <ul style="list-style-type: none"> <li>• Flammables</li> <li>• Pyrophorics</li> <li>• Self-Heating</li> <li>• Emits Flammable Gas</li> <li>• Self-Reactives</li> <li>• Organic Peroxides</li> </ul>	<b>Exclamation Mark</b>  <ul style="list-style-type: none"> <li>• Irritant (skin and eye)</li> <li>• Skin Sensitizer</li> <li>• Acute Toxicity (harmful)</li> <li>• Narcotic Effects</li> <li>• Respiratory Tract Irritant</li> <li>• Hazardous to Ozone Layer (Non-Mandatory)</li> </ul>
<b>Gas Cylinder</b>  <ul style="list-style-type: none"> <li>• Gases Under Pressure</li> </ul>	<b>Corrosion</b>  <ul style="list-style-type: none"> <li>• Skin Corrosion/ Burns</li> <li>• Eye Damage</li> <li>• Corrosive to Metals</li> </ul>	<b>Exploding Bomb</b>  <ul style="list-style-type: none"> <li>• Explosives</li> <li>• Self-Reactives</li> <li>• Organic Peroxides</li> </ul>
<b>Flame Over Circle</b>  <ul style="list-style-type: none"> <li>• Oxidizers</li> </ul>	<b>Environment (Non-Mandatory)</b>  <ul style="list-style-type: none"> <li>• Aquatic Toxicity</li> </ul>	<b>Skull and Crossbones</b>  <ul style="list-style-type: none"> <li>• Acute Toxicity (fatal or toxic)</li> </ul>

NFPA Rating Explanation Guide					
Rating Number	Health Hazard	Flammability Hazard	Instability Hazard	Rating Symbol	Special Hazard
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	BIO	Biohazard
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	COR	Strong Corrosive
0	No Hazard	Will not burn	Stable	CRYO	Cryogenic
				OXY	Oxidizer
					Radioactive
					Reacts violently or explosively with water
					Reacts violently or explosively with water or oxidizer

*This chart for reference only - For complete specifications consult the NFPA Standard*

**TLV** - Threshold Limit Value (set by ACGIH)  
**TWA** - 8-hour Time Weighted Average  
**TSCA** - US Toxic Substance Control Act  
**WHMIS** - Workplace Hazardous Material Information System  
**SDS Issue Date:** n/a  
**Revised Date:** 12-17-2014  
**Supersedes:** 09-23-2014