



SAFETY DATA SHEET

DREXEL BORIC ACID BORON MICRONUTRIENT

Section 1: Material Identification

Product Name: Drexel Boric Acid Boron Micronutrient
CAS NO: 10043-35-3
Formula: H₃BO₃
Company: Drexel Chemical Company
1700 Channel Avenue
Memphis, TN 38106
Synonyms: Orthoboric acid, boracic acid
Identifiers:
EINECS: 233-139-2
RTECS: ED4550000
DOT label: Non-Regulated

Emergency Telephone Number:

CHEMTREC Drexel Chemical Co.
Tel: 1-800-424-9300 901-774-4370

Section 2: Hazard Identification (As defined by the OSHA Hazard Communication Standard, 29)

GHS classification: Acute toxicity - inhalation Category 4
Health Hazards: Eye damage/irritation Category 2B
Toxic to reproduction Category 2

GHS label elements:
Signal Word: Warning



Hazard Statements: Harmful if inhaled.
Causes eye irritation.
Suspected of damaging fertility or the unborn child.

Precautionary statements:

- Prevention:** Avoid breathing dust or vapors. Use only outdoors or in well-ventilated area.
Wash exposed skin thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** **If inhaled:** Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
- Storage:** Store locked up.
- Disposal:** Dispose of in accordance with your local or area regulatory authorities.

Section 3: Composition Information

<u>Components</u>	<u>CAS No.</u>	<u>% By Wt.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Active Ingredient: Boron	7440-42-8	17.5%	15 mg/m ³	3 mg/m ³
Inert Ingredients		82.5%	N.A	N.A

Section 4: First-Aid Measures

Have the product container or label with you when calling a poison control center or doctor or when going for treatment.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If eye irritation persists, get medical attention.

If Swallowed: Call a poison control center or doctor if you feel unwell. Rinse mouth.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. If skin irritation occurs, get medical advice.

If Inhaled: Move person to fresh air and keep comfortable. Call a poison control center or doctor for treatment advice if you feel unwell.

Section 5: Fire Fighting Measures

Fire Hazards: Boron is a flame retardant, fire hazard will involve surrounding materials.

Flammability classification (OSHA 29 CFR 1910.1200): Non-Combustible

Flash point: N/A

Lower flammable limit (% by volume): N/Av

Upper flammable limit (% by volume): N/Av

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Evacuate the area and fight the fire from upwind at a safe distance to avoid hazardous vapors or decomposition products. Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff.

Firefighting media: Use media suitable for surrounding fires including dry foam, dry chemical, carbon dioxide, or water fog when fighting fires involving this product. Do not use water jet, as this may spread burning material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Hazardous Combustion Products: None from product.

(NFPA): Health: Flammability: Reactivity:
2 0 0

Section 6: Accidental Release Measures

Steps to be taken if Material is Released or Spilled:

- Avoid dust formation. Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Drexel Chemical Co. for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Personal Precautions:

- Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Ventilate area of spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions:

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7: Handling and Storage

KEEP OUT OF REACH OF CHILDREN

Handling: **General Handling:** Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not swallow. Avoid breathing dust. Use with adequate ventilation. Wear long-sleeved shirt, long pants and shoes with socks when handling. Keep away from heat, sparks and flame. See Section 8, Exposure Controls and Personal Protection.

Storage: Store in a cool, dry, ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Section 8: Exposure Controls / Personal Protection

Exposure Limits: TLV Boric acid 3 mg/m³

Personal Protection:

Eye/Face Protection: Wear safety glasses with side shields or chemical splash goggles to prevent dust from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

Skin Protection: Use long-sleeved shirt, long pants, shoes and socks. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: If environment is excessively dusty, use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR") or Polyvinyl chloride ("PVC" or "vinyl").

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When handling in enclosed areas, when large quantities of dusts are generated or prolonged exposure is possible in excess of the TLV, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls:

Ventilation: When handling this product proper ventilation is required to maintain exposure below the TLV. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Section 9: Physical and Chemical Properties

Appearance:	White free-flowing crystal
Odor:	Odorless
Odor threshold:	N/Av
pH:	N/Av
Melting point/freezing point:	N/Av
Solubility (water):	1g/18ml cold water
Boiling point:	N/Av
Flash point:	N/A
Evaporation rate:	N/A
Flammability:	Non-flammable
Upper/lower flammability or explosive limits:	N/Av
Vapor pressure (mmHg):	N/A
Vapor density:	N/A
Bulk density	0.84 gm/cc
Partition coefficient (n-octanol/water):	N/Av
Autoignition temperature:	N/A
Decomposition temperature:	N/Av
Viscosity:	N/A
Explosive properties:	N/A
% Volatiles:	N/Av

Section 10: Stability and Reactivity

Stability/Instability: Stable under normal conditions. When heated, water is lost forming Metaboric Acid (HBO_2). On further heating, the material is converted to boric oxide (B_2O_3)

Conditions to Avoid: Keep this product away from moisture.

Incompatible Materials: Boric acid as a weak acid that may cause corrosion of base metals. Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas that could create an explosive hazard. Avoid contact with strong reducing agents. Store according to good industrial practice.

Hazardous Polymerization: Will not occur.

Thermal Decomposition: Decomposition products can include but are not limited to: Boranes, hydrogen, boron oxides.

Section 11: Toxicological Information

Data presented for Boric Acid:

Acute Toxicity:

Ingestion:

- Oral LD50, (rat): 3500-4100 mg/kg

Dermal:

- Dermal LD50, (rabbit): >2,000 mg/kg

Inhalation:

- LC50, (rat): > 2.0 mg/L

Eye Irritation (rabbit):

- Mildly irritating

Skin Irritation (rabbit):

- Non-irritant

Sensitization Skin (Guinea Pig):

- Non-sensitizer

Chronic Toxicity:

- No increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust.

Carcinogenicity/ mutagenicity:

- Not listed as a carcinogen by EPA, IARC, NTP or OSHA. No mutagenic activity was observed for Boric Acid in a recent battery of four short-term mutagenicity assays.

Reproductive effects:

- A human study of occupationally exposed Borate worker population showed no adverse reproductive effects. Animal studies indicate that Boric Acid reduces or inhibits sperm production, causes testicular atrophy, and, given to pregnant animals during gestation, may cause developmental changes. These feeding studies were conducted under chronic exposure conditions leading to doses many times in excess of those that could occur through inhalation of dust in the occupational setting.

Section 12: Ecological Information

Boron (B) is the element in boric acid which is used by convention to report borate product ecological effects. It occurs naturally in seawater at an average concentration of 5 mg B/L and generally occurs in freshwater at concentrations up to 1 mg B/L. In dilute aqueous solutions the predominant species present is dissociated boric acid. To convert boric acid into equivalent boron (B) content, multiply by 0.1748.

ENVIRONMENTAL FATE:

Boron is naturally occurring and ubiquitous in the environment. Boric acid decomposes in the environment to natural borate.

Aquatic Toxicity:

- Rainbow Trout: 24 day LC50: 150 mg B/L
- Daphnia magna: 24 hour EC50: 133 mg B/L
- Green algae: 96 hour EC10: 24 mg B/L

Section 13: Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Section 14: Transport Information

DOT: Non-Regulated

IMDG: Non-Regulated

ICAO/IATA: Non-Regulated

Freight Description: Boric Acid, Solid, N.O.S.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

OSHA Hazard Communication Standard:

- This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Label Human Hazard Statements:

- **WARNING:** Causes skin and eye irritation. Harmful if swallowed. Suspected of damaging fertility or the unborn child. Do not get on skin, in eyes or on clothing. Take off contaminated clothing and wash before reuse. If swallowed, call poison center, doctor/physician if you feel unwell. Do not eat, drink or smoke when using this product. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco or using the toilet.

EPA/CERCLA Reportable Quantity: None Known

SARA/TITLE III:

- **Sec. 302. Extremely Hazardous Substance Notification:** This material is not known to contain any Extremely Hazardous Substances.
- **Sec. 311/312. Hazard Categories:** Acute health hazard
Chronic health hazard
- **Sec. 313. Toxic Chemical(s):** This material is not known to contain any Toxic Chemical constituents.
- **RCRA Waste Code:** Not applicable

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

- This product is not listed.

Toxic Substances Control Act (TSCA):

- All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

Section 16: Other Information

Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

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