

DREXEL BORIC ACID BORON MICRONUTRIENT

SECTION 1: MATERIAL IDENTIFICATION

Product Name: Drexel Boric Acid Boron Micronutrient
Product Usage: Micronutrient fertilizer
Manufacturer: Drexel Chemical Company
Address: 1700 Channel Avenue
 PO Box 13327
 Memphis, Tennessee, 38113-0327, USA
 901-774-4370

Emergency Telephone Numbers: CHEMTREC 800-424-9300
 DREXEL CHEMICAL COMPANY 901-774-4370

SECTION 2: HAZARD IDENTIFICATION
 (As defined by the OSHA Hazard Communication Standard, 29)

Label Elements:
Signal Word:

Pictograms:

DANGER



Classifications:
Hazard Class:

<u>Toxicity Study:</u>	<u>Category:</u>
Acute Toxicity, Inhalation	Category 4
Serious eye damage / Irritation	Category 2B
Reproductive Toxicity	Category 2

Hazard Statements:

<u>H Code:</u>	<u>Statement:</u>
H322	Harmful if inhaled
H319	Causes eye irritation
H361	Suspected of damaging fertility or the unborn child.

Precautionary Statements:

Prevention:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protection equipment as required.
- If exposed or concerned: Get medical advice/ attention.
- Wash face, hands and any exposed skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- In case of inadequate ventilation, wear respiratory protection.
- Avoid release into the environment.



SAFETY DATA SHEET

Response:

- If in Eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get immediate medical advice/attention.
- If Swallowed:** Call a POISON CENTER or doctor/physician if you feel unwell. Treat symptomatically.
- If Inhaled:** Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER or doctor if you feel unwell.
- If on Skin or Clothing:** Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
- If exposed or concerned:** None available, get medical attention.

Storage:

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal:

Dispose of contents/container in accordance with your local or area regulatory authorities.

Specific hazards:

None available.

SECTION 3: COMPOSITION INFORMATION

<u>Chemical Name:</u>	<u>Synonym:</u>	<u>CAS No.:</u>	<u>EC No.:</u>	<u>RTECS:</u>	<u>% By Wt.:</u>
Active Ingredient: Boric Acid (Boron)	Boric Acid	10043-35-3	233-139-2	ED4550000	>99.0% (17.5%)
Inert Ingredients:	N/A	N/A	N/A	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 going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.

- Eye Contact:** 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. Call a poison control center or doctor for treatment advice.
- If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Skin/Clothing Contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
- If Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
- Indication of Medical Attention and Special Treatment Needed:** None / Treat symptomatically



SECTION 5: FIRE FIGHTING MEASURES

Fire Fighting 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.

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.


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.

Specific 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

Hazardous Combustion Products: None, boric acid is non-flammable, combustible or explosive. The product is itself a flame retardant.

National Fire Protection Association:

NFPA: 	Health	Fire	Reactivity		
	2	0	0		
Ratings:	4-Extreme	3-High	2-Moderate	1-Slight	0-Insignificant

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to SECTION 7: HANDLING AND STORAGE, for additional precautionary measures. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION.

Environmental Precautions: Prevent from entering soil, ditches, sewers, waterways and/or groundwater. Refer to SECTION 12: ECOLOGICAL INFORMATION.

Steps to be taken if Material is Released or Spilled: Control the spill at its source.
 Small spills: Apply suitable absorbent and sweep up. Collect in suitable and properly labeled containers.
 Large spills: Contact Drexel Chemical Company for clean-up assistance. Refer to SECTION 13: DISPOSAL CONSIDERATIONS, for additional information. Prevent entry into waterways, sewers, basements or confined areas.

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. Good housekeeping and dust prevention procedures should be followed to minimize dust generation and accumulation. Use with appropriate local exhaust ventilation. The product should be kept away from strong reducing agents. Apply above handling advice when mixing with other substances. Wear long-sleeved shirt, long pants and shoes with socks when handling. Keep away from heat, sparks and flame. Refer to SECTION 8: EXPOSURE CONTROLS / 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

Occupational Exposure Limits:

Components:	OSHA PEL	ACGIH TLV
Boric Acid	N/A	3 mg/m ³

THIS SECTION IS FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD REFER TO THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Engineering Controls:

Ventilation: Investigate engineering techniques to reduce exposures.

Personal Protection:

Eye/Face Protection: Eye contact should be avoided through the use of chemical safety glasses, goggles, or a face shield selected in regard to exposure potential. Wear chemical splash goggles to prevent vapors or mists from entering the eyes. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

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

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").

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. 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.

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).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Reported Value
Physical State	Powder / free-flowing crystalline solid
Appearance / Color	White
Odor	Odorless
Odor threshold	Not available
pH	3.0 – 4.0
Melting point	169°C
Freezing point	Not available
Boiling point	300°C
Flash point	Not available
Evaporation rate	Not available
Flammability	Not available
Upper flammability/explosive limits	Not available
Lower flammability/explosive limits	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	1.432 g/cm ³
Solubility in water	1 g / 18 ml cold water
Solubility in organic solvents	Not available
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Non-explosive
Oxidizing properties	Not available
Dissociation Constant	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Thermally stable at typical use temperatures and in closed containers.
Chemical Stability:	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 ₂ O ₃).
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Exposure to moisture and incompatible materials.
Incompatible Materials:	Boric acid reacts as a weak acid which may cause corrosion of base metals. Avoid contact with strong reducing agents such as metal hydrides or alkali metals.
Hazardous Decomposition Products:	Decomposition products can include but are not limited to: Boranes, hydrogen, boron oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:		
Potential routes of exposure/potential health effects: Skin contact. Inhalation. Ingestion.		
Acute Oral:	LD₅₀ (Rat):	3500-4100 mg/kg
Acute Dermal:	LD₅₀ (Rat):	>2,000 mg/kg
Acute Inhalation:	LC₅₀ (Rat):	>2.0 mg/L
Eye Irritation:	(Rabbit):	Mildly irritating
Skin Irritation:	(Rabbit):	Non-irritant
Skin Sensitization:	(Guinea Pig):	Non-sensitizer



SAFETY DATA SHEET

Chronic Toxicity:	No increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust.
Carcinogenicity:	Not listed as a carcinogen by EPA, IARC, NTP or OSHA.
Mutagenicity:	No mutagenic activity was observed for Boric Acid in a recent battery of four short-term mutagenicity assays.
Teratogenicity:	No data available
Reproductive Toxicity:	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.
Developmental Toxicity:	No data available
Other Hazards Effects:	None/ no data available

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

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

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.

ECO-ACUTE TOXICITY:

Aquatic Toxicity:	Rainbow Trout, LC₅₀ 24 hour	150 mg B/L
	Daphnia magna, LC₅₀ 24 hour	133 mg B/L

Algal Toxicity:	Green Algae, LC₅₀ 96 hour	24 mg B/L
------------------------	---	-----------

Persistence and degradability: Not persistent

Bioaccumulation: Not bio-accumulative

Mobility in soil: No data available

Other adverse effects: Do not contaminate water supplies, lakes, streams, ponds or drains with this product.

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: Not Regulated
IMDG: Not Regulated
IATA / ICAO: Not Regulated

UN Identification No.: Not applicable
Proper Shipping Name: Not applicable
Hazard Class: Not applicable
Packing Group: Not applicable
Reportable Quantity: Not applicable
Environmental Hazard: Not applicable
Freight Description: Boric Acid, Sold, N.O.S.
ERG Guide No.: 171

Transport Information Note: Boric acid has no UN Number, and is not regulated under international rail, road, water or air transport regulations. Not a dangerous good.

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 CFR1910.1200.

Label Signal Word: WARNING
Label Information: KEEP OUT OF REACH OF CHILDREN
Label Information: Hazards to Humans and Domestic Animals
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.

EPCRA SARA Title III Classification:
Section 302: Extremely Hazardous Substance Notification: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Sections 311 and 312:
Immediate (Acute) Health Hazard: Yes
Delayed (Chronic) Health Hazard: Yes
Fire Hazard: No
Reactive Hazard: No
Sudden Release of Pressure Hazard: No

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

CERCLA/SARA 304 Reportable Quantity (RQ): Not listed

RCRA Hazardous Waste Classification (40 CFR 261): Not listed



Date Issued: 04/17/2019

Supersedes: 05/05/2018

US EPA 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.

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

Boric Acid

Listed as causing:	Not Listed
Listing date:	Not listed
Listing basis:	Not listed

SECTION 16: OTHER INFORMATION

Date Issued: August 22, 2019

Date Supersedes: March 5, 2018

Revision: 0

For all non-emergency questions about this product, please contact:

1700 Channel Avenue
PO Box 13327
Memphis, Tennessee 38113-0327, USA

Phone: 901-774-4370
Fax: 901-774-4666
Website: www.drexchem.com

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 above. 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.