



BORIC ACID

PURITAN PRODUCTS

Effective Date: 01/01/13
Replaces Revision: 09/12/03

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: BORIC ACID

Synonyms: Ortho-Boric Acid, Boracic Acid, Borofax

Chemical Formula: H₃BO₃

Recommended Use of the Chemical and Restrictions On Use: Laboratory Reagent

Manufacturer / Supplier: Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225

Emergency Phone Number: 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:

Acute toxicity, Oral (Category 5)

Reproductive toxicity (Category 1B)

Risk Phrases:

R60: May impair fertility.

R61: May cause harm to the unborn child.

Label Elements:

Trade Name: BORIC ACID

Signal Word: Danger



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.

3. Composition / Information on Ingredients

CAS Number: 10043-35-3
EC Number: 233-139-2
Index Number: 005-007-00-2
Molecular Weight: 61.83 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Boric Acid	10043-35-3	233-139-2	100%	Yes	Substance

4. First-aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Get medical attention.

Ingestion: Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

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.

5. Fire-fighting Measures

Fire: Not considered to be a fire hazard.

Explosion: A mixture of potassium and boric acid may explode on impact.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Special Information: 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.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Contain and recover liquid when possible. Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush to sewer!

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities: Keep in a well closed container stored under cold to warm conditions, 2 to 40 C, (36 to 104F.) Protect against physical damage. Carbon steel or aluminum containers are suitable for storage. Stainless steel is needed for moist conditions. Use good housekeeping practices to prevent accumulation of dust and follow sound cleaning techniques that will keep airborne particulates at a low level. Wash hands after handling this material. Avoid contact especially when skin is cut or abraded. 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.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits: Boric Acid is listed/regulated by OSHA, Cal OSHA and ACGIH as "Particulate Not Otherwise Classified" or "Nuisance Dust."

OSHA Permissible Exposure Limit (PEL): 15 mg/m³ total dust and 5 mg/m³ respirable dust

ACGIH Threshold Limit Value (TLV): 10 mg/m³

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. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerin, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in Oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: White powder or granules

Odor: Odorless

Odor Threshold: Not determined

pH: 5.1 Aqueous solution: (0.1M)

% Volatiles by volume @ 21C (70F): 0

Melting Point: 169C (336F)

Boiling Point / Boiling Range: Decomposes

Flash Point: Not applicable

Evaporation Rate (BuAC=1): No information found

Flammability: Not applicable

Upper / Lower Flammability or Explosive Limits: Not applicable

Vapor Pressure (mm Hg): 2.6 @ 20C (68F)

Vapor Density (Air=1): No information found

Relative Density: 1.44 g/cm³

Solubility: 1g/18mL in cold water

Partition Coefficient: n-octanol / water: No information found

Auto-ignition Temperature: Not applicable

Decomposition Temperature: No information found

Viscosity: No information found

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage. If moisture is present, boric acid can be corrosive to iron.

Possibility of Hazardous Reactions and Conditions to Avoid: No data available for hazardous reactions. Avoid incompatible materials and exposure to moisture.

Incompatible Materials: Potassium, Acetic Anhydride, alkalis, carbonates, and hydroxides.

Hazardous Decomposition Products: Loses chemically combined water upon heating, forming Metaboric Acid (HBO₂) at 212-221F, then Pyroboric Acid (H₂B₄O₇) at 285-320F, and Boric Anhydride at higher temperatures.

11. Toxicological Information

Emergency Overview: WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS.

Potential Health Effects:

Inhalation: Causes irritation to the mucous membranes of the respiratory tract. May be absorbed from the mucous membranes, and depending on the amount of exposure could result in the development of nausea, vomiting, diarrhea, drowsiness, rash, headache, fall in body temperature, low blood pressure, renal injury, cyanosis, coma, and death.

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

Skin Contact: Causes skin irritation. Not significantly absorbed through the intact skin. Readily absorbed through damaged or burned skin. Symptoms of skin absorption parallel inhalation and ingestion.

Eye Contact: Causes irritation, redness, and pain.

Chronic Exposure: Prolonged absorption causes weight loss, vomiting, diarrhea, skin rash, convulsions and anemia. Liver and particularly the kidneys may be susceptible. Studies of dogs and rats have shown that infertility and damage to testes can result from acute or chronic ingestion of Boric Acid. Evidence of toxic effects on the human reproductive system is inadequate.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) No data available.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Boric Acid (10043-35-3)	No	No	None

Acute Toxicity:

Oral rat LD50: 2660 mg/kg; oral woman LDLo: 200 mg/kg; investigated as a mutagen, tumorigen, reproductive effector.

12. Ecological Information

Ecotoxicity: The EC50/48-hour values for daphnia are over 100 mg/l. This material may be toxic to aquatic life.

Persistence and Degradability: No information found.

Bioaccumulative Potential: No information found.

Mobility in Soil: No information found.

Other adverse effects: No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling, should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Not regulated

Maritime Transport IMDG/GGVSea

Not regulated

Air Transport ICAO-TI and IATA-DGR

Not regulated

15. Regulatory Information

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Boric Acid (10043-35-3)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Boric Acid (10043-35-3)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQ	TPQ	List Chemical	Catg.
Boric Acid (10043-35-3)	No	No	No	No

Federal, State & International Regulations - Part 2

Ingredient	RCRA		TSCA
	CERCLA	261.33	8(d)
Boric Acid (10043-35-3)	No	No	No

Chemical Weapons Convention: No		TSCA 12(b): No		CDTA: No
SARA 311/312:	Acute: Yes	Chronic: Yes	Fire: No	Pressure: No
Reactivity: No	Pure / Solid			

Australian Hazchem Code: None allocated.

Poison Schedule: S5

16. Other Information

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