

Quality Borate Company

MATERIAL SAFETY DATA SHEET

BoraSol-WP / BoraSol-MU

SECTION I – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: BoraSol-WP / BoraSol-MU
Chemical Formula: $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$
Chemical Name/Synonyms: Disodium Octaborate Tetrahydrate
Chemical Family: Inorganic Borates
CAS Registry Number: 12280-03-4
TSCA Inventory Number: 12008-41-2
EPA Reg. Number: 69529-2
Emergency Phone Number: Toll Free 866-BORATES (866-267-2837) (24-hour service)
Manufacturer: Quality Borate Company
3690 Orange Place, Suite 495
Cleveland, OH 44122

NFPA Classification:

Health	0
Flammability	0
Reactivity	0

HMIS Classification:

Red (Flammability)	0
Yellow (Reactivity)	0
Blue (Acute Health)	1*

*Chronic Effects

SECTION II – HAZARD IDENTIFICATION

OVERVIEW:

BoraSol is a white, odorless, powdered substance that is not flammable, combustible, or explosive, and it presents no unusual hazard if involved in a fire. BoraSol presents little or no hazard (to humans) and has low acute oral and dermal toxicities.

POTENTIAL ECOLOGICAL EFFECTS:

Large amounts of BoraSol can be harmful to boron-sensitive plants and other ecological systems.

POTENTIAL HEALTH EFFECTS:

Routes of Exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not a concern because BoraSol is not absorbed through intact skin.

Inhalation: Occasional mild irritation effects to nose and throat may occur from inhalation of BoraSol dusts at levels greater than 10 mg/m³.

Ingestion: Products containing BoraSol are not intended for ingestion. BoraSol has a relatively low acute toxicity. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Eye Contact: BoraSol is non-irritating to eyes in normal industrial use.

Skin Contact: BoraSol does not cause irritation to intact skin.

Target Organs: No target organ has been identified in humans. High dose animal ingestion studies indicate the testes are the target organs in male animals, though human studies have not shown such results.

Signs and Symptoms of Exposure: Symptoms of accidental over-exposure to BoraSol have been associated with ingestion or by absorption through large areas of damaged skin. These include nausea, vomiting, and diarrhea with delayed effects of skin redness and peeling.

SECTION III – FIRST AID MEASURES

Inhalation: No specific treatment is necessary since BoraSol is not likely to be hazardous by inhalation. Prolonged exposure to dust levels in excess of regulatory limits should always be avoided.

Eye Contact: Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

Skin Contact: Wash with soap and water.

Ingestion: Swallowing less than one teaspoon will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

NOTE TO PHYSICIANS: Observation only is required for adult ingestion of less than 6 grams of BoraSol. For ingestion in excess of 6 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. BoraSol analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment. (For further information: Litovitz T.L., Norman, S.A., Veltri, J.C., Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. 1986; 4:427-458).

SECTION IV – FIRE-FIGHTING MEASURES

General Hazard: None, because BoraSol is not flammable, combustible, or explosive. The product is itself a flame retardant.

Extinguishing Media: Any fire extinguishing media may be used on nearby fires.

Flammability Classification (29 CFR 1910.1200): Non-flammable solid.

SECTION V – ACCIDENTAL RELEASE MEASURES

General: BoraSol is a water-soluble, white powder that may cause damage to trees or vegetation by root absorption.

Land Spill: Vacuum, shovel or sweep up BoraSol and place in containers for disposal in

accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.

SECTION VI – HANDLING AND STORAGE

Storage Temperature: Room Temperature (72° F).

Storage Pressure: Atmospheric

Storage Conditions: Dry, indoor storage.

Shelf Life: Since BoraSol is an inorganic, naturally occurring borate, it will not react or decompose and will last indefinitely under ideal conditions. But since high moisture and temperature conditions can cause caking, it is advised that the product be used within a year.

SECTION VII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use local exhaust ventilation to keep airborne concentrations of BoraSol dust below permissible exposure levels.

Personal Protection: Where airborne concentrations are expected to exceed exposure limits, NIOSH/MSHA certified respirators must be used. Eye goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

Occupational Exposure Limits: BoraSol is listed/regulated by OSHA, Cal OSHA and ACGIH as “Particulate Not Otherwise Classified” or “Nuisance Dust.”

OSHA: PEL ☐ -15 mg/m³ total dust and
- 5 mg/m³ respirable dust

ACGIH: TIV -10 mg/m³

Cal OSHA: PEL ☐ -10 mg/m³

☐ PEL = “Permissible Exposure Limit”

TLV = “Threshold Limit Value”

SECTION VIII – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White, odorless, crystalline solid
Specific Gravity: 1.9
Sol. in Water: 9.7% (20 C)

Avg. Bulk Density 25 pounds per cubic foot
pH: 8.0 (5% solution)
7.6 (10% solution)

SECTION IX – TOXICOLOGICAL INFORMATION

Ingestion (Acute Oral Toxicity): Low acute oral toxicity; LD₅₀ in rats is 2550 mg/kg of body weight.

Skin (Acute Dermal Toxicity): Low acute dermal toxicity; LD₅₀ in rabbits is greater than

2000 mg/kg of body weight. BoraSol is not absorbed through intact skin.

Primary Skin Irritation Index: 0 (zero)
BoraSol is non-corrosive.

Eye: Draize test in rabbits produced mild eye irritation effects.

SECTION X – ECOLOGICAL INFORMATION

Phytotoxicity: Although boron is an essential micronutrient for healthy growth of plants, it can be harmful to boron-sensitive plants in higher quantities. Care should be taken to minimize the amount of BoraSol released to the environment.

Persistence/Degradation: Boron is naturally occurring and ubiquitous in the environment.

Soil Mobility: BoraSol is soluble in water and is leachable through normal soil.

SECTION XI – DISPOSAL

Disposal Guidance: Small quantities of BoraSol can usually be disposed of at Municipal Landfill sites. No special disposal treatment is required, but refer to state and local regulations for applicable site-specific requirements. Tonnage quantities of product are not

recommended to be sent to landfills. Such product should be re-used for an appropriate application.

RCRA (40 CFR 261): BoraSol is not listed under any sections of the Federal Resource Conservation and Recovery Act (RCRA).

SECTION XII – TRANSPORT INFORMATION

BoraSol Hazardous Material Classification: BoraSol is not a U.S. Department of Transportation (DOT) Hazardous Material.

BoraSol Hazardous Substances Classification: BoraSol is not a DOT Hazardous substance.

International Transportation: BoraSol has no U.N. Number and is not regulated under any international rail, highway, water or air transport regulations.

SECTION XIII – REGULATORY INFORMATION

RCRA: BoraSol is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act or regulations (40 CFR 261 et seq.)

Superfund: CERCLA/SARA. BoraSol is not listed under CERCLA (the Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA (Superfund Amendments and Reauthorization Act).

Safe Drinking Water Act: BoraSol is not regulated under the SDWA, 42 USC 300g-1, 40CFR 141 et. seq. Consult state and local regulations for possible water quality advisories regarding boron.

IARC: The International Agency for Research on Cancer (of the World Health Organization) does not list or categorize BoraSol.

California Proposition 65: BoraSol is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.



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