

SODIUM BORATE

SDB

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Borax, anhydrous Sodium borate Sodium pyroborate Sodium tetraborate, anhydrous	Solid White Odorless Sinks and mixes slowly with water.
Keep people away. Avoid contact with solid and dust. Notify local health and pollution control agencies. Protect water intakes.	
Fire	Not flammable.
Exposure	CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. If in eyes, hold eyelids open and flush with plenty of water. SOLID Irritating to skin and eyes. If swallowed will cause headache, dizziness, nausea, or vomiting. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.
Water Pollution	Dangerous to aquatic life in high concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: $\text{Na}_2\text{B}_4\text{O}_7$
- 2.3 IMO/UN Designation: Not listed
- 2.4 DOT ID No.: Not listed
- 2.5 CAS Registry No.: 1344-90-7
- 2.6 NAERG Guide No.: Not listed
- 2.7 Standard Industrial Trade Classification: 52384

3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Dust mask and goggles or face shield
- 3.2 Symptoms Following Exposure: No adverse effects from inhaling borax have been reported. Ingestion may cause acute or chronic effects; initial symptoms are nausea, vomiting, and diarrhea; these may be followed by weakness, depression, headaches, skin rashes, drying skin, cracked lips, and loss of hair; shock may follow ingestion of large doses and may interfere with breathing. Eye contact with powder or solutions may cause irritation; no chronic effects have been recognized, but continued contact should be avoided. Local skin irritation may result from contact with powder or strong solutions; the latter may cause chronic dermatitis on prolonged contact, and if skin is broken, enough boron may be absorbed to cause boron poisoning (symptoms are similar to those for ingestion).
- 3.3 Treatment of Exposure: INHALATION: move to fresh air; call physician immediately; give mouth-to-mouth resuscitation if breathing has ceased; give oxygen if authorized by physician; keep victim warm. INGESTION: get medical attention quickly; if victim is conscious, give warm salty or soapy water to induce vomiting; repeat until vomitus is clear; additional water may be given to wash out stomach. EYES: get medical attention quickly; flush with copious amounts of water for at least 15 min. (30 min. if physician is not available), holding eyelids apart. SKIN: flush with water; remove contaminated clothing under shower; do not use chemical neutralizers; get medical attention unless burn is minor.
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Grade 2; $\text{LD}_{50} = 0.5\text{--}5 \text{ g/kg}$
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Currently not available
- 3.10 Vapor (Gas) Irritant Characteristics: Currently not available
- 3.11 Liquid or Solid Characteristics: Currently not available
- 3.12 Odor Threshold: Currently not available
- 3.13 IDLH Value: Not listed.
- 3.14 OSHA PEL-TWA: Not listed.
- 3.15 OSHA PEL-STEL: Not listed.
- 3.16 OSHA PEL-Ceiling: Not listed.
- 3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

- 4.1 Flash Point: Not flammable
- 4.2 Flammable Limits in Air: Not flammable
- 4.3 Fire Extinguishing Agents: Not pertinent
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Not pertinent
- 4.6 Behavior in Fire: Compound melts to a glassy material that may flow in large quantities and ignite combustibles elsewhere.
- 4.7 Auto Ignition Temperature: Not pertinent
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: Not pertinent
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: Not pertinent.
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: No reaction
- 5.2 Reactivity with Common Materials: Currently not available
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 3,000-3,300 ppm*/minnow/min. lethal dose/fresh water
8,200 ppm/48 hr/mosquitofish/TL*/fresh water
*Time period not specified.
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): None
- 6.4 Food Chain Concentration Potential: None
- 6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: In addition to anhydrous sodium borate, both pentahydrate and decahydrate are commercially available, all in technical grade. The decahydrate is also available in U.S.P. grade.
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open
- 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available
- 7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Not listed
- 8.2 49 CFR Class: Not pertinent
- 8.3 49 CFR Package Group: Not listed.
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification: Not listed
- 8.6 EPA Reportable Quantity: Not listed.
- 8.7 EPA Pollution Category: Not listed.
- 8.8 RCRA Waste Number: Not listed
- 8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15° C and 1 atm: Solid
- 9.2 Molecular Weight: 201.26
- 9.3 Boiling Point at 1 atm: Not pertinent
- 9.4 Freezing Point: Not pertinent
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 2.367 at 20°C (solid)
- 9.8 Liquid Surface Tension: Not pertinent
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
- 9.12 Latent Heat of Vaporization: Not pertinent
- 9.13 Heat of Combustion: Not pertinent
- 9.14 Heat of Decomposition: Not pertinent
- 9.15 Heat of Solution: -92 Btu/lb = -51 cal/g = -2.1 X 10⁵ J/kg
- 9.16 Heat of Polymerization: Not pertinent
- 9.17 Heat of Fusion: Currently not available
- 9.18 Limiting Value: Currently not available
- 9.19 Reid Vapor Pressure: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
68	2.720		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T