



Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

SECTION I

PRODUCT AND COMPANY IDENTIFICATION

Product: Sodium Borate, decahydrate
This MSDS is valid for all grades and catalog #'s

Synonyms: Sodium tetraborate decahydrate; Borates, tetra, sodium salt, decahydrate; Sodium pyroborate;

Formula: Na₂B₄O₇·10(H₂O)

Manufacturer: PHARMCO-AAPER

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SECTION II

COMPOSITION / INFORMATION ON INGREDIENTS

% by wt	Material	CAS #	TLV/PEL	LC50/LD50
100	Sodium Borate, decahydrate	1303-96-4	TWA: 0.31 ORAL (LD50): TWA: 5 from ACGIH (TLV) [United States] 2000 mg/kg	ORAL (LD50): Acute: 2660 mg/kg [Rat]. 2000 mg/kg [Mouse]. 5330 mg/kg [Guinea pig].

SECTION III

HAZARDS IDENTIFICATION

Potential Acute Health Effects: Hazardous in case of eye contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant), of ingest

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to kidneys, lungs.

Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION IV

FIRST AID

Obtain medical attention for all cases of over-exposure.

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Hazardous Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Hazardous Inhalation: Not available.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Hazardous Ingestion: Not available.

SECTION V

FIRE FIGHTING MEASURES

Fire:

Flammability of the Product: Non-flammable.

Auto-Ignition temperature: Not applicable.

Flash point: Not applicable.

Flammable limits: Not applicable.

Products of Combustion: Not applicable.

Fire Hazards: Not applicable.

Explosion Hazards: Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Extinguishing Media: Not applicable.

Special Information:

On fire hazards: Non-combustible.

On Explosion Hazards: Not applicable.

SECTION VI

SPILL/ACCIDENTAL RELEASE MEASURES

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by

spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

SECTION VII

HANDLING AND STORAGE

Precautions: Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

SECTION VIII

EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 10 (mg/m³) from OSHA (PEL) [United States]

TWA: 5 (mg/m³) from ACGIH (TLV) [United States]

TWA: 5 (mg/m³) from NIOSH [United States]

TWA: 5 (mg/m³) [Mexico]

TWA: 5 (mg/m³) [Canada]

TWA: 5 (mg/m³) [United Kingdom (UK)]

Consult local authorities for acceptable exposure limits.

SECTION IX

PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance: Solid. (Crystalline powder. Crystalline solid. Crystal's solid.)

Molecular Weight: 381.37 g/mole

Odor: Odorless

Taste: Alkaline.

Color: White.

pH (1% Solution in Water): Not available.

Boiling Point: Decomposes.

Melting Point: 75°C (167°F) when rapidly heated.

Critical Temperature: Not available.

Specific Gravity: 1.73 (Water = 1)

Vapor Pressure (mm Hg): Not applicable.

Vapor Density (Air=1): Not available.

Volatility: Not available.

Odor Threshold: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Water/Oil Dist. Coefficient: Not available.

Ionicity (in water): Not available.

Dispersion Properties: See solubility in water

Solubility:

Easily soluble in hot water.

Partially soluble in cold water.

Solubility in Water: 1 g dissolves in 16 ml water; 0.6 ml boiling water.

Solubility in Glycerol: 1 gram dissolves in 1 ml glycerol.

Insoluble in alcohol.

SECTION X

STABILITY/REACTIVITY INFORMATION

Stability: The product is stable.

Instability Temperature: Not Available

Conditions of Instability: Incompatible materials, excess heat

Incompatibilities: Reactive with reducing agents, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Information:

Incompatible with Zirconium. Borax + Zirconium explodes when heated.

Incompatible with metallic salts, strong acids, strong reducing agents such as metal hydrides or alkali metals.

Efflorescent in dry air.

At 100 deg. C, it loses 5H₂O; at 150 deg. C., it loses 9 H₂O; it becomes anhydrous at 320 deg. C

SECTION XI

TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD₅₀): 2000 mg/kg [Mouse].

Chronic Effects on Humans: May cause damage to the following organs: kidneys, lungs.

Other Toxic Effects on Humans:

Hazardous in case of inhalation (lung irritant).

Slightly hazardous in case of skin contact (irritant), of ingestion.

Special Information on Toxicity to Animals: Not available.

Special Information on Chronic Effects/Toxicity on Humans:

On Chronic Effects: May cause adverse reproductive effects.

May affect genetic material (mutagenic)

Other Toxic Effects: Acute Potential Health Effects:

Toxic Skin: Dust causes skin irritation. Poorly absorbed through intact skin, but can penetrate open wounds, or abraded skin

Eyes: Dust causes eye irritation.

Inhalation: Causes respiratory tract (nose, throat, lungs) causing wheezing, coughing, and/or shortness of breath. Can also cause nosebleeds. **Ingestion:** Acute toxic effects of borates in general are dehydration, abdominal or epigastric pain, nausea, vomiting, diarrhea, and delayed skin redness, rash. It may also affect behavior/central nervous system (headache, excitement or depression, lethargy, weakness, seizures/convulsions, tremors, muscle contraction or spasticity, dizziness), liver (hepatitis, jaundice, hepatomegaly), kidneys (nephrosis, oliguria, albuminuria, anuria). In severe cases, low blood pressure, thready pulse, cold clammy skin, cyanosis, cardiac arrhythmias, acute renal failure, and metabolic acidosis may occur.

Ingestion of over 1 gram can result in severe gastrointestinal irritation, kidney injury, and even death from central nervous system depression or vascular collapse, especially in infants. Ingestion of 5 to 10 grams can cause severe vomiting, diarrhea, shock and death.

Chronic Potential Health Effects: Chronic exposures can produce eye irritation, coughing, and skin rash (the latter following ingestion).

Ingestion: Prolonged or repeated ingestion may affect the spleen, brain, blood (anemia), thyroid and may cause weight loss, liver, kidneys. It may also cause mild gastrointestinal tract effects.

Inhalation: Prolonged or repeated inhalation can irritate the lungs. It may cause nosebleeds, and bronchitis to develop with cough, phlegm, and/or shortness of breath.

Skin: Prolonged or repeated skin contact may cause dermatitis.

SECTION XII

ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Information on Products of Biodegradation: Not available.

SECTION XIII

DISPOSAL CONSIDERATIONS

Waste Disposal: Recycle to process, if possible. Consult your local or regional authorities.

SECTION XIV

TRANSPORTATION INFORMATION

DOT Classification: DOT Not a DOT controlled material (United States).

UN: Not applicable.

Special Provisions for Transport: Not applicable.

SECTION XV REGULATORY INFORMATION

Federal and State Regulations:

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are: **NONE**

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are: **NONE**

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA): No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA

Other Classifications:

WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC): R37/38- Irritating to respiratory system and skin.

Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

References: Not available.

Other Special Considerations: Uses: Preservative against wood fungus; artificial aging of wood; fireproofing of fabrics, and woods; soldering metals; manufacture of glazes and enamels; curing or preserving skins; tanning; vet pharmaceuticals aid (alkalizing agent); antiseptic; detergent; astringent for mucous membranes; component of insulation glass fiber to enhance durability; in borosilicate glasses to improve thermal properties; germicidal agent in household cleaning products; powdered insecticide

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.