



# Sodium Perborate Tetrahydrate

## 1. Chemical Product and Supplier Identification

### Product Name

☞ Sodium Perborate Tetrahydrate

### Synonyms

☞ PBS4, PBST

### Manufacturer

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### MSDS Number

☞ MHPBS4-01-01

### Effective Date

☞ January 1, 2008

## 2. Composition/Information on Ingredients

Ingredients	Chemical Formula	CAS No.	Percentage
Sodium Perborate Tetrahydrate	NaBO <sub>3</sub> ·4H <sub>2</sub> O	10486-00-7	Min.96.0

## 3. Hazards Identification

### Emergency Overview

- ☞ Oxidizing agent, contact with other material may cause fire
- ☞ May be harmful or fatal if swallowed
- ☞ May cause severe eye and respiratory tract irritation or burns
- ☞ May cause skin irritation
- ☞ Does not present any significant hazard for the environment

### Potential Health Effects

- ☞ General.....Irritating to mucous membrane, eyes, and skin



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- ☞ Inhalation..... Irritating to the respiratory tract. Coughing, sneezing, difficulty breathing and sore throat
- ☞ Eye contact..... May cause irritation to the eyes, including pain, redness and reversible damage
- ☞ Skin contact..... Slight irritation.
- ☞ Ingestion..... Vomiting and diarrhea

#### 4. First-aid Measures

- ☞ Inhalation..... Remove affected person to fresh air. Seek medical attention if effects persist.
- ☞ Eye contact..... Flush eyes with running water for 15 minutes with eyelids held open. Seek specialist advice
- ☞ Skin contact..... Wash affected skin with soap and mild detergent and large amounts of water.
- ☞ Ingestion..... If the person is conscious and not convulsing, give 2-4 cupfuls of water to dilute the chemical and seek medical attention immediately. Do not inducing vomiting.

Notes To Medical Doctor: Irritating to eyes and mucous membranes. Endoscopy to access possible corrosive effects to the esophagus may be indicated. Decomposition products may include peroxide (irritant) and borate. Systemic effects are unlikely, but would be those of boric acid for which treatment is symptomatic and includes decontamination, support of circulation, correction of fluid-electrolyte disturbances, control of convulsions and protection of kidneys if large borate loads are encountered.

#### 5. Fire Fighting Measure

##### Flash Point

- ☞ Not applicable

##### Flammability

- ☞ Not applicable

##### Ignition Temperature

- ☞ Not applicable

##### Danger of Explosion

- ☞ Non-explosive

##### Extinguishing Media

- ☞ Water

##### Fire Hazards

- ☞ Oxidizer. Storage vessels involved in a fire may vent gas or rupture due to internal pressure. Damp material may decompose exothermically and ignite combustibles. Oxygen release due to exothermic



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decomposition may support combustion. May ignite other combustible materials. Avoid contact with incompatible materials such as heavy metals, reducing agents, acids, bases, combustibles (wood, papers, cloths etc.). Thermal decomposition releases oxygen and heat. Pressure bursts may occur due to gas evolution. Pressurization if confined when heated or decomposing. Containers may burst violently.

### Fire-Fighting Measures

- ☞ Evacuate all non-essential personnel
- ☞ Wear protective clothing and self-contained breathing apparatus
- ☞ Remain upwind of fire to avoid hazardous vapors and decomposition products
- ☞ Use water spray to cool fire-exposed containers

### 6. Accidental Release Measures

#### Spill Clean-up Procedures

- ☞ Oxidizer. Eliminate all sources of ignition. Evacuate unprotected personnel from equipment recommendations found in Section 8. Never exceed any occupational exposure limit.
- ☞ Shovel or sweep material into plastic bags or vented containers for disposal. Do not return spilled or contaminated material to inventory.
- ☞ Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.
- ☞ Do not touch or walk through spilled material. Keep away from combustibles (wood, paper, oils, etc.). Do not return any product to container because of the risk of contamination.

### 7. Handling and Storage

#### Storage

- ☞ Oxidizer. Store in a cool, well ventilated area away from all source of ignition and out of direct sunlight. Store in a dry location away from heat. Store at temperatures less than 40°C.
- ☞ Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers.
- ☞ Protect from moisture. Do not store near combustible materials. Keep containers well sealed, seal only with original vent cap. Ensure pressure relief and adequate ventilation.
- ☞ Store separately from organics and reducing materials. Avoid contamination which may lead to decomposition.

#### Handling

- ☞ Avoid contact with eyes, skin, and clothing. Use with adequate ventilation.
- ☞ Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area.
- ☞ Prevent contact with combustible or organic materials.
- ☞ Label containers and keep them tightly closed when not in use.



- ☞ Wash thoroughly after handling.

## 8. Exposure Controls/Personal Protection

### Engineering Controls

- ☞ General room ventilation is required. Local exhaust ventilation, process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

### Respiratory Protection

- ☞ For many conditions, no respiratory protection may be needed; however, in dusty or unknown atmospheres or when exposures exceed limit values, wear a NIOSH approved respirator.

### Eye/Face Protection

- ☞ Wear chemical safety goggles and a full face shield while handling this product.

### Skin Protection

- ☞ Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant (Recommended materials: PVC, neoprene or rubber)

### Other Protective Equipment

- ☞ Eye-wash station
- ☞ Safety shower
- ☞ Impervious clothing
- ☞ Rubber boots

### General Hygiene Considerations

- ☞ Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

## 9. Physical and Chemical Properties

Appearance:	White crystalline powder
Odor:	None
Bulk Density:	495±45 g/L
Solubility:	Min 12 g/L @20°C
PH, 3% Solution:	9.5~10.5
Decomposition Temperature:	Self-accelerating decomposition with oxygen release starting from 50 °C



## 10. Stability and Reactivity

### Stability

- ☞ Stable under normal conditions

### Conditions to Avoid

- ☞ Water
- ☞ Acids
- ☞ Bases
- ☞ Salts of heavy metals
- ☞ Reducing agents
- ☞ Organic materials
- ☞ Flammable substances

### Hazardous Decomposition Products

- ☞ Oxygen. Contamination with many substances will cause decomposition. The rate of decomposition increases with increasing temperature and may be very vigorous with rapid generation of large volume of oxygen and steam.

## 11. Toxicological Information

- ☞ LD50 Oral: 700~2100 mg/kg, rat
- ☞ LD50 Dermal: >2000 mg/kg, rabbit
- ☞ LD50 Inhalation: >4580 mg/kg, rat

## 12. Ecological Information

### Ecotoxicological Information

- ☞ No data available. 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 borate product released to the environment.

### Chemical Fate Information

- ☞ Boron is naturally occurring and ubiquitous in the environment. Product will decompose in the environment to natural borate. Product is soluble in water and is leachable through normal soil.

## 13. Disposal Considerations

### Waste Treatment

- ☞ Dispose of in an approved waste facility operated by an authorized contractor in compliance with local



regulations.

## Package Treatment

- ☞ The empty and clean containers are to be recycled or disposed of in conformity with local regulations.

## 14. Transport Information

- ☞ Proper Shipping Name: sodium perborate tetrahydrate
- ☞ UN Number: None
- ☞ Hazard Class: None
- ☞ Labels: None

## 15. Regulatory Information

SARA Section.....	Yes
SARA (313) Chemicals.....	No
EPA TSCA Inventory.....	Appears
Canadian WHMIS Classification.....	C, D2B
Canadian DSL.....	Appears
EINECS Inventory.....	Appears

## 16. Other Information

### Disclaimer

- ☞ The data in this Material Safety Data Sheet is believed to be correct. However, since conditions of use are outside our control it should not taken as a warranty of representation for which Shangyu Jiehua Chemical Co., Ltd. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.