



From: Avantor Performance Materials, Inc.  
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24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtrec: 703-527-3887

**NOTE:** CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service, 1-855-AVANTOR (855-282-6867) for assistance.

## SODIUM PERBORATE

### 1. Product Identification

**Synonyms:** Sodium perborate tetrahydrate; perboric acid, sodium salt, tetrahydrate; Metaborate Peroxyhydrate  
**CAS No.:** 7632-04-4 (Anhydrous); 10486-00-7 (Tetrahydrate)  
**Molecular Weight:** 153.88  
**Chemical Formula:** NaBO<sub>2</sub> · H<sub>2</sub>O<sub>2</sub> · 3H<sub>2</sub>O  
**Product Codes:** 3811

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium Perborate	7632-04-4	98.6%	Yes
Sodium Metaborate	7775-19-1	1.4%	Yes

### 3. Hazards Identification

#### Emergency Overview

**WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Life)

Flammability Rating: 0 - None

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

## Potential Health Effects

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### **Inhalation:**

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. May be caustic to nasal and lung tissues; causing severe burning.

### **Ingestion:**

Ingestion of large amounts may cause vomiting, diarrhea of mucous and blood, lethargy, twitching of facial muscles and extremities, convulsions, fever, yellow discoloration of the skin, a fall in blood pressure, collapse, coma, and death. Kidney damage can also occur.

### **Skin Contact:**

Can cause irritation due to caustic nature of material. Prolonged exposure can cause blistering and sloughing of the skin. Absorption of large amounts may cause symptoms similar to those of ingestion.

### **Eye Contact:**

Eye contact may cause irritation with discomfort, tearing or blurry vision, eye corrosion with corneal or conjunctival ulceration.

### **Chronic Exposure:**

Prolonged absorption may cause anorexia, weight loss, vomiting, convulsions, and anemia.

### **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.

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## 4. First Aid Measures

### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

### **Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

### **Fire:**

Not considered to be a fire hazard. Will not burn.

### **Explosion:**

Not considered to be an explosion hazard. Releases oxygen at high temperatures.

### **Fire Extinguishing Media:**

If involved in a fire, use water spray.

### **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Caution: Reacts with water to give oxygen and strong alkali.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Avoid high humidities and temperatures above 32C (90F) to prevent loss of oxygen and caking. Do not store with heavy metal salts or combustible organic matter. 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.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. 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, glycerine, 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.

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## 9. Physical and Chemical Properties

### **Appearance:**

White, crystalline granules.

### **Odor:**

Odorless.

### **Solubility:**

2.55 WT% @ 15C (59F) 3.75 WT% @ 32C (90F)

### **Specific Gravity:**

0.69-0.87

### **pH:**

10.0-10.4 (in water)

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

0

### **Boiling Point:**

120C (248F) (loses water).

### **Melting Point:**

63C (145F)

### **Vapor Density (Air=1):**

No information found.

### **Vapor Pressure (mm Hg):**

10 @ 25C (77F)

### **Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable when kept cool and dry, but decomposes with liberation of oxygen in warm or moist air.

**Hazardous Decomposition Products:**

Toxic gases and vapors may be released if involved in a fire. Oxygen is released.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Water, some organic compounds, reducing agents, metals and metal salts.

**Conditions to Avoid:**

Moisture, heat, flames, ignition sources and incompatibles.

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## 11. Toxicological Information

Sodium Perborate Tetrahydrate: Oral rat LD50 1200 mg/kg; Irritation (Standard Draize, rabbit, eye) 50 mg, moderate. Investigated as a mutagen, reproductive effector.

Sodium Metaborate: Oral rat LD50 2330 mg/kg.

Sodium Perborate (NaBO<sub>3</sub>) Anhydrous: Investigated as a mutagen.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Sodium Perborate (7632-04-4)	No	No	None
Sodium Metaborate (7775-19-1)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 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.

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## 14. Transport Information

Not regulated.

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Sodium Perborate (7632-04-4)	Yes	Yes	Yes	Yes

Sodium Metaborate (7775-19-1) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	--Canada--		
		DSL	NDSL	Phil.
Sodium Perborate (7632-04-4)	Yes	Yes	No	Yes
Sodium Metaborate (7775-19-1)	Yes	Yes	No	No

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Sodium Perborate (7632-04-4)	No	No	No	No
Sodium Metaborate (7775-19-1)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Sodium Perborate (7632-04-4)	No	No	No
Sodium Metaborate (7775-19-1)	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 (Mixture / Solid)

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. Other Information

**NFPA Ratings:** Health: 3 Flammability: 0 Reactivity: 0

**Label Hazard Warning:**

WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

**Label Precautions:**

Do not get in eyes, on skin, or on clothing.

Do not breathe mist.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**Label First Aid:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No Changes.

**Disclaimer:**

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Prepared by: Environmental Health & Safety