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## Safety Data Sheet H<sub>2</sub>O<sub>2</sub> Powdered Bleach

### 1. IDENTIFICATION

Synonyms none  
 CAS# see Part 3, below  
 Material Use oxygen bleach

**IN AN EMERGENCY CALL: INFOTRAC 1-800-535-5053**

### 2. HAZARD IDENTIFICATION

GHS Class (Category)	skin corrosive (1)	STOT (3)	oral acute (4)	oxidizer (2)	reproductive (2)	aquatic chronic (3)
Signal Words	<b>DANGER</b>	<b>WARNING</b>	<b>WARNING</b>	<b>WARNING</b>	<b>WARNING</b>	<b>no Signal Word no Pictogram</b>
Hazard Statements	causes severe skin burns & eye damage (H314)	may cause respiratory tract irritation (H335)	harmful if swallowed (H302)	may intensify fire (H272)	suspected of damaging fertility or the unborn child (H361)	harmful to aquatic life with long-lasting effects (H412)

#### GHS Precautionary Statements for Labeling

P210, P220 Keep away from heat, Keep away from combustible materials.  
 P260, P262 Do not breathe dust. Do not get in eyes or on skin.  
 P264 Wash thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P280 Wear eye protection, protective gloves and clothing of nitrile.  
 P273, P391 Avoid release to the environment. Collect spillage.  
 P313 & P333 If skin irritation or rash occurs, get medical advice/attention.  
 P304 & P340 If inhaled, remove person to fresh air and keep comfortable for breathing.  
 P305, P351, P338 If in eyes, rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.



### 3. COMPOSITION

	CAS NUMBER	%	TLV ppm / mg/m <sup>3</sup>	LD <sub>50</sub> (mg/kg) ORAL	LD <sub>50</sub> (mg/kg) SKIN	LC <sub>50</sub> ppm INHALATION
Sodium Perborate (tetrahydrate)	10486-00-7	40-50%	not listed	>1060	not known	not known
Sodium Carbonate	497-19-8	25-35%	not listed	4090	>2000	not known
Sodium Sulfate	7757-82-6	15-20%	not listed	>5990	not toxic	not known
Sodium Tripolyphosphate	7758-29-4	1-10%	not listed	3100	>4640	not known
Non-ionic Surfactant	on request	1-2%	not listed	>2000	not known	not known

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#### 4. FIRST AID

- SKIN:** Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.
- EYES:** Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is persistent irritation.
- INHALATION:** Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.
- INGESTION:** Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

*NOTE: Corrosive substance: apply first aid immediately! Inadvertent inhalation of vomited material may seriously damage the lungs. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.*

#### 5. FLAMMABILITY & FIRE-FIGHTING

- |                          |   |
|--------------------------|---|
| Flash Point              | cannot burn   |
| Autoignition Temperature | cannot burn – oxidizing substance; may intensify fire   |
| Flammable Limits         | cannot burn   |
| Combustion Products      | oxides of carbon, nitrogen, sodium, boron, and phosphorous smoke  |
| Firefighting Precautions | as for materials sustaining fire, but foam or dry chemical may be preferred because water may accelerate oxygen release from decomposing sodium perborate & may intensify fire; firefighters must wear SCBA |
| Static Discharge         | cannot accumulate a static charge   |

#### 6. ACCIDENTAL RELEASE MEASURES

- |                 |   |
|-----------------|---|
| Leak Precaution | not applicable – solid material                                   |
| Handling Spill  | keep dry; sweep, shovel & store in closed containers for disposal |

#### 7. HANDLING & STORAGE

Store away from heat, moisture, acids which can cause decomposition and oxygen release. Avoid generating or breathing product dust. If dust forms in use, install adequate ventilation to clear workplace air. Avoid contact with skin & wash work clothes frequently. An eye bath & safety shower should be available near the workplace.

#### 8. EXPOSURE CONTROL & PERSONAL PROTECTION

- |             |   |            |            |
|-------------|---|------------|------------|
| ACGIH TLV   | not listed  | ACGIH STEL | not listed |
| OSHA PEL    | not listed  | OSHA STEL  | not listed |
| Ventilation | no special mechanical ventilation required; if dust forms in use, install adequate exhaust ventilation to keep workplace air clear                |            |            |
| Hands       | nitrile gloves; leather gloves if everything is totally dry – always confirm suitability with supplier  |            |            |
| Eyes        | safety glasses with side shields or chemical goggles – always protect eyes!   |            |            |
| Clothing    | if skin contact is possible, wear overalls with long sleeves, but good industrial hygiene (avoiding dusting) is preferable to protective clothing |            |            |

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

*NOTE: for Flash Point, Autoignition Temperature & Flammable Limits see Part 5.*

Odor & Appearance	white powder, pleasant “clean” odor
Odor Threshold	not known
Vapor Pressure	not known – <i>no volatile components present</i>
Evaporation Rate ( <i>Butyl Acetate = 1</i> )	not volatile – <i>no volatile components present</i>
Vapor Density (air = 1)	no vapour forms
Boiling Point	decomposes without boiling ( <i>sodium perborate</i> )
Melting Point	not known – <i>definitely above 100°C</i>
Decomposition Temperature	above 60°C / 140°F ( <i>sodium perborate, tetrahydrate</i> ) loses water of hydration above 130°C / 266°F ( <i>sodium perborate</i> ) releases H <sub>2</sub> O <sub>2</sub> ; <i>not known for the other components</i>
Density	approx. 2.6kg/liter; <i>the Bulk Density is much lower – probably ~1 due to air entrainment</i>
Water Solubility	not known; approximately 500 grams/liter (20°C / 68°F) – <i>highly water soluble</i>
Viscosity	not applicable – <i>solid material</i>
pH	13 – <i>in solution (Note that an alkaline pH is necessary to slow hydrolysis of the sodium perborate.)</i>

## 10. REACTIVITY

Dangerously Reactive With	acids react vigorously with this alkaline material and cause rapid oxygen release
Also Reactive With	moisture, acids and heat – all of which cause the release of oxygen
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	moisture and heating above 130°C / 266°F ( <i>sodium perborate</i> )
Decomposition Products	none apart from Hazardous Combustion Products
Mechanical Impact	not sensitive

## 11. TOXICITY INFORMATION

### ***i. ACUTE EXPOSURE***

Skin Contact	corrosive to moist (eg: sweaty) skin
Skin Absorption	yes, slowly; toxic effects unlikely by this route
Eye Contact	corrosive, likely to damage eyes
Inhalation	irritating to respiratory passages
Ingestion	corrosive to mouth, throat and stomach; in the stomach acidity cause rapid oxygen release which may precipitate vomiting
Calculated LD <sub>50</sub> (oral)	1810mg/kg (rat)
Calculated LD <sub>50</sub> (skin)	6200mg/kg (rabbit) – <i>insufficient information for confidence</i>
LC <sub>50</sub> (inhalation)	<i>insufficient information to calculate</i>

### ***ii. CHRONIC EXPOSURE***

General	prolonged or repeated exposure to dust may cause dermatitis & respiratory irritation
Sensitizing	not a sensitizer
Carcinogen/Tumorigen	not known to be a tumorigen or a carcinogen in humans or animals
Reproductive Effect	borates (decomposition products of sodium perborate) are known to be harmful to young animals & to children on ingestion – <i>not a route of industrial exposure</i>
Mutagen	not known to be a mutagen or teratogen in humans or animals
Synergistic With	not known

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## 12. ECOLOGICAL INFORMATION

### Sodium Perborate:

Bioaccumulation	will not bioaccumulate in aquatic animals; <i>may do so in land animals and birds</i>
Biodegradation	inorganic substance; cannot biodegrade
Abiotic Degradation	decomposes to sodium borate & hydrogen peroxide (H <sub>2</sub> O <sub>2</sub> ); H <sub>2</sub> O <sub>2</sub> decomposes rapidly in the environment
Mobility in soil, water	borates are sufficiently water soluble to move readily through soil & the water column
<b>Aquatic Toxicity</b>	<b><i>data below for borates in general expressed as boron; borates considered chronically toxic to aquatic life</i></b>
LC <sub>50</sub> (Fish, 96hr)	>27mg/liter (Oncorhynchus mykiss) <sup>2</sup> , >22mg/liter (Ictalurus punctatus) <sup>2</sup>
EC <sub>50</sub> (Crustacea, 48hr)	52mg/liter (Daphnia magna) <sup>2</sup>
EC <sub>50</sub> (Algae, 72hr)	13.9mg/liter (Selenastrum capricornutum) <sup>2</sup> , 0.2mg/liter (Lemna minor – <i>not an EC<sub>50</sub> but “growth inhibition”</i> ) <sup>2</sup>

### Sodium Carbonate:

Bioaccumulation	not a bioaccumulator
Biodegradation	inorganic material, cannot biodegrade
Abiotic Degradation	reacts with atmospheric CO <sub>2</sub> neutralizing gradually to sodium bicarbonate
Mobility in soil, water	water soluble; moves readily in soil and water
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish, 96hr)	740mg/liter (Gambusia affinis), 300 & 320mg/liter (Lepomis macrochirus)
EC <sub>50</sub> (Crustacea, 24hr)	265 & 565mg/liter (Daphnia magna), 600mg/liter (Culex sp.)
EC <sub>50</sub> (Algae)	137, 242 & 1050mg/liter (Nitzschia sp.)
EC <sub>50</sub> (Bacteria)	not known – <i>no data</i>

### Sodium Sulfate:

Bioaccumulation	highly water soluble; cannot bioaccumulate
Biodegradation	inorganic substance; cannot biodegrade
Abiotic Degradation	not known – probably undergoes ion exchange with soil materials
Mobility in soil, water	water soluble; moves readily through soil & the water column
<b>Aquatic Toxicity</b>	<b><i>sodium sulfate is not toxic to aquatic life</i></b>

### Sodium Tripolyphosphate:

Bioaccumulation	cannot bioaccumulate
Biodegradation	cannot biodegrade; plants use phosphate as a fertilizer, removing it from the environment
Abiotic Degradation	gradual (faster in acidic medium) hydrolysis to orthophosphate (coupled to various metallic ions)
Mobility in soil, water	water soluble & may move readily through soil & the water column; <i>the phosphate ion precipitates in the presence of calcium or magnesium ions, so may not move far</i>
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish, 48hr)	1600mg/liter (Leuciscus idus)
EC <sub>50</sub> (Crustacea, 50hr)	1089mg/liter (Daphnia magna)
EC <sub>50</sub> (Algae)	not toxic to aquatic life – <i>promotes algal blooms on surface water, eventually causing eutrophication</i>
EC <sub>50</sub> (Bacteria)	1000mg/liter ( <i>activated sludge, domestic</i> )

### Nonionic Surfactant – nonylphenol ethoxylate:

Bioaccumulation	cannot bioaccumulate; <b><i>however, water insoluble breakdown product, unethoxylated nonylphenol, may accumulate</i></b>
Biodegradation	34% in 20 days to di- & mono-ethoxylate; <b><i>these latter compounds resist further biodegradation (below)</i></b>
Abiotic Degradation	may react with atmospheric hydroxyl (OH) radicals; low volatility – a minor degradation route
Mobility in soil, water	sufficiently water soluble to move readily through soil and the water column
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish, 96 hr)	2.1-2.6mg/liter (Pimephelas promelas), 13.9-19.5mg/liter (Poecilia reticulata – 48hr)
LC <sub>50</sub> (Crustacea, 48hr)	3.8-6.2 & 18.2mg/liter (Daphnia magna), 20.9mg/liter (Gammarus pulex)
EC <sub>50</sub> (Algae, 96hr)	15mg/liter (Lemna minor), 7mg/liter (Scenedesmus quadricauda)

***NOTE: Nonylphenol Ethoxylates biodegrade to estrogenic hormone mimics in the environment, which may lead to reproductive failure in birds, amphibia & fish.***

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### 13. DISPOSAL CONSIDERATIONS

- Waste Disposal **do not flush undiluted to sewer**; neutralize material carefully with dilute acid; this also releases oxygen so keep away from combustible materials and ventilate area; residue must be given to a hazardous waste disposal specialist
- Containers **Drums** should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.  
**Pails** must be vented and thoroughly dried prior to crushing and recycling.  
**IBCs** (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years.  
**Warning: never cut, drill, weld or grind on or near this container, even if empty.**

### 14. TRANSPORT INFORMATION

#### *USA 49 CFR & Canada/International TDG*

Product Identification Number	UN – 3084
Shipping Name	Corrosive solid, oxidizing, N.O.S. (sodium carbonate)
Classification	Class 8, 5.1; Packing Group II
<i>Marine Pollution</i>	<i>not a marine pollutant</i>
<i>ERAP Required</i>	<i>1000kg</i>
<i>Reportable Quantity (RQ)</i>	<i>none</i>



### 15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

### 16. OTHER INFORMATION

Date of Preparation May 2015

Date of Revision -

Prepared for Tomco-Harwel, by Peter Bursztyn

With data from the Registry of Toxic Effects of Chemical Substances (RTECS), Hazardous Substance Data Base (HSDB), Cheminfo (CCOHS), OSHA, IUCLID Datasheets (European Chemical Substance Information System - ESIS), & others sources (below if used), as required/available

(1) European Commission, Institute for Health and Consumer Protection, Perboric Acid, Sodium Salt, Summary Risk Assessment Report:  
<http://publications.jrc.ec.europa.eu/repository/bitstream/11111111/1202/1/perboricacidsodiumsaltsum301.pdf>

(2) Water Protection Section, Ministry of Water, Land & Air Protection, British Columbia, Canada:  
<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=A83669582E0A4A75A280E71C0B8D0C85&filename=boron-tech-appnx.pdf>

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