

## SAFETY DATA SHEET

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

### 1. Identification

<b>Product identifier</b>	<b>PurDOX BCD</b>
<b>Other means of identification</b>	Not available
<b>Recommended use</b>	Industrial use
<b>Recommended restrictions</b>	None known
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer</b>	
<b>Company name</b>	International Dioxide, Inc. an ERCO Worldwide Company
<b>Address</b>	40 Whitecap Drive North Kingstown, RI 02852 United States of America
<b>Telephone</b>	Information #: (800) 477-6071
<b>Website</b>	<a href="https://idiclo2.com">https://idiclo2.com</a>
<b>E-mail</b>	idiclo2@ercoworldwide.com
<b>Emergency phone number</b>	Canada & U.S.A.: (800) 424 9300 (CHEMTREC) International: (703) 527 3887
<b>Supplier</b>	Refer to Manufacturer

### 2. Hazard(s) Identification

<b>Physical hazards</b>	Oxidizing liquids	Category 2
<b>Health hazards</b>	Eye Damage Acute toxicity, oral	Category 1 Category 4
<b>Environmental hazards</b>	Not currently regulated by OSHA, refer to Section 12 for additional information.	
<b>OSHA defined hazards</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	

#### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	May intensify fire; oxidizer. Harmful if swallowed. Causes serious eye damage

#### Precautionary statement

<b>Prevention</b>	<p>Wear eye protection and face protection</p> <p>Wear Protective gloves, clothing, eye and face protection.</p> <p>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No Smoking</p> <p>Keep away from clothing and other combustible materials.</p> <p>Wash thoroughly after handling.</p> <p>Do not eat, drink or smoke when using this product</p>
<b>Response</b>	<p><b>IN CASE OF FIRE:</b> Use only water to extinguish.</p> <p><b>IF IN EYES:</b> Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.</p> <p><b>IF SWALLOWED:</b> Call a Poison Center if you feel unwell. Rinse mouth</p> <p><b>IF ON CLOTHING:</b> Immediately remove, keep contaminated areas wet with water and launder.</p>
<b>Storage</b>	Store separately
<b>Disposal</b>	Dispose of contents/container in accordance with all local, regional, national and international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	<p>May cause mild skin irritation.</p> <p>Product is a strong oxidizer, if allowed to dry on organic materials could cause intense fire if heat is applied. Wear non melting clothing such as cotton when handling. In case of spill keep wet with water until cleaned up.</p>

### 3. Composition/Information on Ingredients

Chemical name	Common name and synonyms	CAS number	Conc. % By Weight
Sodium chlorate	Chlorate of soda	7775-09-9	40% w/w
Hydrogen peroxide	None	7722-84-1	≤10% w/w
Water		7732-18-5	Balance

**Chemical name of impurities, stabilizing solvents and/or additives:** None.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

### 4. First-Aid Measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if necessary.
<b>Skin Contact</b>	If on skin (or hair): Take off immediately all contaminated clothing. Rinse contaminated areas with water or take a shower. Call a POISON CENTER or doctor/physician if you feel unwell. Wash contaminated clothing before reuse.

<b>Eye Contact</b>	Immediately flush eyes with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Ingestion</b>	If swallowed: Rinse mouth. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If the patient is conscious, give one or two glasses of water to dilute stomach contents. Seek medical attention immediately if the patient feels unwell or is unconscious.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically.
<b>General information</b>	Notes to physician: Treat symptomatically. No specific treatment.

## 5. Fire-Fighting Measures

<b>Suitable extinguishing media</b>	Can only be extinguished with large quantities of water. Product is an oxidizer and will generate its own oxygen in a fire.
<b>Unsuitable extinguishing media</b>	DO NOT use dry chemical fire extinguishing agents containing ammonium compounds (such as some A:B:C agents), since an explosive compound can be formed. DO NOT use carbon dioxide, dry chemical powder or other extinguishing agents that smother flames, since they are not effective in extinguishing fires involving oxidizers.
<b>Specific hazards arising from the chemical</b>	Oxidizing material. May intensify fire.
<b>Special protective equipment and precautions for firefighters</b>	Fire-fighters must use standard protective equipment. Protective equipment contaminated with the product needs to be thoroughly decontaminated afterwards.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>Hazardous combustion products</b>	Pure dry sodium chlorate decomposes explosively under intense fire conditions. It initially decomposes to sodium perchlorate and begins to liberate oxygen at about 265°C. Besides oxygen, other compounds formed in a fire include chlorine, hydrogen chloride and sodium oxide.

## 6. Accidental Release Measures

<b>Personal precautions, protective equipment</b>	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected
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**and emergency  
procedures**

personnel from entering. Do not touch or walk-through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**Methods and materials  
for containment and  
cleaning up**

Stop leak if without risk. Move containers from spill area. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

**Environmental  
precautions**

Avoid dispersal of spilled material and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**7. Handling and Storage**

**Precautions for safe  
handling**

Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest.

Keep in the original container or an approved alternative made from a compatible material, kept tightly closed. Keep away from clothing, incompatible materials and combustible materials. Keep away from heat. Empty containers retain product residue and can be hazardous. Do not reuse container.

Remove contaminated clothing and protective equipment before entering eating areas. Workers should wash hands and face before eating, drinking and smoking.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

**Conditions for safe  
storage, including any  
incompatibilities**

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and away from incompatible materials and food and drink.

Keep separate from reducing agents, acids, and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. All containers should have venting capability and be regularly inspected for swelling.

Use appropriate containment to avoid environmental contamination. Empty containers retain product residue and can be hazardous. Do not reuse container.

**8. Exposure Controls/Personal Protection**

**Occupational Exposure Limits** Sodium chlorate: None  
Hydrogen peroxide

ACGIH TLV (United States, 3/2016).

TWA: 1 ppm 8 hours.

TWA: 1.4 mg/m<sup>3</sup> 8 hours.

OSHA PEL (United States, 6/2016).

TWA: 1 ppm 8 hours.

TWA: 1.4 mg/m<sup>3</sup> 8 hours.

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear safety glasses with side shields (or goggles). Eye wash fountain and emergency showers are recommended.

**Skin protection**

**Hand protection**

Permeation resistant gloves.

**Other**

For exposures with a high potential of contact, wear PVC or rubber rain suit, hard hat, rubber or plastic gloves, rubber boots, and safety glasses or goggles. Do Not Wear Leather Boots or Gloves.

**Respiratory protection**

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to mists at levels exceeding the exposure limits. Seek advice from respiratory protection specialists.

**Thermal Hazards**

No specific data

**General hygiene considerations**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**9. Physical and Chemical Properties**

**Appearance**

**Physical state**

Liquid

**Form**

Liquid

**Color**

Clear to light blue

**Odor**

Not available

**Odor threshold**

Not available

**Molecular formula**

Not available

<b>Molecular weight</b>	Not available
<b>pH</b>	2.0 to 4.0
<b>Melting point/Freezing Point</b>	Crystallization begins at -15°C
<b>Initial boiling point and boiling range</b>	Not available
<b>Flash point</b>	Closed cup: Not applicable
<b>Evaporation rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit – lower (%)</b>	Not available
<b>Flammability limit – upper (%)</b>	Not available
<b>Explosive limit – lower (%)</b>	Not available
<b>Explosive limit – upper (%)</b>	Not available
<b>Vapor pressure</b>	Not available
<b>Vapor density</b>	Not available
<b>Relative density</b>	Not available
<b>Solubility (ies)</b>	
<b>Solubility (water)</b>	Not available
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available
<b>Decomposition temperature</b>	Not available
<b>Viscosity</b>	Not available
<b>Other information</b>	
<b>Density</b>	1.38 g/cm <sup>3</sup>
<b>Flammability</b>	Not available
<b>Specific gravity</b>	1.38
<b>Surface tension</b>	Not available

## 10. Stability and Reactivity

<b>Reactivity</b>	Will react with acids to form chlorine/chlorine dioxide gases.
<b>Chemical stability</b>	Stable when stored under normal conditions and kept free of contamination. Contamination, pH change, or elevated temperature may result in peroxide degradation and oxygen gas generation.
<b>Possibility of hazardous reactions</b>	Contact with combustible materials may increase the risk of causing or intensifying fire.
<b>Conditions to Avoid</b>	High temperature. Contamination. Allowing the product to dry on clothing or other combustible materials will increase flammability hazard and may cause fire.
<b>Incompatible materials</b>	Combustible materials, reducing materials, mineral acids, organic materials, and compounds that decompose hydrogen peroxide.

**Hazardous decomposition products** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological Information

### Information on likely routes of exposure

- Inhalation** Mists may cause irritation to the respiratory system.
- Skin contact** Can cause mild skin irritation on contact.
- Eye contact** Can cause mild eye irritation on contact.
- Ingestion** Harmful if swallowed.

### Delayed and immediate effects and chronic effects from short-term and long-term exposure

**Effects of short-term (acute) exposure** May cause mild eye irritation. Symptoms may include redness and itching.  
May cause mild skin irritation. Symptoms may include redness and itching.  
May cause irritation to the nose, throat and upper respiratory tract if mist is inhaled. Symptoms may include coughing, choking and wheezing.

If a large quantity is ingested could cause cyanosis (bluish discoloration of the skin), nervous system damage, lung inflammation and pulmonary edema (fluid accumulation). Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

#### Acute toxicity

Component	Species	Test Results
Sodium chlorate		
<b>Acute</b>		
LD50 Oral	Rat	1200 mg/kg
LC50 Inhalation, vapor	Rat	>7 mg/l over 4 hours
<b>Component</b>	<b>Species</b>	<b>Test Results</b>
Hydrogen Peroxide		
<b>Acute</b>		
LD50 Oral	Rat	>500 mg/kg
LD50 Dermal	Rat	4060 mg/kg
LC50 Inhalation, vapor	Rat	>0.17 mg/l over 4 hours (LC50 could not be determined because no deaths were observed in the rats at the maximum saturation concentration).

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Hydrogen Peroxide: Slightly irritant
<b>Serious eye damage/eye irritation</b>	Sodium chlorate: May cause mild eye irritation. Symptoms may include redness and itching. Hydrogen Peroxide: Severe irritant, Risk of serious damage to eyes.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitizer</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	
<b>Reproductive toxicity</b>	No known significant effects or critical hazards.
<b>Specific target organ toxicity - single exposure</b>	Not available
<b>Specific target organ toxicity - repeated exposure</b>	Not available
<b>Aspiration toxicity</b>	Not expected to be an aspiration hazard.
<b>Chronic effects</b>	Not available

## 12. Ecological Information

### Ecotoxicity

#### Component

#### Species

#### Test Results

Hydrogen Peroxide

#### Acute

EC50

Algae – Skeletonema costatum

1.38 mg/l (growth rate) over 72 hours

EC50

Daphnia – Daphnia magna

2.4 mg/l over 48 hours

LC50

Fish – Pimephales promelas

16.4 mg/l over 96 hours

#### Chronic

NOEC

Algae – Skeletonema costatum

0.63 mg/l (growth rate) over 72 hours

NOEC

Daphnia – Daphnia magna

0.63 mg/l over 21 days

#### Persistence and degradability

Hydrogen Peroxide: Readily



Sodium Chlorate: Readily biodegradable. Degrades very slowly in soil under aerobic conditions. May decompose by microbial degradation more rapidly under anaerobic conditions.

**Bioaccumulative potential**

Hydrogen Peroxide: LogP<sub>ow</sub> -1.1, low potential

**Mobility in soil**

High water solubility indicates a high mobility in soil. Sodium chlorate can be leached out of soil. Chlorate accumulates in plant cells until toxic concentrations are reached and the plant dies.

**Other adverse effects**

No known significant effects or critical hazards.

### 13. Disposal Considerations

**Disposal instructions**

The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Waste disposal should be in accordance with existing federal state, provincial and or local environmental controls laws.

**Local disposal regulations**

Dispose in accordance with all applicable regulations.

**Hazardous waste code**

When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA Hazardous Waste Number D001). (40 CFR 261.20-24) Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product, should be classified as a hazardous waste. (40 CFR 261.20-24)






**Waste from residues / unused products**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues.

**Contaminated packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use containers.

## 14. Transport Information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	UN3139	Oxidizing liquid, n.o.s. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	II		62, 127, 148, A2, IB2
<b>IMDG Class</b>	UN3139	OXIDIZING LIQUID, N.O.S. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	II	 	<b>Emergency schedules (EmS)</b> F-A, S-Q
<b>IATA-DGR Class</b>	UN3139	Oxidizing liquid, n.o.s. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	II	 	<b>Passenger aircraft</b> 550: 1 L  <b>Cargo aircraft</b> 554: 5 L

RQ: 0 lbs.

## 15. Regulatory Information

### SARA 311/312

 Fire hazard  
 Acute health hazard  
 Serious eye damage/eye irritation

### SARA Title III Section 302 Extremely Hazardous Substances

None

### SARA Title III Section 313 Toxic Chemicals

None

### US EPA CERCLA Hazardous Substances (40CFR 302.4)

 None  
 Hydrogen Peroxide RQ is for concentrations > 52% only

### State Regulations

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections on the SDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state

Ingredient Name	CAS Number	State Code	Concentration (%)
Sodium chlorate	7775-09-9	MA - S, NJ - HS, PA - RTK HS	25-50

Hydrogen peroxide	7722-84-1	MA - S, NJ - HS, PA - RTK HS	≤10
Water	7732-18-5		50-75

Massachusetts Substances: MA - S

Massachusetts Extraordinary Hazardous Substances: MA - Extra HS

New Jersey Hazardous Substances: NJ - HS

Pennsylvania RTK Hazardous Substances: PA - RTK HS

Pennsylvania Special Hazardous Substances: PA - Special HS

**California Prop. 65**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

**U.S. Toxic Substances Control Act**

Listed on the TSCA Inventory

**16. Other Information**

**Issue date** 4/5/2022

**Revision #** 7

**Revision Indicator** General review and update

**List of abbreviations** ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstract Services

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980

CFR: Code of Federal Regulations

DOT: Department of Transportation

EPA: Environmental Protection Agency

EPCRA: Emergency Planning and Community Right-to-Know Act

ERG: Emergency Response Guidebook

HSDB® - Hazardous Substances Data Bank

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association

IBC: Intermediate Bulk Container

IDLH: immediately dangerous to life or health

IMDG: International Maritime Dangerous Goods

LC: Lethal Concentration

LD: Lethal Dose

NIOSH: National Institute of Occupational Safety and Health

NOEC: No observable effect concentration

NTP: National Toxicology Program

OECD: Organization for Economic Cooperation and Development

OEL: National occupational exposure limits

OSHA: Occupational Safety and Health Administration

PEL: Permissible exposure limit

RCRA: Resource Conservation and Recovery Act

RQ: Reportable Quantity

RTECS: Registry of Toxic Effects of Chemical Substances

SAR: supplied-air respirator

SCBA: self-contained breathing apparatus

SDS: Safety Data Sheet  
STEL: Short Term Exposure Limit  
TWA: Time Weighted Average  
UN: United Nations

**References**

None.

**Disclaimer**

Information presented in this SDS is furnished in accordance with OSHA's Hazard Communication Standard (HCS) 2012.

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