


Section 1. Identification

Product identifier	: PurDOX™ BCD
Material Number	: 201801251
Identified uses	: Industrial use
Supplier/Manufacturer	: International Dioxide, Inc. 40 Whitecap Drive North Kingstown, RI 02852 For Information: (800) 477-6071 International: +1 (401) 295-8800
In case of emergency	: CHEMTREC (800) 424 9300 International (703) 527 3887

Section 2. Hazards identification

HAZCOM Standard Status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Physical state	: Liquid.
Color	: Clear. to Light Blue.
Classification of the substance or mixture	: OXIDIZING LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 3 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (digestive system and respiratory tract) (inhalation) - Category 1
Hazard pictograms	: 
Signal word	: Danger
Hazard statements	: May intensify fire; oxidizer. Toxic if inhaled. Harmful if swallowed. Causes severe skin burns and eye damage. Causes damage to organs if inhaled. (digestive system, respiratory tract)
Hazard Not Otherwise Classified (HNOC)	: None known.
Precautionary statements	
Prevention	: Wear protective gloves/clothing and eye/face protection. Keep away from heat. - No smoking. Keep away from clothing, incompatible materials and combustible materials. Take anyprecaution to avoid mixing with combustibles and other incompatible materials. Use only in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response	: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Storage	: Store locked up.

Section 2. Hazards identification

- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Sodium chlorate	40 - 50	7775-09-9
Hydrogen Peroxide	≤10	7722-84-1

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.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of first aid measures

- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. In case of contact with eyes, flush eyes with plenty of water for at least 30 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or respiratory arrest occurs, provide artificial respiration, or oxygen by a trained professional, using a pocket type respirator.
- Skin contact** : In case of contact, flush skin with plenty of water for at least 30 minutes. Get medical attention immediately. Rinse immediately contaminated clothing and skin with plenty of water. Immediately remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Toxic if inhaled. Causes damage to organs following a single exposure if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** : Causes severe burns.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Section 4. First aid measures

- Eye contact** : Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
- Inhalation** : No specific data.
- Skin contact** : Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
- Ingestion** : Corrosive with symptoms of coughing, burning, ulceration, and pain.
Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

Potential chronic health effects

No known significant effects or critical hazards.

- Notes to physician** : Treat symptomatically. No specific treatment.
- Protection of first-aiders** : If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Can only be extinguished with large quantities of water.
- Unsuitable extinguishing media** : Do not use dry chemical or foam.

- Specific hazards arising from the chemical** : Oxidizing material. May intensify fire. In a fire or if heated, a pressure increase will occur and the container may burst. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Water runoff from fire fighting may be corrosive.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

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

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

Section 6. Accidental release measures

Methods and materials for containment and cleaning up : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Wash spillages into an effluent treatment plant or proceed as follows. 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. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Prevent entry into sewers, water courses, basements or confined areas.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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. Put on appropriate personal protection equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

Conditions for safe storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from reducing agents 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. Use appropriate containment to avoid environmental contamination. Empty containers retain product residue and can be hazardous. Do not reuse container. See NFPA 430, Code for the Storage of Liquid and Solid Oxidizers.

Section 8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
Sodium chlorate Hydrogen Peroxide	None ACGIH TLV (United States, 3/2016). TWA: 1 ppm 8 hours. TWA: 1.4 mg/m ³ 8 hours. OSHA PEL (United States, 6/2016). TWA: 1 ppm 8 hours. TWA: 1.4 mg/m ³ 8 hours.

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 recommended or statutory limits.

Personal protection Hygiene measures

: 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.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. A NIOSH approved air purifying respirator with organic vapor cartridges and particulate prefilter can be used to minimize exposure.
- Skin protection** : Permeation resistant clothing and foot protection. Permeation resistant gloves.
- Eye/face protection** : chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. If contact with product is possible, wear safety glasses with side shields.
- Medical Surveillance** : Not available.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Clear. to Light Blue.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : 4.5 to 5
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- Boiling point** : Not available.
- Melting point** : Not available.
- Flash point** : Closed cup: Not applicable.
- Evaporation rate** : Not available.
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- Explosion limits** : Not available.
- Vapor pressure** : Not available.
- Density** : 1.38 g/cm³
- Specific gravity (Relative density)** : 1.38
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- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Vapor density** : Not available.
- Viscosity** : Not available.
- Auto-ignition temperature** : Not available.
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- Decomposition temperature** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing or intensifying fire
- Conditions to avoid** : Drying on clothing or other combustible materials may cause fire.
- Incompatible materials** : Reactive or incompatible with the following materials:
combustible materials
reducing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : Toxic if inhaled. Causes damage to organs following a single exposure if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
Skin contact : Causes severe burns.
Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
Inhalation : No specific data.
Skin contact : Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
Ingestion : Corrosive with symptoms of coughing, burning, ulceration, and pain. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

Potential chronic health effects

Short term exposure

Potential immediate effects : Not available.

Long term exposure

Potential delayed effects : Not available.
General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Test
Sodium chlorate	LD50 Oral	Rat	1200 mg/kg	-	-
Hydrogen Peroxide	LD50 Oral	Rat	>500 mg/kg	-	-
Hydrogen Peroxide	LD50 Dermal	Rat	4060 mg/kg	-	-
Sodium chlorate	LC50 Inhalation Vapor	Rat	>7 mg/l	4 hours	-
Hydrogen Peroxide	LC50 Inhalation Vapor	Rat	>0.17 mg/l *	4 hours	-

Conclusion/Summary : Hydrogen Peroxide:* Die inhalative LC50 (Ratte/4Std) konnte nicht bestimmt werden, weil bei der maximalen Sättigungskonzentration keine Todesfälle bei den Ratten beobachtet worden sind.

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation	Reversibility
Sodium chlorate	Eyes - Mild irritant	Mammal - species unspecified	-	-	-	-

Conclusion/Summary

- Skin** : Hydrogen Peroxide:slightly irritant
- Eyes** : Sodium chlorate:Causes serious eye irritation.
Hydrogen Peroxide:Severe irritant, Risk of serious damage to eyes.
- Respiratory** : Hydrogen Peroxide:May cause respiratory irritation.
- Sensitization**
- Skin** : Hydrogen Peroxide:Not sensitizing

Carcinogenicity

Product/ingredient name	CAS #	IARC	NTP	OSHA
Sodium chlorate		Not classified.	Not classified.	Not classified.
Hydrogen Peroxide	7722-84-1	Not classified.	Not classified.	Not classified.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
PurDOX™ BCD	Category 1	Inhalation	digestive system and respiratory tract
Sodium chlorate	Category 3	Not applicable.	Respiratory tract irritation

Acute toxicity estimates

Route	ATE value (Acute Toxicity Estimates)
Oral	1967.2 mg/kg
Dermal	46400 mg/kg
Inhalation (vapors)	7.5 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Result	Species	Exposure
Hydrogen Peroxide	-	Acute EC50 1.38 mg/l (growth rate)	Algae - Skeletonema costatum	72 hours
	-	Acute EC50 2.4 mg/l	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 16.4 mg/l	Fish - Pimephales promelas	96 hours
	-	Chronic NOEC 0.63 mg/l (growth rate)	Algae - Skeletonema costatum	72 hours
	-	Chronic NOEC 0.63 mg/l	Daphnia - Daphnia magna	21 days

Conclusion/Summary : Not available.

Persistence and degradability

Section 12. Ecological information

Conclusion/Summary : Not available.

Product/ingredient name Hydrogen Peroxide	Aquatic half-life -	Photolysis -	Biodegradability Readily
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Bioaccumulative potential

Product/ingredient name Hydrogen Peroxide	LogP_{ow} -1.1	BCF -	Potential low
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Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.






Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : 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.

RCRA classification : : 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)

Section 14. Transport information

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

PG* : Packing group

RQ : 0 lbs

Section 15. Regulatory information

SARA 311/312	: Fire hazard Immediate (acute) health hazard		
SARA Title III Section 302 Extremely Hazardous Substances	: Hydrogen Peroxide	<u>CAS number</u> 7722-84-1	<u>Concentration (%)</u> ≤10
SARA Title III Section 313 Toxic Chemicals	: None		
US EPA CERCLA Hazardous Substances (40 CFR 302.4)	: None		
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.

<u>Ingredient name</u>	<u>CAS number</u>	<u>State Code</u>	<u>Concentration (%)</u>
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.

Control Act

Section 16. Other information

Hazardous Material Information System	:	<table border="1"> <tr> <td>Health</td> <td>4</td> </tr> <tr> <td>Flammability</td> <td>0</td> </tr> <tr> <td>Physical hazards</td> <td>1</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Health	4	Flammability	0	Physical hazards	1		
Health	4									
Flammability	0									
Physical hazards	1									

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme
*=Chronic

The customer is responsible for determining the PPE code for this material. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.) :



0= Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

Section 16. Other information

Our method of hazard communication is comprised of Product Labels and Safety Data Sheets. HMIS and NFPA ratings are provided as a customer service.

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Version : 1
Product Safety and Regulatory Affairs

✔ Indicates information that has changed from previously issued version.

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