SAFETY DATA SHEET

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

1. Identification

Product identifier	**PurDOX**
Other means of identification	Material number: 57960438
Recommended use	Industrial use
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	International Dioxcide, Inc.
Address	40 Whitecap Drive North Kingstown, RI 02852 United States of America
Telephone	Information #: (800) 477-6071
Website	https://idiclo2.com
E-mail	idiclo2@ercoworldwide.com
Emergency phone number	Canada & U.S.A.: (800) 424 9300 (CHEMTREC) International: (703) 527 3887

Supplier Refer to Manufacturer

2. Hazard(s) Identification

Physical hazards	Oxidizing liquids	Category 2
Health hazards	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 (respiratory tract irritation) (inhalation)	Category 1

Environmental hazards Not currently regulated by the Canadian Hazardous Products Regulation (WHMIS 2015), refer to Section 12 for additional information.

Label elements

Signal word Danger

Hazard statement	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).
Precautionary statement	
Prevention	Wear protective gloves/clothing and eye/face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible 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	Get medical attention if you feel unwell. IF INHALED: Remove person to fresh air and keep 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. 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.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazard(s) not otherwise classified (HNOC)	None
Supplemental information	Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.

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

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

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.

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.

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.

Most important symptoms/effects, acute and delayed

Causes serious eye damage. Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage. 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. Causes severe burns. Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage. Harmful if swallowed. May cause burns to mouth, throat and stomach. Corrosive with symptoms of coughing, burning, ulceration, and pain. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

Indication of immediate medical attention and special treatment needed	No specific data
General information	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. No special measures required.

5. Fire-Fighting Measures

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire. In case of fire, use water spray (fog), foam or dry chemical.
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 firefighting may be corrosive.
Special protective equipment and precautions for firefighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Firefighting equipment/instructions	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.
Specific methods	No specific data
General fire hazards	No specific data
Hazardous combustion products	Decomposition products may include the following materials: halogenated compounds, metal oxide/oxides.

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.

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.

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).

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. 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, including any incompatibilities

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.

8. Exposure Controls/ Personal Protection

Occupational exposure limits

Hydrogen Peroxide:
ACGIH TLV (United States, 3/2016).
TWA: 1 ppm 8 hours.
TWA: 1.4 mg/m³ 8 hours.
OSHA PEL (United States, 6/2016).
TWA: 1 ppm 8 hours.
TWA: 1.4 mg/m³ 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

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.

Skin protection

Hand protection

Permeation resistant gloves.

Other

Permeation resistant clothing and foot 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.

Thermal Hazards

None known

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
Colour	Clear to light blue
Odor	Not available

Odor threshold	Not available
Molecular formula	Not available
Molecular weight	Not available
pH	4.5 to 5
Melting point/Freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Closed cup: Not applicable.
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Flammability limit – lower (%)	Not available
Flammability limit – upper (%)	Not available
Explosive limit – lower (%)	Not available
Explosive limit – upper (%)	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	Not available
Solubility (ies)	
Solubility (water)	Not available
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Density	1.38 g/cm^3
Flammability	Not available
Specific gravity	1.38
Surface tension	Not available

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.

11. Toxicological Information

Information on likely routes of exposure

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.
Ingestion	Harmful if swallowed. May cause burns to mouth, throat and stomach.
Skin contact	Causes severe burns.
Eye contact	Causes serious eye damage.

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

Effects of short-term (acute) exposure:	Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage. Corrosive with symptoms of coughing, burning, ulceration, and pain. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.
Effects of long-term (chronic) exposure:	Not available.

Information on toxicological effects

Acute toxicity

Product	**Species**	**Test Results**
Sodium chlorate		
Acute		
LD50 Oral	Rat	1200 mg/kg
LC50 Inhalation, vapor	Rat	>7 mg/l over 4 hours

Product	**Species**	**Test Results**
Hydrogen peroxide		
Acute		
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.

Skin corrosion/irritation	Hydrogen Peroxide: Slightly irritant
Serious eye damage/eye irritation	Sodium chlorate: Causes serious eye irritation. Hydrogen Peroxide: Severe irritant, Risk of serious damage to eyes.
Respiratory sensitization	Hydrogen Peroxide: May cause respiratory irritation.
Skin sensitizer	Hydrogen Peroxide: Not sensitizing
Germ cell mutagenicity	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
IARC Monographs. Overall Evaluation of Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Reproductive toxicity	No known significant effects or critical hazards.
Specific target organ toxicity - single exposure	PurDOX™: Category 1, inhalation (digestive system and respiratory tract). Sodium Chlorate: Category 3 (respiratory tract irritation).
Specific target organ toxicity - repeated exposure	Not applicable
Aspiration toxicity	Not expected to be an aspiration hazard.
Chronic effects	Not available

12. Ecological Information

Ecotoxicity

Components	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

Bio accumulative potential Hydrogen Peroxide: LogPow -1.1, low potential

Mobility in soil Not available

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.

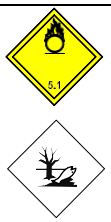
Local disposal regulations Dispose in accordance with all applicable regulations

Hazardous waste code Not available

Waste from residues / unused products Not available

Contaminated packaging Not available

14. Transport Information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN3139	OXIDIZING LIQUID, N.O.S. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	II		**Marine Pollutant** Marine pollutant **Explosive Limit and Limited Quantity Index** 1 **Passenger Carrying Road or Rail Index** 1 **Special Provisions** 16
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

15. Regulatory Information

CEPA Status All components of this product are on the Canadian DSL list.

U.S. Toxic Substances Control Act Listed on the TSCA Inventory.

16.Other Information

Issue date 8/9/2021

Revision # 5

Revision Indicator Company logo updated.

List of abbreviations	ACGIH: American Conference of Governmental Industrial Hygienists CAS: Chemical Abstract Services CFR: Code of Federal Regulations DSL: Domestic Substance List EINECS: European Inventory of Existing Commercial chemical Substances EPA: Environmental Protection Agency HSDB® - Hazardous Substances Data Bank IARC: International Agency for Research on Cancer IATA: International Air Transport Association IBC: Intermediate Bulk Container IMDG: International Maritime Dangerous Goods LC: Lethal Concentration LD: Lethal Dose NIOSH: National Institute of Occupational Safety and Health NTP: National Toxicology Program OECD: Organization for Economic Cooperation and Development OSHA: Occupational Safety and Health Administration PPE: Personal Protective Equipment RTECS: Registry of Toxic Effects of Chemical Substances SDS: Safety Data Sheet TWA: Time Weighted Average WHMIS: Workplace Hazardous Materials Information System
References	None.

Disclaimer

Information presented in this SDS is furnished in accordance with the Workplace Hazardous Materials Information System (WHMIS).

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