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	**ERCOPure™ BCD-31**
Other means of identification	Sodium Chlorite Solution, ERCOPURE
Recommended use	Generation of chlorine dioxide for use as an oxidant. Bleaching of textiles and other fibers.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	International Dioxcide, Inc. an ERCO Worldwide Company
Address	ERCO Worldwide 5050 Satellite Drive Mississauga ON, L4W 0G1 Canada
Telephone	(416) 239-7111 (M- F: 8:00 am – 5:00pm EST)
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 None

Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 3
	Serious eye damage	Category 1
	Specific target organ toxicity, repeated exposure (blood, kidneys, liver, spleen)	Category 2
	Skin corrosive	Category 1B

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	Harmful if swallowed. Toxic if inhaled. Causes serious eye damage. May cause damage to organs through prolonged or repeated exposure (blood, kidneys, liver, spleen). Causes severe skin burns and eye damage.
Precautionary statement	
Prevention	Wear protective gloves, protective clothing, eye protection, face protection. Do not eat, drink or smoke when using this product. Do not breathe dust, fume, gas, mists, vapours, spray. Wash hands and face thoroughly after handling. Use only outdoors or in a well-ventilated area.
Response	**IF SWALLOWED:** Call a POISON CENTER or doctor if you feel unwell. 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 skin irritation occurs: Get medical attention. **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. **IF** exposed or concerned: Call a POISON CENTER or doctor.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents and containers in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Contact with some metals will generate flammable hydrogen gas. Chronic skin contact with low concentrations may cause dermatitis. Contact with acids or reducing agents will generate toxic chlorine dioxide gas. If Sodium Chlorite dries on some types of fire-retardant clothing it is known to cause an exothermic reaction. The reaction has been known to cause burns to skin. Nomex appears to be the only material not to experience this reaction.
Supplemental information	Not applicable.

3. Composition/Information on Ingredients

Chemical name	Common name and synonyms	CAS number	Conc. % By Weight
Sodium Chlorite	None	7758-19-2	31 w/w%

Dihydrogen Oxide	Water	7732-18-5	Balance

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

4. First-Aid Measures

Inhalation

Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, trained personnel should give oxygen. If breathing stops, provide artificial respiration. Call a POISON CENTER or doctor/physician.

Skin Contact

Take off immediately all contaminated clothing. Immediately flush skin with running water for at least 20 minutes. Wash contaminated clothing promptly. Leather and shoes that have been contaminated with the solution may need to be destroyed. Immediately call a POISON CENTER or doctor/physician.

Eye Contact

Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor/physician.

Ingestion

Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms/effects, acute and delayed

Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May be harmful if swallowed. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Can cause severe skin burns. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Prolonged exposure may cause chronic effects. Material is irritating to mucus membranes and upper respiratory tract. Symptoms may include bloody nose and sneezing. High concentrations may cause lung damage.

Indication of immediate medical attention and special treatment needed

Immediate medical attention is required. Causes chemical burns. May be harmful if swallowed. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-Fighting Measures

Suitable extinguishing media	Water spray, fog (flooding amounts). Water only; no dry chemical, CO_2 or Halon. This product itself does not burn but combustibles wetted with this solution and subsequently dried are easily ignited and burn vigorously.
Unsuitable extinguishing media	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. Use chemical extinguishing agents with caution.
Specific hazards arising from the chemical	May intensify fire; oxidizer when dry. Drying of this product on clothing or combustible materials may cause fire.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. If Sodium Chlorite dries on some types of fire-retardant clothing it is known to cause an exothermic reaction. The reaction has been known to cause burns to skin. Nomex appears to be the only material not to experience this reaction.
Firefighting equipment/instructions	Evacuate area. Remove all sources of ignition. In case of fire: Stop leak if safe to do so. Move combustibles out of path of advancing pool if you can do so without risk. Move containers from fire area if you can do so without risk. Fight fire from upwind to avoid exposure to combustion products. In case of fire and/or explosion do not breathe fumes.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May intensify fire; oxidizer when dry.
Hazardous combustion products	Disodium oxide. Hydrogen chloride. Oxygen. Contact with acids, organic materials, reducing agents or chlorine donors will produce chlorine dioxide gas and heat. Ventilate area with large amounts of air to keep the chlorine dioxide concentration low.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. DO NOT USE RAGS, SAWDUST OR OTHER COMBUSTIBLE ABSORBENTS.

Methods and materials for containment and cleaning up	Ventilate the contaminated area. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Absorb in dry sand or earth and place into containers. Use water spray to reduce vapors or divert vapor cloud drift. Do not let the product dry. **Small Spills:** Absorb spill with dry sand, earth or other inert material. Neutralize the spilled material before disposal. **Large Spills:** Stop the leak, if this is without risk. Dike the spilled material, where this is possible. Absorb in dry sand or earth and place into containers. If not recoverable, dilute with water or flush to holding area and neutralize. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and Storage

Precautions for safe handling	Use only in a well-ventilated area. Wear chemically resistant protective equipment during handling. Do not breathe mist or vapor. Do not taste or swallow. Keep away from heat. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not let the product dry. When using, do not eat, drink or smoke. Keep away from clothing and other combustible materials. Observe good industrial hygiene practices. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Store away from incompatible materials (see Section 10 of the SDS). Store in original tightly closed container. Do not store near combustible materials. Do not handle or store near an open flame, heat or other sources of ignition.

8. Exposure Controls/ Personal Protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below

recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use separate, corrosion-resistant ventilation system to capture mist or fume. Do not use wood or other combustibles to construct vent system. Prevent entry into bearings or gear boxes, which could cause an explosion. Provide eyewash station.

Individual protection measures, such as personal protective equipment:

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin protection

Hand protection

Gloves impervious to the material are recommended, such as butyl rubber or neoprene gloves. Advice should be sought from glove suppliers.

Other

Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield. Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Eye wash facilities and emergency shower must be available when handling this product.
If Sodium Chlorite dries on some types of fire-retardant clothing it is known to cause an exothermic reaction. The reaction has been known to cause burns to skin. Nomex appears to be the only material not to experience this reaction.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH/MSHA approved air-purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may be used to reduce exposure. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134). Seek advice from respiratory protection specialists.

Thermal Hazards

If Sodium Chlorite dries on some types of fire-retardant clothing it is known to cause an exothermic reaction. The reaction has been known to cause burns to skin. Nomex appears to be the only material not to experience this reaction.

General hygiene considerations

Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Upon

completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance	Aqueous solution.
Physical state	Liquid.
Form	Liquid.
Colour	Clear water-white to slightly yellow liquid
Odor	Odorless to slight Chlorine-like or faint bleach-like
Odor threshold	Not available
Molecular formula	$NaClO_2$
Molecular weight	90.45
pH	>12
Melting point/Freezing point	3°C (37.4°F)
Initial boiling point and boiling range	106 °C (1013 hPa)
Flash point	Closed cup: >100°C (>212°F)
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not applicable
Flammability limit – upper (%)	Not applicable
Explosive limit – lower (%)	Not available
Explosive limit – upper (%)	Not available
Vapor pressure	19.87 hPa (20℃)
Vapor density	Not available
Relative density	Not available
Solubility (ies)	
Solubility (water)	Miscible in water
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Dynamic: 3.26 mPa·s
Other information	
Density	1.26 g/cm³
Flammability	Not applicable
Specific gravity	Not available
Surface tension	Not available

10. Stability and Reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport. Reacts on mixing with acids to give toxic chlorine dioxide and chlorine gases. Mixtures with combustibles, if allowed to dry

out, are easily ignited by heat or friction and burn vigorously or may explode.

Chemical stability	Material is stable under normal conditions. Will decompose if heated. Absorption of atmospheric carbon dioxide may lower the pH of the solution, which will cause it to slowly decompose.
Possibility of hazardous reactions	Contact with acids, organic materials, reducing agents and oxidizing agents will release toxic gases of chlorine and/or chlorine dioxide.
Conditions to Avoid	Keep away from heat, sparks and open flame. Keep away from direct sunlight and contact with incompatible materials. This product may react with reducing agents.
Incompatible materials	Combustible material. Acids. Organic compounds. Oxidizing agents. Metals. Sulfur and Sulfur-containing materials. Ethylene glycol. Ammonia. Amines. Phosphorus. Reducing agents.
Hazardous decomposition products	In the event of fire, the following can be released: Chlorine, Chlorine Dioxide.

11. Toxicological Information

Information on likely routes of exposure

Inhalation	Toxic if inhaled.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage/irritation.
Ingestion	Harmful if swallowed.

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

Effects of short-term (acute) exposure:	Causes serious eye damage, may cause severe irritation and possibly burns. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Causes severe skin burns. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Acute ingestion of large quantities may also cause anemia due to the oxidizing effects of the chemical. Material is irritating to mucous membranes and upper respiratory tract. Symptoms may include coughing, bloody nose and sneezing. High concentrations can cause lung damage.

May be harmful if swallowed. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

Effects of long-term (chronic) exposure: Prolonged exposure may cause chronic effects. Dermatitis is likely to occur from repeated or prolonged contact. Other symptoms may include methemoglobinemia (causes bluish discolouration of the skin and mucous membranes). Will irritate and may cause corrosion of the gastrointestinal tract.

Information on toxicological effects

Acute toxicity

Product	**Species**	**Test Results**
Sodium Chlorite Solution 40%		
Acute		
Inhalation		
LC_{50}	Rat	0.58 mg/L (Calculated ATE at 40%)
Oral		
LD_{50}	Rat	413 mg/kg (Calculated ATE at 40%)

Product	**Test**	**Test Results**
Sodium Chlorite Solution 37%		
Dermal	OECD Guideline 435, "In Vitro Membrane Barrier Test Method for Skin Corrosion"	17 min (Average breakthrough time calculated at 37%)

Components	**Species**	**Test Results**
Sodium Chlorite (CAS 7758-19-2)		
Acute		
Inhalation		
LC_{50}	Rat	0.23 mg/L (Mist)
Oral		
LD_{50}	Rat	165 mg/kg

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

Skin corrosion/irritation Can cause severe skin burns.

Serious eye damage/eye irritation	Can cause serious eye damage/irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not expected to be a respiratory sensitizer.
Skin sensitizer	Not sensitizing.
Germ cell mutagenicity	Not expected to be mutagenic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	Sodium Chlorite (CAS 7758-19-2) Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
Reproductive toxicity	Not classified as a reproductive toxin.
Specific target organ toxicity - single exposure	Not classified as a specific target organ toxicity -single exposure.
Specific target organ toxicity - repeated exposure	Specific Target Organ Toxicity (STOT), Repeated Exposure: blood, kidneys, liver, spleen.
Aspiration toxicity	Not expected to be an aspiration hazard.
Chronic effects	Chronic skin contact with low concentrations may cause dermatitis. Prolonged or repeated overexposure may cause blood, liver, spleen and kidney effects.

12. Ecological Information

Ecotoxicity Toxic to aquatic life. In water and soil, sodium chlorite will eventually degrade to sodium chloride.

Components		Species	Test Results
Sodium Chlorite (CAS 7758-19-2)			
Aquatic			
Acute			
Algae	EC_{50}	Green algae (Selenastrum capricornutum)	1.2 mg/l

Crustacea	EC_{50}	Water flea (Daphnia)	0.025 mg/l
Fish	LC_{50}	Sheepshead minnow (Cyprinodon variegatus)	110 mg/l
Chronic Algae	EC_{50}	Green algae (Selenastrum capricornutum)	1 mg/l

Persistence and degradability Biodegradation is not applicable to inorganic substances.

Bio accumulative potential The product itself has not been tested.

Mobility in soil In soil, will degrade to sodium chloride but may form chlorine dioxide in contact with acidic soils. Chlorate is an intermediate product of decomposition; it will slowly degrade to chloride.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

Regulatory Information	UN Number	Proper Shipping Name	Classes	Packing Group	Label	Additional Information
TDG Classification	UN1908	CHLORITE SOLUTION	8	II		**Marine pollutant** Marine pollutant **Explosive Limit and Limited Quantity Index** 1 **Passenger Carrying Road or Rail Index** 1 **Remarks** Product classified per Transportation of Dangerous Goods Regulations sections 2.40-2.42 (Class 8) Product classified per Transportation of Dangerous Goods Regulations sections 2.7, 2.43-2.45 (Class 9).
IMDG Class	UN1908	CHLORITE SOLUTION	8	II		**Marine pollutant** Marine pollutant **Emergency Schedules (EmS)** F-A, S-B

IATA-DGR Class	UN1908	Chlorite Solution	8	II		**Marine pollutant** Marine pollutant **Passenger Aircraft** 851: 1 L **Cargo Aircraft** 855: 30 L

15. Regulatory Information

Country(s) or region	Inventory name	On inventory (yes/no) *
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16.Other Information

Issue date	3/31/2022
Revision #	9
Revision Indicator	Clarified precautionary statements, added FR clothing precaution and updated address

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	Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2014 (Chempendium, RTECs, HSDB, INCHEM). European Chemicals Agency, Classification Legislation, 2014. Material Safety Data Sheet from manufacturer. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2014.

Disclaimer

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

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