



Safety Data Sheet

Section 01 - Identification

Product Identifier	Anthium Dioxide
Other Means of Identification	Oxychlorine solution
Product Use and Restrictions on Use	Potable water, industrial wastewater treatment, pulp and paper bleaching, food processing, oxidation.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
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Section 02 - Hazard Identification

GHS-Classification

Acute Toxicity-Oral	Category 4
Acute Toxicity-Inhalation	Category 3
Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Irritation	Category 1
STOT-Repeated Exposure	Category 2

Physical Hazards

No known physical hazards.

Danger

Hazards Statements

H302 – Harmful if swallowed.

H331 – Toxic if inhaled.

H314 – Causes severe skin burns and eye damage.

H373 – May cause damage to the spleen through prolonged or repeated exposure.

Pictograms



Precautionary Statements

P405 – Store locked up.

P403 + P233 – Store in a well-ventilated place. Keep container tightly closed.

P280 – Wear protective gloves, protective clothing, eye protection, and face protection.

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin.

P363 – Wash contaminated clothing before reuse.

P271 – Use only outdoors or in a well-ventilated area.

P260 – Do not breathe mist, vapours or spray.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P270 – Do not eat, drink or smoke when using this product.

P301 + P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310 – Immediately call a POISON CENTER or doctor/physician.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Chlorine dioxide	10049-04-4	5-10%	
Inert Ingredients		90-95%	

Section 04 - First Aid Measures

Inhalation	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
Skin Contact / Absorption	If irritation occurs, wash affected area with plenty of water for 15-20 minutes. Seek medical attention if irritation occurs or persists.
Eye Contact	Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.
Ingestion	Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Additional Information	Note to physician: Probably mucosal damage may contraindicate the use of gastric lavage.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Chlorine dioxide does not burn. Extinguish fire using extinguishing agents suitable for the surrounding fire.
Unsuitable Extinguishing Media	DO NOT use dry chemical fire extinguishing agents containing ammonium compounds (such as som A:B:C agents) on oxidizers that contain chlorine, since explosive compounds can be formed. DO NOT use Halon extinguishers, or carbon dioxide.
Specific Hazards Arising From the Chemical	Contact with acids, organic materials, oxidizing agents, reducing agents or chlorine donors will produce chlorine dioxide gas and heat.
Special Protective Equipment and Precautions for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available.

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.

Environmental Precautions Prevent material from entering sewers.

Methods and Materials for Containment and Cleaning Up Dilute liquid with large amounts of water. Flush with water to remove any residue.

Section 07 - Handling and Storage

Precautions for Safe Handling Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

Conditions for Safe Storage Store in a cool, dry location away from incompatible materials. Avoid heat or freezing conditions. Store upright and do not stack drums over two high on pallets or partially filled drums. Use of a drum pump is suggested. Keep drum tightly closed when not withdrawing liquid.

Incompatibilities Acids, organic materials, oxidizing agents, reducing agents and chlorine donors will release chlorine dioxide.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Chlorine dioxide	ACGIH	TLV-TWA	0.1ppm
		TLV-STEL	0.3ppm
	OSHA	PEL-TWA	0.1ppm
		PEL-STEL	0.3ppm

Engineering Control(s)

Ventilation Requirements Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Hand Protection Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Skin and Body Protection Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

Respiratory Protection Wear NIOSH approved respiratory protection, as appropriate.

Thermal Hazards

Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Liquid
Colour	Clear, pale yellow/green
Odour	Chlorine/ozone like odour
Odour Threshold	Not Available

Property

pH	8.5 - 9.5
Melting Point/Freezing Point	-5°C
Initial Boiling Point and Boiling Range	105°C
Flash Point	>90°C
Evaporation Rate	Not Available
Flammability	Not flammable. However, it will increase flammability of other oxidizable or combustible materials.
Upper Flammable Limit	Not Available
Lower Flammable Limit	10% (as chlorine dioxide)
Vapour Pressure (mm Hg, 20°C)	~17.5mm Hg
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	Completely miscible in water.
Partition Coefficient: n-octanol/water	Not Available
Auto-ignition Temperature	Not Available
Decomposition Temperature	Not Available
Viscosity	Not Available
Explosive Properties	Not Available
Specific Gravity (Water=1)	1.065-1.095
% Volatiles by Volume	Not Available
Formula	Not Available
Molecular Weight	Not Available

Section 10 - Stability and Reactivity

Reactivity	Not Available.
Stability	Stable
Possibility of Hazardous Reactions	Not Available.
Conditions to Avoid	Not Available.
Incompatible Materials	Acids, organic materials, oxidizing agents, reducing agents and chlorine donors will release chlorine dioxide.
Hazardous Decomposition Products	Thermal decomposition will produce chlorine dioxide gas.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD₅₀	Dermal LD₅₀	Inhalation LC₅₀
Chlorine dioxide (5%)	1,880 mg/kg (rat)	Not Available	1,800 mg/m ³ (rat, 4hr)

Chronic Toxicity – Carcinogenicity

Component	IARC
Chlorine dioxide	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

Skin Corrosion/Irritation	Corrosive. Capable of causing severe burns, blisters, ulcers and permanent scarring.
Ingestion	May be harmful and may cause irritation of the gastrointestinal tract, nausea, vomiting and diarrhea if ingested.
Inhalation	Contact with incompatible materials will cause chlorine dioxide gas to be released, which can cause respiratory tract irritation, coughing, wheezing and burns of the mucous membranes. Inhalation of large amounts of chlorine dioxide may lead to pulmonary edema and bronchitis.
Serious Eye Damage/Irritation	Corrosive. Capable of producing severe eye burns and permanent damage, including blindness.
Respiratory or Skin Sensitization	Not Available.
Germ Cell Mutagenicity	Not Available.
Reproductive Toxicity	Not Available.
STOT-Single Exposure	Exposure to chlorine dioxide gas may aggravate existing medical conditions such as asthma, bronchitis or any other respiratory ailment.
STOT-Repeated Exposure	Prolonged or repeated exposure may cause gastrointestinal effects, abnormal decrease in number of red blood cells, abnormal decrease in red-blood-cell haemoglobin (hemoglobinemia). Prolonged or repeated inhalation of chlorine dioxide gas may cause chronic bronchitis or emphysema.
Aspiration Hazard	Not Available.
Synergistic Materials	Not Available.

Section 12 – Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Chlorine dioxide	E _b C ₅₀ (Algae, 96hr): 1.09 mg/L E _r C ₅₀ (Algae, 96hr): 5.33 mg/L	LC ₅₀ (Lepomis macrochirus, 96hr): 0.15mg/L	EC ₅₀ (Daphnia magna, 48hr): 1.8ppm
Biodegradability	Readily biodegradable.		
Bioaccumulation	Not Available.		
Mobility	Not Available.		
Other Adverse Effects	Not Available.		

Section 13 – Disposal Considerations

Waste From Residues/Unused Products Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Contaminated Packaging Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 – Transport Information

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated
Transport Hazard Class(es)	Not Regulated
Packaging Group	Not Regulated
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available

TDG

Other Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 – Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 – Other Information

Preparation Date September 4, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no

guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution[®] initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA

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