



# MATERIAL SAFETY DATA SHEET

## Sodium Chlorite Solution

### Section 01 - Chemical And Product And Company Information

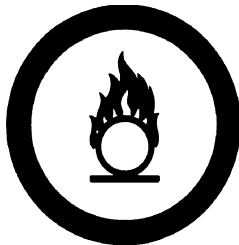
**Product Identifier** ..... ADOX 3125, 25% Aqueous Sodium Chlorite

**Product Use** ..... Generation of chlorine dioxide for use as a disinfectant/oxidant or for bleaching of textiles or other fibers.

**Supplier Name**..... ClearTech Industries Inc.  
1500 Hanselman Avenue  
Saskatoon, SK. Canada  
S7K 1V7

**Prepared By**..... ClearTech Industries Inc. Technical Department  
Phone:1 (800) 387-7503

**24-Hour Emergency Phone**..... 1 (800) 387-7503



### Section 02 - Composition / Information on Ingredients

**Hazardous Ingredients**..... Sodium Chlorite 25%

**CAS Number**..... Sodium Chlorite 7758-19-2

**Synonym (s)**..... Chlorous acid and sodium salt



**Section 03 - Hazard Identification**

- Inhalation**..... Inhalation of vapors or mists may cause irritation of the mucous membranes and respiratory tract. Symptoms may include coughing, bloody nose, and sneezing. Severe overexposure may cause lung damage.
- Skin Contact / Absorption**..... Direct contact may cause irritation and/or burns with symptoms of redness, itching, swelling, and possible burns and blistering due to being a corrosive material.
- Eye Contact**..... Direct contact may cause irritation and/or burns with symptoms of redness, itching, swelling and possible destruction of tissue.
- Ingestion**..... Ingestion may cause gastroenteritis with any or all of the following symptoms: nausea, vomiting, lethargy, diarrhea, bleeding, or ulceration. Acute ingestion of large quantities may also cause anemia due to the oxidizing effects of the chemical.
- Exposure Limits**..... None established for sodium chlorite. However, under exposure to acids, organic materials, reducing agents or chlorine donors chlorine dioxide is released. Exposure limits for chlorine dioxide are:  
  
OSHA/PEL: 0.10ppm  
ACGIH/TLV: 0.10ppm  
STEL: 0.30ppm  
IDHL: 5ppm

**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**..... Remove contaminated clothing. Wash affected area with soap and water for at least 5 minutes or until chemical is removed. If irritation persists , repeat flushing and seek medical attention.
- Eye Contact**..... Do not rub eyes, and flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.
- Ingestion**..... Do not give anything by mouth if the person is unconscious or having seizures. Do not induce vomiting. Drink large quantities of water if able to swallow. If milk is available follow the water with milk. Seek immediate medical attention.
- Additional Information**..... Probable mucosal damage may contraindicate the use of gastric lavage.



## Section 05 - Fire Fighting

- Conditions of Flammability**..... Product does not burn in solution form, however it may increase flammability of combustible, organic or other oxidizing materials due to it being a strong oxidizing chemical. If spilled product is allowed to dry, it becomes flammable as it becomes easy to ignite by heat or friction.
- Means of Extinction**..... Extinguish fire using agent suitable for surrounding fire.
- Flash Point**..... Not Applicable
- Auto-ignition Temperature**..... Not Applicable
- Upper Flammable Limit** ..... Not Applicable
- Lower Flammable Limit**..... Not Applicable
- Hazardous Combustible Products**.... If product is allowed to dry, heat or friction can easily ignite this product. Do not allow this product to dry on cloth or clothing. Oxidation can cause a fire hazard.
- Special Fire Fighting Procedures**..... Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
- Explosion Hazards**..... Contact with acids, organic materials, reducing agents or chlorine donors will produce chlorine dioxide gas and heat. The lower explosive limit for chlorine dioxide is 10%. Flush area with large amounts of air to keep the chlorine dioxide concentration below 10%.



**Section 06 - Accidental Release Measures**

**Leak / Spill**..... Evacuation procedures must be placed into effect. Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area and immediately downwind. Utilize emergency response personal protective equipment prior to the start of any response. This product may represent an explosion hazard, in the form of explosive chlorine dioxide gas if it contacts acid or chlorine. Remove all sources of ignition, such as flames, hot glowing surfaces or electric arcs. Stop source of spill as soon as possible and notify appropriate personnel.

Notify all downstream water users of possible contamination. Create a dike or trench to contain all liquid material. Spill materials may be absorbed using clay, soil or non-flammable commercial absorbents. Flush spill area with large amounts of water. If allowed to dry, dried material can ignite in contact with combustible materials so do not allow spills to dry up. Do not place spill materials back in their original container. Containerize and label all spill materials properly.

**Deactivating Materials**..... Small spills that have been diluted with water can be neutralized with sodium sulphite or sodium bisulphite solutions.

**Section 07 - Handling and Storage**

**Handling Procedures**..... 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.

**Storage Requirements**..... Do not expose to direct sunlight or ultraviolet light. Protect product from freezing. Avoid contact with incompatible materials. Store in a cool, dry location in closed containers.

**Section 08 - Personal Protection and Exposure Controls**

**Protective Equipment**

**Eyes**..... 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.

**Respiratory**..... Wear a NIOSH approved respiratory protection as appropriate for sodium chlorite solution.

Full face piece respirator with chlorine dioxide appropriate cartridges (non-oxidizable), supplied air respirators, or self-contained breathing apparatus may also be worn as chlorine dioxide gas can be released if sodium chlorite solution comes in contact with incompatible materials.



- Gloves**..... Impervious gloves of chemically resistant material (butyl rubber or neoprene) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
- Clothing**..... Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
- Footwear**..... Impervious boots of chemically resistant material should be worn at all times.

### Engineering Controls

- Ventilation Requirements**..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.
- Other**..... Keep an eye wash fountain and safety shower available and in close proximity to work area.

## Section 09 - Physical and Chemical Properties

- Physical State**..... Liquid
- Odor and Appearance**..... Clear to slightly yellow or green liquid, slight chlorine odor
- Odor Threshold**..... Not Available
- Specific Gravity (Water=1)**..... 1.20-1.23 at 20°C
- Vapor Pressure (mm Hg, 20°C)**..... 21
- Vapor Density (Air=1)**..... Not Available
- Evaporation Rate**..... Not Available
- Boiling Point**..... 106°C
- Freeze/Melting Point**..... -9°C
- pH**..... 12-13
- Water/Oil Distribution Coefficient**.....  $\log P(\text{oct}) = -7.18$
- Bulk Density**..... approximately 10.5lbs/gal
- % Volatiles by Volume**..... Not Available



**Solubility in Water**..... Completely miscible

**Molecular Formula**..... NaClO<sub>2</sub>

**Molecular Weight**..... 90.45

**Section 10 - Stability and Reactivity**

**Stability**..... Stable

**Incompatibility**..... Acids, reducing agents, combustible materials, oxidizers (such as hypochlorites), sulfur-containing rubber, dirt, soap, solvents, paints.

**Hazardous Products of Decomposition**.... Explosive and toxic chlorine dioxide gas will be generated on contact with acids or other incompatible materials.

**Polymerization**..... Will not occur

**Section 11 - Toxicological Information**

**Irritancy**..... Irritant to the mucous membranes and respiratory tract. Symptoms may include coughing, bloody nose, and sneezing. Severe overexposure may cause lung damage.

**Sensitization**..... Not available

**Chronic/Acute Effects**..... The chronic ingestion of low concentrations of this product has been studied in laboratory animals. Concentrations in the drinking water of 100ppm and higher have been shown to cause mild anemia and a minor suppression of thyroid functions in laboratory animals. All effects were reversible after cessation of treatment.

Clinical studies of communities using sodium chlorite, as a disinfectant found no adverse effects in the human population studied. However, other studies have suggested that those individuals deficient in an enzyme (G6PD) utilized in hemoglobin synthesis might be susceptible to the development of anemia if exposed repeatedly.

Repeated exposures to solutions of chlorine dioxide at concentrations of 10-100ppm have produced slight effects upon the thyroid in younger animals and the hematologic system. Exposures to these concentrations can reduce the cellular and blood levels of glutathione, an agent which is protective against the oxidizing effect of this chemical. Exposures of laboratory animals above 100ppm in the drinking water have shown a decrease in blood cell glutathione, red blood cell count and hemoglobin. In some studies these levels also caused a slight decrease in thyroid hormones, especially in younger animals.



<b>Synergistic Materials</b> .....	Not available
<b>Animal Toxicity Data</b> .....	LD <sub>50</sub> (Oral, Rat): 165mg/kg (sodium chlorite) LD <sub>50</sub> (Oral, Rat): 292mg/kg (chlorine dioxide)
<b>Carcinogenicity</b> .....	Sodium chlorite is not listed by NTP, IARC, OSHA, EPA or any other authority as a carcinogen.
<b>Reproductive Toxicity</b> .....	The CMA conducted a two-generation reproductive study with developmental neurotoxicity to evaluate the effects of sodium chlorite on reproduction and pre- and post-natal development when administered orally via drinking water to male and female Sprague Dawley rats for ten weeks prior to mating. Dosing continued during the mating period, pregnancy and lactation. The final report concluded that there were no meaningful treatment related effects at any dose level for systemic, reproductive/developmental, and developmental neurological end points. Hematological effects and reduced body weight gains were observed in some treatment groups.
<b>Teratogenicity</b> .....	Sodium chlorite has not been found to be teratogenic in studies in which animals have been exposed up to 100ppm in the drinking water. Male rats repeatedly exposed to concentrations of 100ppm or greater in the drinking water have shown slight effects on sperm motility. No effects were observed at 10ppm and no effects were observed on fertility rate, histology of the male reproductive system or conception rate of animals exposed at 10ppm or higher.
<b>Mutagenicity</b> .....	Sodium chlorite has been evaluated for possible mutagenic effects in several laboratory tests. Sodium chlorite tested positive in the Ames Salmonella reverse mutation assay without metabolic activators and caused chromosomal aberrations in an in vitro Chinese hamster fibroblast cell line without metabolic activators. Sodium chlorite also tested positive in the mouse micronucleus assay when administered intraperitoneally (directly into the body cavity), but was not mutagenic when administered orally. The significance of these tests results for human health is unclear because the oxidizing effects of the chlorite or salting effects of sodium may significantly affect the ability of the tests to accurately detect mutagens.

**Section 12 - Ecological Information**

<b>Fish Toxicity</b> .....	TL <sub>50</sub> (48 hours, Daphnia Magna): 0.29mg/L
<b>Biodegradability</b> .....	Sodium chlorite in water will eventually degrade to sodium chloride. Sodium chlorite in contact with acidic soil could produce chlorine dioxide.
<b>Environmental Effects</b> .....	This product is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into bodies of water unless in accordance with federal and/or provincial law.



### Section 13 - Disposal Consideration

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

### Section 14 - Transportation Information

#### TDG Classification

**Class**..... 8

**Group**..... II

**PIN Number**..... UN 1908

**Other**..... Secure containers (full and/or empty) with suitable hold down devices during shipment.

### Section 15 - Regulatory Information

**WHMIS Classification**.....C, D1, E

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

**NSF Certification**.....Product is certified by Underwriters Laboratories to NSF/ANSI Standard 60 for use in drinking water treatment disinfection and oxidation up to a maximum of 28mg/L.

### Section 16 - Other Information

**Preparation Date**..... January 14, 2011

**Revision Date**..... January 14, 2014  
March 18, 2014

**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 / MSDS 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 Material 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 or technical service department.





## ClearTech Industries Inc. - Locations

**Corporate Head Office: 1500 Quebec Avenue, Saskatoon, SK, S7K 1V7**

**Phone: 306-664-2522**

**Fax: 306-665-6216**

**[www.ClearTech.ca](http://www.ClearTech.ca)**

<b>Location</b>	<b>Address</b>	<b>Postal Code</b>	<b>Phone Number</b>	<b>Fax Number</b>
Richmond, B.C.	12431 Horseshoe Way	V7A 4X6	1 (800) 387-7503	1 (888) 281-8109
Port Coquitlam, B.C.	2023 Kingsway Ave	V3C 1S9	1 (800) 387-7503	1 (888) 281-8109
Calgary, AB.	5516E - 40 <sup>th</sup> St. S.E.	T2C 2A1	1 (800) 387-7503	1 (888) 281-8109
Edmonton, AB.	11750 - 180 <sup>th</sup> Street	T5S 1N7	1 (800) 387-7503	1 (888) 281-8109
Saskatoon, SK.	1500 Quebec Avenue	S7K 1V7	1 (800) 387-7503	1 (888) 281-8109
Regina, SK.	555 Henderson Drive	S42 5X2	1 (800) 387-7503	1 (888) 281-8109
Winnipeg, MB.	340 Saulteaux Crescent	R3J 3T2	1 (800) 387-7503	1 (888) 281-8109
Mississauga, ON.	7480 Bath Road	L4T 1L2	1 (800) 387-7503	1 (888) 281-8109

**24 Hour Emergency Number - All Locations - 1 (800) 387-7503**