SDS Code: 50079

Safety Data Sheet

CHLORINE DIOXIDE GENERATING CARTRIDGE

ClorDiSys Solutions, Inc. **Safety Data Sheet**

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common Name: **Chlorine Dioxide Generating Cartridge**

Chemical Name: Oxidizing Solid

Product Use and Restrictions on Use: Various Applications

Supplier: ClorDiSys Solutions, Inc
PO Box 549
Lebanon, NJ 08833

For Chemical Emergency Call PERS (24 Hours/Day, 7 Days/Week):
1-800-633-8253 (Domestic/Canada)
1-801-629-0667 (International)

2. Hazards Identification

EMERGENCY OVERVIEW: This product is a white, flaked, oxidizing solid. This product may have a slight chlorine odor.

Color: White
Form: Flakes / Powder
Odor: Odorless to slight chlorine odor

MAJOR HEALTH HAZARDS: CORROSIVE. FATAL IF INHALED. TOXIC IF SWALLOWED. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE DAMAGE. INGESTION MAY CAUSE DAMAGE TO: BLOOD SYSTEM AND KIDNEY SYSTEM. INHALATION MAY CAUSE DAMAGE TO THE RESPIRATORY SYSTEM. MAY CAUSES DAMAGE TO THE BLOOD AND KIDNEYS THROUGH PROLONGED OR REPEATED EXPOSURES.
Physical Hazards: STRONG OXIDIZER. Contact with other materials may cause fire or explosion.
Aquatic Toxicity: HARMFUL TO AQUATIC LIFE.
Precautionary Statements: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep/store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles, acids, chlorine or organic materials. Ear protective gloves, protective clothing, eye and face protection. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust. Avoid release to the environment.
Additional Hazards: This material is corrosive and an oxidizer. This material's pH and oxidative action contribute to its health and physical hazards.

GHS Classification:

GHS: Contact Hazard- Skin	Category 2 - Causes skin irritation
GHS: Contact Hazard- Eye	Category 1 - Causes serious eye damage
GHS: Acute Toxicity- Inhalation	Category 2 – Fatal if inhaled
GHS Acute Toxicity- Oral	Category 3 – toxic if Swallowed
GHS Target Organ Toxicity (Single Exposure)	Category 2 – May Cause Damage to Respiratory System, Blood, Kidneys
GHS Target organ Toxicity (Repeated Exposure)	Category 2 – May Cause Damage to Blood and/or Kidneys
GHS: Carcinogenicity	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC, or OSHA

GHS: Hazardous to Aquatic Environment- Acute Hazard	Category 3- Harmful to Aquatic Life

Unknown Acute Toxicity: *Not applicable. This product was tested as a whole. This information only pertains to untested mixtures. 100% of this product consists of ingredient(s) of known acute toxicity.*

GHS Symbol: *Oxidizer, Skull and Crossbones, Corrosion, Health Hazard.*

GHS Signal Word: DANGER

GHS Hazard Statements:

GHS Physical hazard Statement(s)

May intensify fire; oxidizer

GHS- Health Hazard Statement(s)

Fatal if Inhaled
Toxic if Swallowed
Causes Serious Eye Damage
Causes Skin Irritation
May Cause Damage to Organs (Respiratory, Kidney and Blood Systems)
May Cause Damage to Renal System (Kidneys) and Blood System Through Prolonged or Repeated Exposure

GHS- Precautionary Statement(s)

Do not Breathe Dust, Fume, Gas, Mist, Vapors, or Spray
In Case of Inadequate Ventilation, Wear Respiratory Protection
Wear Protective Gloves, Protective Clothing, Eye and Face Protection
Wash Thoroughly After Handling
Use Only Outdoors or in a Well-Ventilated Area
Do Not Eat, Drink or Smoke When Using This Product
Keep Away From Heat
Keep/Store Away From Clothing and Other Combustible Materials
Take any Precaution to Avoid Mixing with Combustibles

GHS- Precautionary Statement(s)

IF INHALED: Remove person to fresh air and keep comfortable for breathing
Specific treatment is urgent (see Section 4 of SDS or First Aid information on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing
IF SWALLOWED: Immediately call POISON CENTER or doctor/physician. Rinse mouth.
Specific Treatment (see Section 4 of the safety data sheet and/or the First Aid information on the product label)
IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
IN CASE OF FIRE: Use agent suitable for surrounding fire to extinguish

GHS Precautionary Statement(s)- Storage

Store locked up
Store in well-ventilated place. Keep container tightly closed

GHS- Precautionary Statement(s)- Disposal

Dispose of contents and container in accordance with applicable local, regional, national and/or international regulations.

Hazards Not Otherwise Classified (HNOC)

None Identified

See Section 11: Toxicological Information

NFPA Classification:		**HMIS Classification:**	
Health:	**1**	**Health:**	**1**
Flammability:	**1**	**Flammability:**	**0**

Instability:	**1**	**Reactivity:**	**0**
Special Hazards:	**OX**	**Personal Protection:**	**E**

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINECS #	% w/w	Exposure Limits in Air					
				ACGIH-TLV		OSHA-PEL		IDLK mg/m^3	Other mg/m^3
				TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3		
Sodium Chlorite	7758-19-2	231-836-6	70-76	NE	NE	NE	NE	NE	NE
Proprietary Inert Ingredient			24-30	NE	NE	NE	NE	NE	NE

NE = Not Established

Other Information: NOTE: The percentage by weight values reported for this product represent approximate formulation values.

4. FIRST AID MEASURES

Inhalation: If airborne dusts of this product are inhaled, remove victim to fresh air. If inhalation occurs and adverse effects result, remove to contaminated area. Evaluate ABC's (is Airways constricted, is Breathing occurring, is blood Circulating) and treat symptomatically. GET MEDICAL ATTENTION IMMEDIATELY.
Specific Treatment: There is no specific antidote. Treat symptomatically. Pulse oximetry may not be reliable, see notes to physician.

Ingestion: If this product is swallowed, DO NOT INDUCE VOMITING. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. Never give anything by mouth to an unconscious or convulsive person. GET MEDICAL ATTENTION IMMEDIATELY. CALL PHYSICIAN OR CALIFORNIA POISON CONTROL CENTER (1-800-764-7661; 1-800-876-4766) FOR MOST CURRENT INFORMATION.

Skin Contact: **Brush off excess chemical.** Begin decontamination with copious amounts of running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. GET MEDICAL ATTENTION IMMEDIATELY. Thoroughly clean and dry contaminated clothing before reuse. Discard leather goods.

Eye Contact: If the product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have the contaminated individual "roll" eyes. The recommended minimum flushing time is 15 minutes. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye.

Most Important Symptoms/Effects (Acute and Delayed)

Acute Symptoms/Effects: Listed Below

Inhalation (Breathing): Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchio-constriction, and possible pulmonary edema. Severe and permanent scarring may occur. The pulmonary edema may develop several hours after acute exposure.

Skin: Skin irritation. Skin exposure may cause irritation, redness, itching swelling, and burning sensation.

Eye: Serious eye damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye.

Ingestion (Swallowing): Ingesting this material may cause irritation, nausea, and vomiting. Oxidation may cause significant metabolic issues such as methemogobinemia, hemolysis, and intravascular coagulation and renal failure.

Delayed Symptoms/Effects:

Repeated and prolonged skin contact may cause dermatitis.

Interaction with Other Chemicals Which Enhance Toxicity: Mixing with ammonia, acids, detergents, or organic matter will release chlorinated compounds, which are irritating to eyes, lungs, and mucus membranes. Chlorine dioxide vapors are emitted when this product contacts acids, chlorine or bleach.

Medical Conditions Aggravated by Exposure: May aggravate preexisting conditions such as: Eye disorders that decrease tear production or have reduced integrity. Skin disorders that compromise the integrity of the skin. Respiratory conditions including asthma and other breathing disorders. Ingestion may induce G6PD deficiency, hemolysis and renal failure. G6PD deficiency, hemoglobinopathies, renal compromise, and conditions causing hypoxia may be aggravated by ingestion of this material.

Protection to First-Aiders: Protect yourself by avoiding contact with this material. Avoid contact with skin and eyes. Do not ingest. Do not breathe dust. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations. At minimum, treating personnel should utilize PPE sufficient for prevention of blood borne pathogen transmission.

Notes to Physicians: Chlorine dioxide vapors are emitted when this product contacts acids or chlorine. If these vapors are inhaled, monitor patient closely for delayed development of pulmonary edema which may occur up to 48-72 hours post inhalation. Following ingestion, neutralization and use of activated charcoal is not indicated. Probable mucosal damage may contraindicate the use of gastric lavage. Treat as a corrosive due to the pH of this material. This is also a strong oxidizer which will react with tissue in the presence of water. For prolonged exposures and significant exposures, considered delayed injury to exposed tissues. There is no specific antidote. Treatment is supportive care. Follow normal parameters for airway, breathing and circulation. Ingestion of even small amounts of solution should be closely monitored for methemoglobinemia, hemolysis, and glutathione depletion, followed by renal failure. This chemical acts similarly to its related compound chlorate, and produces a drug induced G6PD deficiency. Methylene blue has not been reported as effective. Consult the PubMed Case Report PMID 22996135 for the case description and treatment utilized.

5. FIRE FIGHTING MEASURES

Flash Point, C: Not Applicable
Autoignition Temperature, C: Not Applicable
Lower explosive Limit, %: Not Applicable
Upper Explosive Limit, %: Not Applicable
Extinguishing Media: Select fire extinguishing media appropriate for the surrounding area.

Water Spray: YES (for cooling)	Carbon Dioxide: YES
Foam: YES	Dry Chemical: YES
Halon: YES	Other: Any "ABC" Class.

Fire Fighting Procedures: Prevent the spread of any released product to combustible objects. Structural firefighters must wear Positive-Pressure Self-Contained Breathing Apparatus and fully protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Cool fire-exposed containers with water to prevent rupture. Flood with a fine water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. Rinse contaminated equipment thoroughly before returning such equipment to service.

Unusual Fire and Explosion Hazards: This product is irritating and presents a moderate inhalation and contact hazard to firefighters. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., sodium oxides, hydrogen chloride). This product may become unstable at elevated temperatures. This product is an oxidizer; it can act to initiate and sustain the combustion of flammable materials.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate hazard area and deny entry. Keep unnecessary and unprotected personnel from entering the area. Avoid contact with the skin and eyes. Do not breathe dust, fume gas, mist, vapors or spray. Do not ingest. Wear appropriate personal protective equipment recommended in Section 8.

Methods and Materials for Containment and Cleaning Up: DO NOT use floor sweeping compounds to clean up spills. Dampen and scoop spilled material into clean, dedicated equipment. Do not dry sweep. Every attempt should be made to avoid mixing with other chemicals or debris when cleaning up. Keep collected material damp and put into drums. Dispose of in accordance with all applicable regulations.

Environmental Precautions: This material is harmful to aquatic life. Keep out of water supplies and sewers. Should not be released into the environment. Releases should be reported, if required, to appropriate agencies.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Do not taste or swallow. Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or dust when opening container. Avoid creation of dust or fumes. Wear personal protective equipment as described in Section 8. Wash thoroughly after handling. Use clean, dry utensils. Do not add the product to any dispensing device containing residuals of other products. Contamination may start a chemical reaction with generation of heat, liberation of hazardous gasses (chlorine dioxide- a poisonous, explosive gas), and possible fire and explosion. Do not contaminate with acids, reducing agents, combustible materials, oxidizing materials, hypochlorite, organic solvents and compounds, garbage, dirt, organic matter, household products, chemicals, soap products, paint products, vinegar, beverages, oils, pine oil, dirty rags, sulfur-containing rubber, or any other foreign matter, Do not drop, roll or skid drums.

Storage and Handling Practices: All employees who handle this material should be trained to handle it safely. Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Refer to NFPA 43A, *Liquid, Solid Oxidizers*, for additional information on storage. Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers that held this product.

Protective Practices During Maintenance of Contaminated Equipment: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and dispose of according to applicable U.S. Federal, State, or local procedures and appropriate Canadian standards.

Incompatibilities/Materials to Avoid: Acids, reducing agents, combustible materials, oxidizing agents, hypochlorite, organic solvents and compounds, garbage, dirt, organic materials, household products, chemicals, soap products, vinegar, beverages, oils, pine oil, dirty rags, sulfur-containing rubber, or any other foreign matter.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Regulatory Exposure Limit(s): None. This product does not contain any components that have regulatory occupational exposure limits (OEL's) established.

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration
PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

Non-Regulatory Exposure Limit(s): Listed below for the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

-The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown are Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

-The American conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called the Threshold Limit Values (TLV's) for hundreds of chemicals, physical agents, and biological exposure indices.

OXY REL 8hr TWA	1mg/m^3 recommended Time Weighted Average- 8 hour (internal Occupational Exposure Limit). This value is based on potential systematic effects from inhalation of sodium chlorite dust

Engineering Controls: Use only in well-ventilated areas. Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

Personal Protective Equipment

Eye Protection:	Safety glasses as authorized in 29 CFR 1910.133, applicable U.S. State regulations, or the appropriate standards of Canada and its Provinces or EC Member States (per European Standard EN 166).
Hand Protection:	None required when handling chemical in a sealed container. When direct contact with Chlorine Dioxide is possible, use butyl rubber, natural rubber, neoprene, and nitrile rubber gloves for routine use (do not use polyvinyl gloves). Gloves should be changed frequently during use of product. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS.
Body Protection:	None required when handling chemical in a sealed container. When direct contact with Chlorine Dioxide is possible, use body protection appropriate for task (e.g., gown or apron).
Respiratory Protection:	None normally required for routine use. If respiratory protection is needed, such as during use of this product with other materials, or during emergency response to uncontrolled releases, use only protection authorized in 29 CFR 1910.134, applicable U.S. State regulations, Canadian CSA Standard Z94.4-93, or EC Member States (per European Standard EN 149). Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).
Ventilation:	Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients), if applicable. If existing ventilation is not adequate, product should be used with a local exhaust hood, or in ductless fume hood/portable ventilation system. All ventilation systems should pull air at or below the open container in order to pull dusts away from the person using the product. Ensure eyewash/safety shower stations are available near areas where this product is used.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Solid.
Color:	White, flaky.
Odor:	Slight Chlorine.
Odor Threshold:	Not established.
Molecular Weight:	90.45
Molecular Formula:	NaClO2
Boiling Point:	Not established.
Melting /Freezing Point:	180-200°C (356-392°F)
Vapor Pressure, mm Hg @ 20°C:	Not established.
Relative Vapor Density (air = 1):	Not established.
Evaporation Rate (n-BuAc = 1):	Similar to water.
Specific Gravity (water = 1):	Not established.
Solubility in Water @ 25°C:	39%
pH (25% Solution):	> 12
Viscosity:	Not applicable.
Flash Point:	Not applicable.
Coefficient of Oil/Water Distribution (Partition Coefficient):	Not established.
How to Detect this Substance (warning properties):	The odor and appearance may be a distinguishing characteristic for this product if spilled.

10. STABILITY AND REACTIVITY

Reactivity:	Not reactive under normal temperatures and pressures.
Stability Data:	Stable at normal temperatures and pressures.
Possibility of Hazardous Reactions:	Avoid heat, flames, sparks and other sources of ignition. Avoid contamination with foreign materials. Avoid exposure to sunlight or ultraviolet light.
Incompatibility (Materials to Avoid):	Strong reducers, finely powdered metals, phosphorus, sulfur, zinc, ammonia, organic materials, combustible materials, acids, reducing agents, oxidizing materials, household products, chemicals, soap products, paint products, vinegar, beverages, oils, pine oil, dirty rags, sulfur-containing rubber, or any other foreign matter.
Hazardous Decomposition Products:	Products of thermal decomposition include sodium oxides and hydrogen

chloride. Chlorine dioxide is formed on contact with acids.

Polymerization: Will not occur.

Conditions/Hazards to Avoid: Avoid exposure to or contact with extreme temperatures, incompatible chemicals. Avoid mechanical shock or impact, if contaminated.

11. TOXOLOGICAL INFORMATION

Toxicity Data: The specific toxicology data available for the Sodium Chlorite component of this product are as follows. Data for other components are not given on this SDS.

SODIUM CHLORITE:

Mutation in Microorganisms (*Salmonella typhimurium*) = 300 μg/plate

DNA Inhibition (oral, rat) = 84 mg/kg/12 weeks/continuous

Sperm Morphology (oral, rat) = 660 mg/kg/66 days/continuous

Micronucleus Test (intraperitoneal, mouse) = 15 mg/kg

Cytogenetic Analysis (fibroblast, hamster) = 20 mg/L

TDLo (oral, rat) = 365 mg/kg/1 year/continuous; Blood: pigmented or nucleated red blood cells, changes in

and Gross Metabolic: weight loss or decreased weight gain

TDLo (oral, rat) = 182 g/kg/26 weeks/intermittent; Liver function tests

composition (e.g. TP, bilirubin, cholesterol), Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases.

SODIUM CHLORITE (continued):

TDLo (oral, rat) = 800 mg/kg/female 8–15 days after conception; Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (oral, rat) = 16 g/kg/female 8–15 days after conception; Reproductive: Fertility: post-implantation mortality (e.g. dead

and/or resorbed implants per total number of implants)

TDLo (oral, rat) = 660 mg/kg/male 66 days pre-mating; Reproductive: Paternal Effects: spermatogenesis (incl. genetic material, sperm morphology, motility, and count)

pre-mating/female 2 weeks pre-mating: 3 weeks post-birth; Reproductive: Effects on Newborn: biochemical and metabolic

mg/kg/female 8–15 days after conception; Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).

SODIUM CHLORITE (continued):

TDLo (intraperitoneal, rat) = 80 mg/kg/female 8–15 days after conception; Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (oral, mouse) = 29,750 mg/kg/85 weeks/continuous; Tumorigenic: Carcinogenic by RTECS criteria; Liver: tumors

TDLo (oral, mouse) = 22 g/kg/female 1–21 days after conception/lactating female

28 days post-birth; Reproductive: Effects on Newborn: growth statistics (e.g.%, reduced weight gain)

or unclassified; Kidney, Ureter, Bladder: interstitial nephritis; Biochemical: Metabolism (Intermediary): other

LC_{50} (inhalation, rat) = 230 mg/m^3/4 hours

LD_{50} (oral, guinea pig) = 300 mg/kg

Suspected Cancer Agent: The components of this product are not found on the following lists: U.S. FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

Irritancy of Product: This product may be mildly to moderately irritating to contaminated tissue, especially after prolonged or repeated exposure.

Sensitization of the Product: This product is not known to be a skin or respiratory sensitizer.

Reproductive Toxicity Information: Listed below is information concerning the effects of this product and its components on animal and human reproductive systems.

Mutagenicity: This product is not reported to produce mutagenic effects in humans. Animal mutation data are available for the Sodium Chlorite component of this product; these data were obtained during clinical studies on specific human animal tissues exposed to high doses of these compounds.

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans. Clinical studies on test animals exposed to relatively high doses of the Sodium Chlorite component of this product provided teratogenic data.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans. Clinical studies on test animals exposed to relatively high doses of the Sodium Chlorite component of this product provided reproductive toxicity data.

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ACGIH BIOLOGICAL EXPOSURE INDICES: Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for the components of this product.

Potential Health Effects

Inhalation (Breathing):	Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchio- constriction, and possible pulmonary edema. Severe and permanent scarring may occur. The pulmonary edema may develop several hours after acute exposure.
Skin:	Skin irritation. Skin exposure may cause irritation, redness, itching swelling, and burning sensation.
Eye:	Serious eye damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye.
Ingestion (Swallowing):	Ingesting this material may cause irritation, nausea, and vomiting. Oxidation may cause significant metabolic issues such as methemogobinemia, hemolysis, and intravascular coagulation and renal failure.
Signs and Symptoms of Exposure:	Depending on the degree and duration of exposure, possible signs and symptoms from contact of this material with the skin and eyes, breathing this material and swallowing this material may include:
Chronic Toxicity:	Sodium chlorite has produced hemolytic anemia in several animal species at concentrations of 100 mg/L or higher. In a subchronic study using rats, hematological alterations included decreased erythrocyte counts, hemoglobin levels, and hemacrit. Methemoglobin levels decreased in females, but increased in males. There is no evidence of kidney effects in humans; however, in animal studies with sodium chlorite, there is limited evidence of kidney effects.
Interaction with Other Chemicals Which Enhance Toxicity:	Mixing with ammonia, acids, detergents, or organic matter will release chlorinated compounds,**:** which are irritating to eyes, lungs, and mucus membranes. Chlorine dioxide vapors are emitted when this product contacts acids, chlorine, or bleach.

GHS Health Hazards: Listed Below

GHS: Acute Toxicity- Oral:	Category 3- Toxic if Swallowed
GHS: Acute Toxicity- Inhalation:	Category 2- Fatal if Inhaled
GHS: Contact Hazard- Skin:	Category 2- Causes Skin Irritation
GHS: Contact Hazard- Eye:	Category 1- Causes Serious Eye Damage
GHS: Carcinogenicity:	Not classified as a carcinogen per GHS, NTP, IARC, or OSHA criteria
Specific Target Organ Toxicity (Single Exposure):	Category 2- Respiratory System, Blood, Kidneys
Specific Target Organ Toxicity (Repeated/Prolonged Exposure):	Category 2- Blood, Kidneys
Mutagenic Data:	Not classified as a mutagen per GHS criteria. Sodium Chlorite has tested positive in some studies. The significance of these test 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.
Reproductive Toxicity:	Not classified as a reproductive toxin per GHS criteria. There is limited evidence of male reproductive effects in animal studies.
Developmental Toxicity:	Not classified as a developmental or reproductive toxin per GHS criteria. Observations in animal studies include decreased serum levels of thyroid hormones in offspring.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

Environmental Stability: The components of this product will slowly decompose into sodium chloride.

Effect of Material on Plants or Animals: This product may be harmful to plant and animal-life (especially if large quantities are released).

Biodegration: Chlorite ions are reduced by some bacteria under aerobic conditions

Bioconcentration: This material will not bioaccumulate

Effect of Chemical on Aquatic Life: This product may be harmful to aquatic plant and animal life.

Aquatic Toxicity

LC50 Carassius Auratus Goldfish = 11764.3mg/L (240 hour @ 23.5℃, tap water, static bioassay)

LC50 Tinca Tinca Tench = 112 mg/L (12 hour @ 25℃ freshwater, static bioassay)

LC50 Tinca Tinca Tench = 1142 mg/L (12 hour @ 20℃ freshwater, static bioassay)

LC50 Tinca Tinca Tench = 119 mg/L (24 hours @ 25℃ freshwater, static bioassay)

LC50 Tinca Tinca Tench = 104 mg/L (24 hours @ 20℃ freshwater, static bioassay)

EC50 Daphnia Magna Water Flea = 340.7-469.2 mg/L s.c. (48 hours @ 11.5-14.5℃ well water, static bioassay)

German Environmental Listings:

Aquatic Hazard Class (WGK): None of the components of this product have specific WGK classifications assigned. As such, the classification for this product, per the VwVS regulations is WGK 3.

Chemical	Rating
Sodium Chlorite	2

13. DISPOSAL CONSIDERATIONS

Waste from Material: Dispose in accordance with all applicable regulations. Do not put this product, spilled product, or fully/partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction and fire. Keep out of water supplies and sewers. May be subject to disposal regulations.

Container Management: Do not reuse or refill this container. Offer for recycling if available. Offer for reconditioning if appropriate. Triple rinse the container promptly after emptying. Triple rinse as follows: empty remaining contents into application equipment or mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Container rinsate must be disposed of in compliance with applicable regulations. Refer to the label for further details.

U.S. EPA WASTE NUMBER: D001 (Characteristic/Ignitability), applicable to wastes consisting only of this product

14. TRANSPORT INFORMATION

Land Transport

U.S. DOT 49 CFR 172.101:

Proper Shipping Name: Sodium Chlorite
Hazard Class Number and Description: 5.1 (Oxidizer)
UN Identification Number: UN 1496
Packing Group: PG II
DOT Label(s) Required: 5.1 Oxidizer

Canadian Transportation of Dangerous Goods:
This material is considered as dangerous goods. Use the above information for the preparation of Canadian Shipments. Additional Canadian information provided below.

UN Identification Number: UN 1496
Proper Shipping Name: Sodium Chlorite
Hazard Class Number and Description: 5.1 (Oxidizer)
Packing Group: PG II
Label(s) Required: 5.1 Oxidizer

International Air Transport Association (IATA):

THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS UNDER IATA RULES. This material is considered as dangerous goods by the International Air Transport Association.

Proper Shipping Name: Sodium Chlorite
Hazard Class Number and Description: 5.1 (Oxidizer)
UN Identification Number: 1496
Packing Group: PG II
Hazard Label (S) Required: OXIDIZER
ERG Code: 5L

The following Packaging Information is applicable to this product:

PROPER SHIPPING NAME	PASSENGER AND CARGO AIRCRAFT				CARGO AIRCRAFT ONLY	
Sodium Chlorite	Limited Quantity					
	Packing Instruction	Max. Qty per Pkg	Packing Instruction	Max. Qty per Pkg	Packing Instruction	Max. Qty per Pkg
	Y544	2.5 kg	588	5 kg	562	25 kg

International Maritime Organization (IMO):
This material is considered as dangerous goods by the International Maritime Organization.

Proper Shipping Name: Sodium Chlorite
Hazard Class Number and Description: 5.1 (Oxidizer)
UN Identification Number: 1496
Packing Group: PG II
Labels(S) Required: OXIDIZER
Marine Pollutant: This product is not designated by the IMO to be a Marine Pollutant.

European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR):
This material is considered by the United Nations Economic Commission for Europe to be dangerous goods.

Substance Identification No.: 1496
Name of Substance: Sodium Chlorite
Hazard Identification No. (Description): 50
Label: 5.1 (OXIDIZER)
Class and Item Number: 5.1 14° (b)

15. REGULATORY INFORMATION

U.S. REGULATIONS:

OSHA Regulatory Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CERCLA Sections 102a/103 Hazardous Substances (40 CFR 302.4): If a release is reportable under CERCLA section103, notify the state emergency response commission and local emergency planning committee. In addition, notify the national Response Center at (800) 424-8802 or (202) 426-2675.

SARA EHS Chemical (40 CFR355.30): Not regulated.

EPCRA Sections 311/312 Hazard Categories (40 CFR 370.10): Acute health hazard, chronic health hazard, fire hazard.

EPCRA Section 313 (40 CFR 372.65): Not regulated.

OSHA Processes Safety (PSM) (29 CFR 1910.119): Not regulated.

FIFRA Regulations: Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Reg. No. 5382-42 (Technical Sodium Chlorite)

FIFRA Labeling Requirements: This chemical is a pesticide product registered by the United States Environmental Protection Agency (EPA) and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace of non-pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

-FIFRA Signal Word- DANGER
-Corrosive
-Causes irreversible eye damage and skin burns
-May be fatal if swallowed
-Irritating to nose and throat
-This product is toxic to fish and aquatic organisms
-Danger: Strong oxidizing agent
-Mix only into water
-Contamination may start a chemical reaction with generation of heat, liberation of hazardous gasses (chlorine dioxide- a poisonous, explosive gas), and a possible fire and explosion
-Do not contaminate with moisture, garbage, dirt, organic matter, household products, chemicals, soap products, paint products, solvents, acids, vinegar, beverages, oils, pine oil, dirty rags, or any other foreign matter
-Do not use moist or damp utensils.

National Inventory Status

US Inventory Status: Toxic Substance Control Act (TSCA): All components are listed or exempt.

TSCA 12(b): This product is not subject to export notification.

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

State Regulations

California Proposition 65: This product and its ingredients are not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact OxyChem Technical Services at 1 (800) 733-1165.

Component	California Proposition 65 Cancer Warning	California Proposition 65 CRT List- Male reproductive toxin	California Proposition 65 CRT List- Female reproductive toxin	Massachusetts Right to Know Hazardous Substance List	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List
Sodium Chlorite 7758-19-2	Not Listed	Not Listed	Not Listed	Listed	1689	Corrosive; Reactive-Second Degree

Component	New Jersey-Environmental Hazardous Substance List	Pennsylvania Right to Know Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List	Rhode Island Right to Know Hazardous Substance List
Sodium Chlorite 7758-19-2	Not Listed	Listed	Not Listed	Not Listed	Not Listed

CANADIAN REGULATIONS:

This Product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS

contains all the information required by the Controlled Products Regulations.

WHMIS Classifications of Substances

C- Oxidizing Materials

D1A- Poisonous and infections Material; materials causing immediate and serious toxic effects- Very toxic material

D1B- Poisonous and infections Material; materials causing immediate and serious toxic effects- Toxic material

D2B- Poisonous and infections Material; materials causing other toxic effects- Toxic material

E- Corrosive Material

PCP Registration: This product is registered as a pesticide in Canada under PCP Reg No. 25361

EUROPEAN COMMUNITY INFORMATION:

EC LABELING AND CLASSIFICATION: This product meets the definition of Oxidizing [O] and Toxic [T] as defined by the European Community Council Directive 67/548/EEC.

EC CLASSIFICATION: Oxidizing; Toxic [O; T]

EC RISK PHRASES: Contact with combustible material may cause fire. Toxic by inhalation, in contact with skin, and if swallowed. Irritating to eyes, respiratory system, and skin. [R: (2)–8–23/24/25–36/37/38]

EC SAFETY PHRASES: Keep out of reach of children. (*This safety phrase can be omitted from the label when the substance or preparation is sold for industrial use only.*) Keep away from combustible material. In case of contact with eyes, rinse immediately with water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection. If swallowed, seek medical advice immediately and show this container or label. [S: (2)–17–26–27–36/37/39–46]

EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOL:

EUROPEAN COMMUNITY INFORMATION FOR CONSTITUENTS: The following information is available for components of this product.

Sodium Chlorite:

EC EINECS/ELINCS NUMBER: 231-836-6.

EC CLASSIFICATION: Oxidizing; Toxic [O; T]

EC RISK PHRASES: Contact with combustible material may cause fire. Toxic by inhalation, in contact with skin, and if swallowed. Irritating to eyes, respiratory system, and skin. [R: 8–23/24/25–36/37/38]

EC SAFETY PHRASES: Keep out of reach of children. (*This safety phrase can be omitted from the label when the substance or preparation is sold for industrial use only.*) Keep away from combustible material. In case of contact with eyes, rinse immediately with water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection. [S: (2)–17–26–27–36/37/39]

16. OTHER INFORMATION

Revision Number:	1/2019
Section(s) Revised	Emergency contact number
Prepared By:	ClorDiSys Solutions, Inc

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. ClorDiSys Solutions, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, ClorDiSys Solutions, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.