

# SAFETY DATA SHEET

Issue Date 24-Mar-2015 Revision Date 03-Mar-2023 Version 7

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name BIO-TEC 25

Other means of identification

Product Code ABC061 UN/ID No. UN1908

Recommended use of the chemical and restrictions on use

Recommended Use Oxidizing Microbiocide Chlorine Dioxide Precursor.

Uses advised against No information available

**Manufacturer Address** 

Anderson Chemical Company, 325 South Davis Avenue, Litchfield, MN 55355 (320-693-2477)

Emergency telephone number

Chemtrec 1-800-424-9300

Synonyms: Sodium Chlorite Solution; Chlorous Acid, Sodium Salt; 25% Active Sodium Chlorite Solution

**Product Use:** Bio-Tec 25 is a registered antimicrobial pesticide. EPA Registration Number 5382-43-150. It

has numerous uses including uses in potable water, industrial cooling water, mollusk control, food-plant process water, wastewater, slime control in paper mills, and oilfield

water. Bio-Tec 25 can also be used for poultry processing water.

Restrictions on Use (United This is a pesticide product; do not use in a pesticide application that is not approved by the

EPA. EPA Reg. No. 5382-43-150

States):

## SECTION 2. HAZARDS IDENTIFICATION

**OSHA REGULATORY STATUS:** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## **EMERGENCY OVERVIEW:**

Color: Pale, yellow Physical State: Liquid

Appearance: Slightly cloudy
Odor: Slight chlorine odor

Signal Word: <u>DANGER</u>

MAJOR HEALTH HAZARDS: CORROSIVE TO EYES AND SKIN. CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. HARMFUL IF SWALLOWED. MAY CAUSE DAMAGE TO CARDIOVASCULAR SYSTEM; BLOOD; SPLEEN; DIGESTIVE SYSTEM; AND STOMACH THROUGH PROLONGED OR REPEATED EXPSOURE VIA ORAL ROUTE. MAY BE HARMFUL IN CONTACT WITH SKIN. THIS MATERIAL IS A POTENTIAL ENDOCRINE DISRUPTOR.

**PHYSICAL HAZARDS:** MAY BE CORROSIVE TO METALS. OXIDIZING AGENT. MAY INTENSIFY FIRE. Dried material can ignite upon contact with combustibles.

**AQUATIC TOXICITY:** Acute Aquatic Toxicity: Very toxic to aquatic life. Chronic Aquatic Toxicity: Harmful to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS:** Keep only in original container. Keep away from combustible materials. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe dust, vapor or spray mist. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves, protective clothing, eye, and face protection. Avoid release to the environment.

ADDITIONAL HAZARD INFORMATION: This material is corrosive and an oxidizer when dry. This material is a

more severe corrosive and oxidizer when dry. This material's pH and oxidative action contribute to its health and physical hazards. If not stored in original container; store in a corrosive resistant container with a resistant inner liner. Always package, store, transport and dispose of all waste and contaminated equipment in accordance with all applicable federal, state, and local health and environmental regulations. 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.

#### **HAZARD CLASSIFICATION:**

HAZARD CLASSII ICATION.	
GHS: PHYSICAL HAZARDS:	Oxidizing Liquid - GHS Category 3: May intensify fire;
	oxidizer
	May be corrosive to metals
GHS: CONTACT HAZARD - SKIN:	Category 1B - Causes severe skin burns and eye damage
GHS: CONTACT HAZARD - EYE:	Category 1 - Causes serious eye damage
GHS: ACUTE TOXICITY - ORAL:	Category 4 - Harmful if swallowed
GHS: TARGET ORGAN TOXICITY (REPEATED	Category 2 - May cause damage to blood, spleen, and
EXPOSURE):	stomach through prolonged or repeated exposure
HAZARDS NOT OTHERWISE CLASSIFIED (HNOC):	- ACUTE TOXICITY - DERMAL: Category 5 (May be
	harmful in contact with skin)
	- AQUATIC TOXICITY - ACUTE: Category 1 (Very toxic to
	aquatic life)
	- ACQUATIC TOXICITY - CHRONIC: Category 3 (Harmful
	to aquatic life with long lasting effects)
	- According to NFPA 400, this material is classified as a
	Class 2 Oxidizer. Class 2 Oxidizers will increase the
	burning rate of combustible materials with which they
	come in contact. In addition, they may cause
	spontaneous ignition when in contact with a combustible material

GHS SYMBOL: Oxidizer, Corrosive, Health hazards, Exclamation mark, Environmental hazard











GHS SIGNAL WORD: DANGER

## **GHS HAZARD STATEMENTS:**

GHS - Physical Hazard Statement(s)

- · May intensify fire; oxidizer
- May be corrosive to metals

## GHS - Health Hazard Statement(s) -

- · Harmful if swallowed
- · Causes severe skin burns and eye damage

· May cause damage to blood, spleen, and stomach through prolonged or repeated exposure

## Additional Hazards - GHS Hazards Not Otherwise Classified (HNOC):

- MAY BE HARMFUL IN CONTACT WITH SKIN
- ACUTE AQUATIC HAZARD CATEGORY 1: Very toxic to aquatic life
- · CHRONIC AQUATIC HAZARD CATEGORY 3: Harmful to aquatic life with long lasting effects

## GHS - Precautionary Statement(s) - Prevention

- · Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- · Keep away from combustible materials
- · Keep only in original container
- · Do not breathe mist, vapors, or spray
- · Wash skin and contaminated clothing thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves, protective clothing, eye, and face protection
- Avoid release to the environment

#### GHS - Precautionary Statement(s) - Response

- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower
- IF EXPOSED (skin/eye): Immediately call a POISON CENTER OR PHYSICIAN
- Specific treatment for skin contact (see First Aid information on product label and/or Section 4 of the SDS)
- Wash contaminated clothing before reuse
- IF EXPOSED (skin): Immediately call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER
- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
- IF INHALED: Immediately call a POISON CENTER OR PHYSICIAN
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- IF IN EYES: Immediately call a POISON CENTER or physician
- Get medical advice/attention if you feel unwell
- Absorb spillage to prevent material damage
- Collect spillage
- In case of fire: Use large amounts of water to extinguish

#### GHS - Precautionary Statement(s) - Storage

- Store in secure manner
- · Store in corrosive resistant container with a resistant inner liner

#### GHS - Precautionary Statement(s) - Disposal

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

## **Physical Hazards Not Otherwise Classified**

• NFPA Class 2 Oxidizer (Class 2 Oxidizers will increase the burning rate of combustible materials with which they come in contact. In addition, they may cause spontaneous ignition when in contact with a combustible material)

## Hazard Not Otherwise Classified (HNOC)-Health

- · May be harmful in contact with skin
- · Potential endocrine disruptor

See Section 11: TOXICOLOGICAL INFORMATION

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Percent [%]	
Water	7732-18-5	68 - 76	
Sodium Chlorite	7758-19-2	24.25 - 25.75	
Sodium Chloride	7647-14-5	1 - 3	

## **SECTION 4. FIRST AID MEASURES**

**INHALATION:** IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF INHALED: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER if you feel unwell. If breathing is difficult, oxygen should be administered by qualified personnel.

**SKIN CONTACT:** IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. See specific treatment for skin contact below in this Section Under "Notes to Physicians". GET MEDICAL ATTENTION IMMEDIATELY.

**EYE CONTACT:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF EXPOSED (eyes): Immediately call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER. GET MEDICAL ATTENTION IMMEDIATELY.

<u>INGESTION:</u> IF SWALLOWED: Immediately call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. See additional information in "Notes to Physician" below in this Section. GET MEDICAL ATTENTION IMMEDIATELY.

## Most Important Symptoms/Effects (Acute and Delayed):

## **Acute Symptoms/Effects:**

**Inhalation (Breathing):** Breathing (Inhalation): Inhalation of 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 a severe acute exposure.

**Skin:** Skin Corrosion. Skin exposure to gas or liquid may cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns.

**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 internal eye structures. **Ingestion (Swallowing):** Ingestion: Exposure by ingestion may cause irritation, nausea, and vomiting. Oxidation may cause significant metabolic issues such as: methemogobinemia, hemolysis, and intravascular coagulation and renal failure.

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## **Delayed Symptoms/Effects:**

- Repeated and prolonged skin contact may cause a dermatitis

<u>Protection of First-Aiders:</u> Protect yourself by avoiding contact with this material. Avoid contact with skin and eyes. Do not ingest. 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 bloodborne pathogen transmission.

Notes to Physician: Treat as a corrosive due to the pH of this material. For prolonged exposures and significant exposures, consider 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. 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. In vitro studies have shown that activated charcoal does not adsorb chlorate/chlorite ions. The benefit of decontamination after ingestion is not certain and not recommended.

**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.

**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.

# **SECTION 5. FIRE-FIGHTING MEASURES**

**Fire Hazard:** According to NFPA 400, this material is classified as a Class 2 Oxidizer. Class 2 Oxidizers will increase the burning rate of combustible materials with which they come in contact. In addition, they may cause spontaneous ignition when in contact with a combustible material. Avoid evaporation to dryness. Dried material can ignite upon contact with combustibles.

**Explosive properties:** This product may represent an explosion hazard if it contacts acids, chlorine, or organic materials (Refer to Sections 7 and 10).

**Extinguishing Media:** Use extinguishing agents appropriate for surrounding fire. Water is the only effective extinguisher of sodium chlorite.

**Unsuitable Extinguishing Media:** Water is the only effective extinguisher of sodium chlorite.

**Unusual Hazards:** Do not allow sodium chlorite solutions to evaporate to dryness; this product becomes a fire or explosion hazard if allowed to dry and can ignite in contact with combustible materials.

**Fire Fighting:** Wear NIOSH approved positive-pressure self-contained breathing apparatus. Consider evacuation of personnel located downwind. Keep unnecessary people away, isolate hazard area and deny entry. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Hazardous Combustion Products: Chlorine; Oxides of sodium

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable

Upper Flammability Level (air): Not flammable

Flash point: Not applicable

**Auto-ignition Temperature:** Not applicable

## **GHS: PHYSICAL HAZARDS:**

- Oxidizing Liquid GHS Category 3: May intensify fire; oxidizer
- May be corrosive to metals

#### **Physical Hazards Not Otherwise Classified**

- NFPA Class 2 Oxidizer (Class 2 Oxidizers will increase the burning rate of combustible materials with which they come in contact. In addition, they may cause spontaneous ignition when in contact with a combustible material)

# **SECTION 6. ACCIDENTAL RELEASE MEASURES**

<u>Personal Precautions:</u> Isolate hazard area and deny entry. Keep unnecessary and unprotected personnel from entering the area. Avoid contact with skin and eyes. If material is allowed to dry, DO NOT make airborne. DO NOT breathe dust. Wear appropriate personal protective equipment recommended in Section 8 of the SDS.

Personal Protective Equipment: Cleanup personnel must wear proper protective equipment. For Unknown Concentrations or exposures above IDLH (Immediately Dangerous to Life or Health) - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece. See section 8 for information on personal protective equipment.

Emergency Procedures: Evacuate unnecessary personnel and eliminate all sources of ignition. For other than minor leaks, immediately implement predetermined emergency plan. Restrict access to the area until cleanup is complete. Stop the release if it can be done safely from a distance. Prevent material and runoff from entering sewers and waterways if it can be done safely well ahead of the release. Sodium chlorite may represent an explosion hazard if it contacts acids or chlorine. If such contact is possible, evacuation procedures must be placed into effect. Cleanup personnel must wear proper protective equipment. Notify all downstream water users of possible contamination.

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Environmental Precautions: This material is harmful to aquatic life. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies. See Section 12 for additional ecological information.

Methods and Materials for Containment, Confinement, and/or Abatement: Contain spill. Spilled materials may be absorbed using non-combustible and non-organic commercial absorbents. Dampen and scoop spilled material into clean, dedicated equipment. Every attempt should be made to avoid mixing spilled material with other chemicals or debris when cleaning up. Keep collected material damp and put into drums. Dried material can ignite upon contact with combustibles. Dispose of promptly. Dispose of in accordance with all applicable regulations.

**Recovery:** Liquid sodium chlorite solutions can be absorb in vermiculite, dry sand or earth and place in corrosive-resistant containers.

**Neutralization:** Due to the reactivity of sodium chlorite, neutralization for disposal purposes should be avoided whenever possible. Sodium chlorite neutralization procedures are available by contacting Anderson Chemical Company Technical Service Department. Sodium chlorite neutralization procedures must be carried out ONLY by properly trained personnel wearing appropriate personal protective equipment and ONLY after thoroughly reviewing the neutralization procedures with manufacturer.

**Final Disposal:** Runoff may pollute waterways. If sodium chlorite is spilled or becomes a waste, it must be disposed of in accordance with local, state, and Federal regulations by a NPDES permitted out-fall or in a permitted hazardous waste treatment, storage, and disposal facility. For waste disposal, see section 13.

<u>Additional Disaster Prevention Measures:</u> Keep away from water supplies and sewers. Do not use combustible absorbents such as rags, sawdust, and other natural organic sorbents.

# **SECTION 7. HANDLING AND STORAGE**

## Handling:

**Precautions for Safe Handling:** Do not contaminate sodium chlorite with incompatible materials such as dirt, organic matter, oxidizers, reducing agents, chemicals, soap products, solvents, acids, paint products, or combustible materials. Do not store or transport sodium chlorite with incompatible materials. Contamination may start a chemical reaction with generation of heat, liberation of hazardous gases (chlorine dioxide a poisonous, explosive gas), and possible fire and explosion. Triple rinse empty containers thoroughly with water and dispose of in accordance with label instructions.

**Technical measures/precautions:** All instrumentation should be designed to prevent possible solution freezing in the instrument. Greaseless lubricants should be used in mechanical equipment where there is a potential for leaks or spills. Pumps should not be operated against closed valves as this may result in heating solution above it decomposition temperature.

**Other precautions:** This material is a more severe corrosive and oxidizer when dry. This material's pH and oxidative action contribute to its health and physical hazards.

**Prevention of contact:** Do not breathe dust or spray mist. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear

protective gloves, protective clothing, eye, and face protection. Avoid contact with incompatible materials. Avoid release to the environment.

#### Storage:

Safe Storage Conditions: Store and handle in accordance with all current regulations and standards. (NFPA Oxidizer Class 2). Store in tightly closed, labeled containers away from combustible materials. Store in a cool, dry area. Store in a well-ventilated area. Store below 212°F (100°C). Avoid exposure to sunlight or ultraviolet light. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet). Sodium chlorite solutions exceeding 30% concentration have a greater potential to crystallize at ambient temperatures. Normally, these products should be diluted prior to storage. Where bulk storage of concentrated solutions is required, the tank must be placed in a temperature-controlled location to ensure that the product is maintained at a temperature above its crystallization point. Direct heat should not be applied to the storage tank.

Technical measures: All equipment purchased for handling and storing sodium chlorite solutions should be verified by the manufacturer or vendor to be suitable for use with sodium chlorite. Use appropriate containment to avoid environmental contamination. The storage area should not be exposed to direct sunlight or ultraviolet light. It should be fire resistant and have an effective sprinkler system with good ventilation. Do not allow solution to evaporate to dryness; this product becomes a fire or explosion hazard if allowed to dry and can ignite in contact with combustible materials. Storage conditions should comply with the requirements established by the National Fire Protection Association's NFPA 1 – Uniform Fire Code and/or NFPA 400 – Hazardous Materials Code and/or the International Code Council's (ICC) International Fire Code. Since both NFPA and ICC codes are used throughout the U.S., consult with local fire departments to determine which codes apply.

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

Packaging Material: Any containers used to store sodium chlorite solutions should be constructed of one of the following materials:

- 1. Fiberglass reinforced polyester with Hetron 922 resin or equivalent, color natural, with UV protection, and no internal insulation
- 2. High density polyethylene (HDPE)
- 3. Titanium.

#### Additional Information:

#### **GHS: PHYSICAL HAZARDS:**

- Oxidizing Liquid GHS Category 3: May intensify fire; oxidizer
- May be corrosive to metals

## **Physical Hazards Not Otherwise Classified**

- NFPA Class 2 Oxidizer (Class 2 Oxidizers will increase the burning rate of combustible materials with which they come in contact. In addition, they may cause spontaneous ignition when in contact with a combustible material)

# SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **REGULATORY EXPOSURE LIMIT(S):**

This product does not contain any components that have regulatory occupational exposure limits (OEL's).

## **NON-REGULATORY EXPOSURE LIMIT(S):**

This product does not contain any components that have advisory (non-regulatory) occupational exposure limits (OEL's); however, the manufacturer has established internal Recommended Exposure Level(s) [REL(s)] as noted below.

Recommended Exposure Limits (REL's) are non-regulatory occupational exposure limits that the manufacturer has established based on health effects data.

Component	REL	REL	REL
	8 hr TWA	STEL	Ceiling
Sodium Chlorite 7758-19-2 (24.25 - 25.75 %)	1 mg/m³	Not applicable	Not applicable

**ENGINEERING CONTROLS:** Use only in well-ventilated areas. Provide local exhaust ventilation where vapors, mist or aerosols may be generated. Where sodium chlorite dust may be present, ventilation of the work area should be accomplished as necessary to maintain concentrations in air below 1 mg/m³.

## PERSONAL PROTECTIVE EQUIPMENT:

**Eye Protection:** Wear chemical safety goggles. Where splashing or spraying is possible, use a face-shield in addition to chemical protective goggles. Provide an emergency eyewash fountain and quick drench shower in the immediate work area.

**Skin and Body Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with water, and launder clothing before reuse or dispose of properly. Clothing should be rinsed with water before disposal.

**Hand Protection:** Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Neoprene

**Respiratory Protection:** A NIOSH approved full-face respirator equipped with N95 (dust, fume, mist) cartridges may be permissible when symptoms have been observed that are indicative of overexposure. If chlorine or chlorine dioxide is present, an acid gas cartridge is also required. An approved self-contained breathing apparatus operated in the pressure demand mode or an airline respirator with escape pack is required when an air purifying respirator is not adequate or for spills / emergencies of unknown concentrations. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

**HYGIENE MEASURES:** Obtain proper training prior to use. An emergency eye wash fountain and quick drench shower should be provided in the immediate work area. Good housekeeping practices are important where sodium chlorite is used. All spills should be contained and immediately recovered or flushed with water into a chemical sewer or a segregated holding tank or pond provided for the specific purpose of neutralization. Sodium chlorite must never be flushed to sanitary sewer or other outlet connecting to waterways to uncontrolled runoff streams. Contact local and federal authorities for applicable regulations.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid Color: Pale, yellow

Odor: Slight chlorine odor

Molecular Weight: 90.45
Molecular Formula: 90.45

Chemical Family: Sodium Chlorite Solution

pH: >12 @ 25°C

Melting Point/Range:
Not applicable to liquids
Freezing Point/Range:
No data available

**Boiling point / boiling range** 215.6 - 233.6 °F (102 - 112 °C)

Flash point:

Explosion limits:

Vapor Pressure:

Vapor Density (air=1):

Relative Density/Specific Gravity (water=1):

Not applicable

Not applicable

No data available

1.1 to 1.3 @ 25°C

**Density:** 11.1 lbs/gal @ 35°C; 10.1 lbs/gal @ 25°C

Water Solubility: Soluble

Partition Coefficient (n-octanol/water):

Auto-ignition Temperature:

Odor Threshold [ppm]:

Evaporation Rate (ether=1):

Crystallization Temperature:

Volatility:

Flammability (solid, gas):

No data available
No data available
-8°C (17.6°F)
59-85% by volume
Not applicable

Lower Flammability Level (air):
Upper Flammability Level (air):
Viscosity:

Not applicable
Not applicable
Not flammable
Not flammable
No data available

# **SECTION 10. STABILITY AND REACTIVITY**

**Chemical Stability:** Stable at normal temperatures and pressures.

**Reactivity:** Not reactive under normal temperatures and pressures.

<u>Possibility of Hazardous Reactions:</u> Avoid heat, flames, sparks and other sources of ignition. Avoid evaporation to dryness. Dried material can ignite upon contact with combustibles. Avoid contamination with foreign materials. Avoid exposure to sunlight or ultraviolet light.

Conditions to Avoid (e.g., static discharge, shock, or vibration): Avoid mechanical shock or impact, if contaminated.

Incompatible Substances: Acids, reducing agents, combustible material, oxidizing agents, hypochlorite, organic

solvents and compounds, garbage, dirt, organic materials, household products, chemicals, soap products, paint products, vinegar, beverages, oils, pine oil, dirty rags, sulfur-containing rubber, or any other foreign matter.

<u>Hazardous Decomposition Products:</u> Chlorine dioxide is formed on contact with acids, Thermal decomposition products include chlorine and oxides of sodium.

<u>Hazardous Polymerization:</u> Will not occur.

# **SECTION 11. TOXICOLOGICAL INFORMATION**

#### **POTENTIAL HEALTH EFFECTS:**

#### **ACUTE TOXICITY:**

**Eye contact:** Causes serious eye damage. Eye exposures may cause burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. May cause permanent eye damage including blindness. Significant and prolonged contact may cause damage to the internal eye structures.

Skin contact: Causes severe skin burns and eye damage. May cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns. Acute dermal toxicity was dependent on the product concentration and its physical state. The most concentrated existing form (80%) induced severe cutaneous reactions and necrosis, which may have enhanced the irritant properties and systemic availability of the product leading to an LD50 of 134 mg/kg body weight. Conversely, the 31% solution induced at most mild skin irritation thus limiting the systemic passage of the product to the blood and leading to an LD50 higher than 2000 mg/kg body weight. Dermal absorption of a 30% liquid solution ranges approximately 5 - 10%.

<u>Inhalation:</u> Inhalation may cause coughing, irritation (possibly severe), redness of upper and lower airways, shortness of breath, chemical burns and possibly pulmonary edema. Pulmonary edema may develop several hours after a severe acute exposure.

<u>Ingestion:</u> Harmful if swallowed. Ingestion may cause irritation, nausea, and vomiting. Causes significant metabolic issues through oxidation. May induce methemoglobinemia, hemolysis, and intravascular coagulation and renal failure.

## **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 erthrocyte 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. Repeated and prolonged skin contact may result in dermatitis.

## SIGNS AND SYMPTOMS OF EXPOSURE:

Signs and symptoms of exposure vary, and are dependent on the route of exposure, degree of exposure, and duration of exposure.

<u>Inhalation (Breathing):</u> Breathing (Inhalation): Inhalation of 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 a severe acute exposure.

Skin: Skin Corrosion. Skin exposure to gas or liquid may cause redness, irritation, burning sensation, swelling,

blister formation, first, second, or third degree burns.

**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 internal eye structures. **Ingestion (Swallowing):** Ingestion: Exposure by ingestion may cause irritation, nausea, and vomiting. Oxidation may cause significant metabolic issues such as: methemogobinemia, hemolysis, and intravascular coagulation and renal failure.

**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.

#### **GHS HEALTH HAZARDS:**

GHS: CONTACT HAZARD - SKIN: Category 1B - Causes severe skin burns and eye damage

GHS: CONTACT HAZARD - EYE: Category 1 - Causes serious eye damage

GHS: ACUTE TOXICITY - ORAL: Category 4 - Harmful if swallowed

GHS: ACUTE TOXICITY - DERMAL: Category 5 - May be harmful in contact with skin

GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE): Category 2 - May cause damage to blood,

spleen, and stomach through prolonged or repeated exposure

#### **TOXICITY DATA:**

#### PRODUCT TOXICITY DATA: .

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LD50 Oral:	LD50 Dermal:	LC50 Inhalation:	1
389 - 1800 mg/kg (Rat)	> 2 gm/kg skin-rabbit	0.58 mg/L (4 hr-Rat)	

**COMPONENT TOXICITY DATA:** The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Chlorite	165 mg/kg (Rat)	107.2 mg/kg (Rabbit)	230 mg/m <sup>3</sup> (4-h Rat)

**Eye Irritation/Corrosion:** The product is classified as causing serious eye injury (Category 1, H318), according to criteria of the GHS.

**Skin Irritation/Corrosion:** This product is classified as causing severe skin burns (Category 1, H314), according to GHS classification criteria.

**Skin Absorbent / Dermal Route:** May be harmful in contact with skin. Dermal absorption of a 30% liquid solution ranges approximately 5 - 10%.

**RESPIRATORY OR SKIN SENSITIZATION:** Not classified as a skin or respiratory sensitizer per GHS criteria.

**CARCINOGENICITY:** There is inadequate evidence for the carcinogenicity of sodium chlorite in experimental animals. No data were available from studies in humans on the carcinogenicity of sodium chlorite. This product is not classified as a carcinogen by NTP, IARC or OSHA. Not classified as a carcinogen per GHS criteria.

**SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):** The substance is not classified as a specific target organ toxicant after single exposure per GHS criteria.

**SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure):** This product is classified as GHS Category 2 and may cause damage to blood, spleen, and stomach through prolonged or repeated exposure.

**INHALATION HAZARD:** Inhalation is not likely from vapors due to low vapor pressure; however, if mists are inhaled may cause respiratory tract irritation. Its action in the respiratory tract is due to its strong oxidizing capability. Symptoms of pulmonary congestion and edema may develop after a latency period of several hours following severe acute exposure to mists.

**GERM CELL/IN-VITRO MUTAGENICITY:** 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.

ASPIRATION HAZARD: Not classified as an aspiration hazard per GHS criteria.

**TOXICOKINETICS:** The time taken to absorb 50% of the dose for sodium chlorite was  $3.5 \pm 1.06$  hours. The absorption rate constant was  $0.198 \pm 0.06$ /hour. The time taken to eliminate 50% of the dose from the plasma when detected as 36Cl was  $35.2 \pm 3.0$  hours. After 72 h, radioactivity from chlorite was found at the highest level in the plasma, followed by stomach, testes, skin, lung, duodenum, kidney, carcass, spleen, ileum, bone marrow and liver. In blood, chlorite levels were distributed evenly between plasma and packed cells. For sodium chlorite, 87 and 13% of initial dose (36 -Cl) was found in urine and feces, respectively. 36-Cl was not detected in expired air throughout the 72 hour time period. Chloride, chlorite and chlorate were found in rat urine 72 hours after the administration. The major metabolite was chloride, representing 31.6% of the initial dose of chlorite.

**METABOLISM:** May metabolize to form elevated chloroform levels in the liver and brain but not in blood.

**BIOLOGICAL DISTRIBUTION:** See Toxicokinetics above.

PATHOGENICITY AND ACUTE INFECTIOUSNESS (ORAL, DERMAL, AND INHALATION): Not applicable.

**ENDOCRINE DISRUPTOR:** Sodium chlorite is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system.

**NEUROTOXICITY:** Not Available.

**IMMUNOTOXICITY:** Not available.

#### Hazard Not Otherwise Classified (HNOC)-Health

- · May be harmful in contact with skin
- · Potential endocrine disruptor

## SECTION 12. ECOLOGICAL INFORMATION

## **ECOTOXICITY (EC, IC, and LC):**

**Ecotoxicity - Available LOLI Data for Components:** 

Component:	Freshwater Fish:	Invertebrate	Algae Toxicity:	Other Toxicity:
		Toxicity:		
Sodium Chlorite	*LC50 Brachydanio	*EC50 Daphnia	No data available	No data available
	rerio: 100 - 500 mg/L	magna: 0.026 mg/L		
	96h static *LC50	48h *EC50 Daphnia		
	Lepomis	magna: 0.012 - 0.018		
	macrochirus: 100	mg/L 48h *EC50		
	mg/L 96h static	Daphnia magna: 0.25		
	*LC50 Oncorhynchus	- 0.33 mg/L 48h		
	mykiss: 100 mg/L			
	96h static			

## **Aquatic Toxicity:**

LC50 Rainbow trout = 290 mg/l as 80% NaClO2 (96 hour)

LC50 Bluegill = 265-310 mg/l as 80% NaClO2 (96 hour)

LC50 Sheepshead minnow = 62-90 ppm (96 hour).

#### **Invertebrate Toxicity:**

LC50 Daphnia Magna = 0.29 mg/L as 80% NaClO2 (48 hour)

#### Other Toxicity:

LD50 Mallard duck = 0.49-1.00g/kg as 80% NaClO2 (gavage)

LD50 Bob White quail = 0.39 - 0.66 g/kg as 80% NaClO2 (gavage)

Sodium chlorite in the diet of birds was not acutely toxic. Eight-day dietary LC50's in the Mallard duck and Bob White quail were > 5,000 ppm

## **FATE AND TRANSPORT:**

**PERSISTENCE:** This material will eventually degrade to sodium chloride.

**BIODEGRADATION:** This material is inorganic and not subject to biodegradation; however, chlorite ions are reduced by some bacteria under anaerobic conditions. Sodium chlorite is a strong oxidizing agent and under proper reducing conditions is readily reduced to chloride, and to a lesser extent, chlorate. In strong acidic conditions, chlorite can change into chlorine dioxide.

**BIOCONCENTRATION:** This material will not bioaccumulate.

**BIOACCUMULATIVE POTENTIAL:** Bioaccumulation in aquatic species test does not need to be conducted as the substance has a low potential for bioaccumulation (a log Kow < 3) and is an inorganic substance.

**MOBILITY IN SOIL:** Not applicable.

# SECTION 13. DISPOSAL CONSIDERATIONS

Revision Date 03-Mar-2023

#### Waste from material:

Dispose in accordance with all applicable regulations. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction and fire. Contact Technical Service to obtain neutralization instructions. Sodium chlorite is toxic to fish and aquatic organisms. Keep out of water supplies and sewers. If sodium chlorite is spilled or becomes a waste, it must be disposed of in accordance with local, state, and Federal regulations by a NPDES permitted out-fall or in a permitted hazardous waste treatment, storage, and disposal facility.

## **Container Management:**

Containers are non-refillable. Do not reuse or refill containers. Offer for recycling if available. Offer for reconditioning if appropriate. Triple rinse or pressure rinse container promptly after emptying. Triple rinse containers 5-gallons or smaller as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Triple rinse containers larger than 5 gallons as follows: Empty remaining contents into application equipment or a 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. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse about 40 PSI for at least 30 seconds. Drain for 10 seconds, after the flow begins to drip. Container rinsate must be disposed of in compliance with applicable regulations.

#### **Contaminated Material:**

Dispose according to appropriate regulations.

# **SECTION 14. TRANSPORT INFORMATION**

#### LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

UN NUMBER: UN1908

PROPER SHIPPING NAME: Chlorite solution

HAZARD CLASS/ DIVISION: 8
PACKING GROUP: ||
LABELING REQUIREMENTS: 8
MARINE POLLUTANT: Yes

Special provisions for

A3; A6; A7; B2; IB2; N34; T7; TP2; TP24.

transport:

Packaging Exceptions 154.
Non-bulk Packaging: 202.
Bulk Packaging: 242.

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:** 

UN NUMBER: UN1908

SHIPPING NAME: Chlorite solution

CLASS OR DIVISION: 8
PACKING/RISK GROUP: ||
LABELING REQUIREMENTS: 8

CAN. MARINE POLLUTANT: Marine Pollutant

## MARITIME TRANSPORT (IMO / IMDG)

UN NUMBER: UN1908

PROPER SHIPPING NAME: Chlorite Solution

HAZARD CLASS / DIVISION: 8
Packing Group: ||
LABELING REQUIREMENTS: 8

MARINE POLLUTANT: Marine Pollutant

## AIR TRANSPORT (ICAO / IATA)

**Special Instructions CAO:** IATA Certificate for shipping personnel is required

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code.

# **SECTION 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):

Not regulated.

#### SARA EHS Chemical (40 CFR 355.30)

Not regulated.

## EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

Acute Health Hazard, Chronic Health Hazard, Fire Hazard

## SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):

Health Hazard - Acute Toxin (any route of exposure)

Health Hazard - Skin Corrosion or Irritation

Health Hazard - Serious eye damage or eye irritation

Health Hazard - Specific Target Organ Toxicity (STOT) Repeat Exposure (RE)

Health Hazard - HNOC

Physical Hazard - Oxidizer (liquid, solid or gas)

Physical Hazard - Corrosive to Metal

## **EPCRA SECTION 313 (40 CFR 372.65):**

Not regulated.

<u>DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):</u>
Not likely to be regulated based on composition level of component below in formulation

Component	DHS - Security Issues	_	DHS-Sabotag e Min. Conc.	DHS-Theft Screening Threshold Qnty.	DHS-Theft Min. Conc.	DHS-Release Screening Threshold Qnty.	DHS-Release Min. Conc.	CWC Toxic Chemicals:
Sodium Chlorate 7775-09-9 ( < 0.5 )	Theft - Explosives/Im provised Explosive Device Precursors	Not Listed	Not Listed	400 lb STQ	a commercial grade	Not Listed	Not Listed	Not Listed

#### OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):

Not regulated.

<u>FIFRA REGULATIONS:</u> Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). EPA Reg. No. 5382-43-150 (Bio-Tec 25).

**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 labels of non-pesticide chemicals. The hazard information required on the 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
- Harmful if swallowed
- Irritating to nose and throat
- Do not get in eyes, on skin, or on clothing
- This product is toxic to fish and aquatic organisms
- Dry sodium chlorite is a strong oxidizing agent. This product becomes a fire or explosive hazard if allowed to dry.
- Mix only into water
- Contamination may start a chemical reaction with generation of heat, liberation of hazardous gases (chlorine dioxide a poisonous, explosive gas), and possible fire and explosion
- Do not contaminate with 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

**FDA:** This material has Generally Recognized As Safe (GRAS) status under specific U.S. Food and Drug Administration (FDA) regulations, for specified applications. Additional information is available from the Code of Federal Regulations, which is accessible on the FDA's website. Only food grade product meets the FDA's Food Safety Modernization Act (FSMA) requirements, and is guaranteed to be produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the FDA. Food grade product is produced in a facility that is accredited as a Safe Quality Food (SQF) Level 2 Facility, certified under the Global Food Safety Initiative (GFSI), and meets the Food Chemical Codex (FCC) requirements.

#### **EPA'S CLEAN WATER AND CLEAN AIR ACTS:**

Component(s) not listed on impacted regulatory lists.

## NATIONAL INVENTORY STATUS

## U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):

Component	TSCA Inventory	TSCA ACTIVE	TSCA 12(b)	TSCA - Section	TSCA - Section	TSCA - Section	TSCA - Section
		LIST		4	5	6	8
Sodium Chlorite 7758-19-2	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Sodium Chloride 7647-14-5	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Sodium Chlorate 7775-09-9	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed

## CANADIAN CHEMICAL INVENTORY: All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Sodium Chlorite	Listed	Not Listed
7758-19-2 ( 24.25 - 25.75 )		
Sodium Chloride	Listed	Not Listed
7647-14-5 (1 - 3)		
Sodium Chlorate	Listed	Not Listed
7775-09-9 ( < 0.5 )		

## STATE REGULATIONS

## California Proposition 65:

This product and its ingredients are not listed on the California Governor's current list of Carcinogens, Reproductive Toxicants, and/or Candidate Carcinogens (Proposition 65), but it may contain trace amounts of impurities that are listed. For additional information, contact Anderson Chemical Company.

	Proposition 65 Cancer WARNING:	Proposition 65 CRT List - Male	Proposition 65 CRT	Massachusetts Right to Know Hazardous Substance List	
Sodium Chlorite	Not Listed	Not Listed	Not Listed	Listed	Not Listed
Sodium Chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chlorate	Not Listed	Not Listed	Not Listed	Listed	Listed

·	Right to Know Hazardous	Special Health	Environmental Hazardous	Right to Know Hazardous Substance List	Right to Know Special Hazardous	Right to Know Special	Pennsylvania Right to Know Environmental Hazard List
Sodium Chlorite		corrosive; reactive - second degree	Not Listed	Listed	Not Listed	Not Listed	Not Listed
Sodium Chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chlorate	1688	reactive - second degree	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

19 of 21

SDS contains all the information required by the Controlled Products Regulations.

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	CANADIAN CHEMICAL INVENTORY:	NDSL:
Sodium Chlorite 7758-19-2 ( 24.25 - 25.75 )	Not listed	Not Listed	Not Listed	Listed	Not Listed
Sodium Chloride 7647-14-5 ( 1 - 3 )	Not listed	Not Listed	Not Listed	Listed	Not Listed
Sodium Chlorate 7775-09-9 ( < 0.5 )	Not listed	Not Listed	Not Listed	Listed	Not Listed

# **SECTION 16. OTHER INFORMATION**

Prepared by: Anderson Chemical Company

**Rev. Date:** 03-Mar-2023

## Reason for Revision:

- · Scheduled review
- Change of company physical address: SEE SECTION 1
- Product Name and/or Trade Name(s) has been revised: SEE SECTION 1
- Updated Customer Service Contact Information: SEE SECTION 1
- Included additional information for other usage that may be restricted and/or prohibited: SEE SECTION 1
- Emergency Overview was revised: SEE SECTION 2
- GHS Symbol(s) added or changed: SEE SECTION 2
- Changed the GHS classification: SEE SECTION 2
- Modified GHS Hazard and Precautionary Statements: SEE SECTION 2
- Added or revised Hazards Not Otherwise Classified: SEE SECTION 2
- Added Health Hazards Not Otherwise Classified: Section 2 and 11
- The formulation has been revised: SEE SECTION 3
- Updated First Aid Measures: SEE SECTION 4
- Change to "Note to Physician" (added/ changed/ or deleted): SEE SECTION 4
- Modified Fire Fighting Measure Recommendations: SEE SECTION 5
- Added Physical Hazards Not Otherwise Classified to format: SEE SECTIONS 5&7
- Revised Accidental Release Measures: SEE SECTION 6
- Revised Handling and Storage Recommendations: SEE SECTION 7
- PPE recommendations have been modified: SEE SECTION 8
- Added Hygiene Measures SEE SECTION 8
- Updated Physical and Chemical Properties. SEE SECTION 9
- Toxicological Information has been revised: SEE SECTION 11
- Ecological Information has been modified: SEE SECTION 12

- Updated Disposal Considerations. SEE SECTION 13
- Updated Transportation Information: SEE SECTION 14
- Regulatory Information Changes: SEE SECTION 15
- Revised SARA Hazard Categories 311/312 HAZARD CATEGORIES (40 CFR 370.21): SEE SECTION 15
- Added LOLI tables such as EPA'S Clean Water / Air Act, TSCA status, DHS, PSM, EPCRA, CERCLA, Federal Canadian: SEE SECTION 15
- Added Department of Homeland Security Anti-Terrorism Information: SEE SECTION 15
- Modified SARA Hazard Categories Aligned with GHS (2018): SEE SECTION 15
- WHMIS Classifications were removed from format: SEE SECTION 15
- Updated TSCA Status Table: SEE SECTION 15

#### **IMPORTANT:**

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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

**End of Safety Data Sheet**