



# Saf-T-Chlor™

## MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT IDENTIFICATION

CHEMICAL NAME: Sodium Chlorite

COMMERCIAL NAME: *Saf-T-Chlor* thermally stable solid sodium chlorite

CHEMICAL FORMULA: NaClO<sub>2</sub>

SYNONYMS: Chlorous Acid, Sodium Salt

DOT IDENTIFICATION NO.: UN 1496

COMPANY NAME & ADDRESS: CDG Environmental, LLC  
205 Webster Street  
Bethlehem, PA 18015

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### SECTION 2: COMPONENT DATA

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% Range</u>	<u>Exposure Standards</u>
Sodium chlorite	7758-19-2	73.9%	None
Inert Materials		<u>26.1%</u>	None

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### SECTION 3: PHYSICAL DATA

BOILING POINT: No Data

MELTING POINT: 180-200°C (356-392°F)

DECOMPOSITION TEMPERATURE: 175°C (347°F);  
*Note: Decomposition reaction does not propagate from localized heating.*

SOLUBILITY IN WATER: 39% at 25°C (77°F)

VAPOR PRESSURE at 25°C: No Data

% VOLATILE BY VOLUME: No Data

pH at 25°C: >12 (25% solution)



BULK DENSITY: 55 lbs./cu.ft.  
SPECIFIC GRAVITY: No Data  
APPEARANCE/ODOR: White granular solid, slight chlorinous odor

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SECTION 4: REACTIVITY INFORMATION

SUMMARY OF REACTIVITY: Oxidizer  
CONDITIONS TO AVOID: Mechanical shock or impact, if contaminated with combustible material  
INCOMPATIBLE MATERIALS: Acids, acid products (aluminum sulfate, ferric chloride, etc.) reducing agents, combustible materials (wood, paper, fuel, oil, saw dust, garbage), oxidizers (such as hypochlorites), sulfur, dirt, soap, solvents, paints  
OTHER CONDITIONS TO AVOID: Contamination with foreign materials  
REACTION PRODUCTS: Chlorine dioxide gas will be generated on contact with acids or chlorine.  
DECOMPOSITION REACTION: Decomposition reaction *does not propagate* from localized heating.  
HAZARDOUS POLYMERIZATION: Will not occur.

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SECTION 5: FIRE AND EXPLOSION DATA

FLASH POINT: Not Applicable  
FLAMMABLE LIMITS (%): Not Applicable  
EXTINGUISHING MEDIA: Not Applicable - Choose extinguishing media suitable for surrounding materials.  
SPECIAL PRECAUTIONS: Do not drop, skid or roll drum; always keep upright.  
CHARACTERISTICS: Formulated to absorb and dissipate heat. However, material is a strong oxidizer. Mixtures with combustible materials (including wood, fuels, grease, carbon, clothing, etc.) ignite easily and burn fiercely, or may explode. Avoid contact with flame or burning material, such as a lighted cigarette.  
SPECIAL FIREFIGHTING PROCEDURES: Approach fire from upwind to avoid hazardous

vapors and toxic decomposition products. Use flooding quantities of water as fog or spray. Use water spray to keep fire-exposed containers cool. Extinguish fire, using agent suitable for surrounding fire.

See Section 7 for protective equipment for fire fighting.

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## SECTION 6: TOXICOLOGY AND HEALTH INFORMATION

EXPOSURE STANDARDS: None established

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: There is no level established for this chemical.

ODOR THRESHHOLD: There is no data available on the odor threshold of sodium chlorite.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Deficiency in G6PD enzyme and other red blood cell diseases.

INTERACTIONS WITH OTHER CHEMICALS ENHANCE TOXICITY: None known or reported.

### ACUTE TOXICITY:

ROUTES OF EXPOSURE: Oral, dermal, inhalation, and eye contact.

- INHALATION: Inhalation may cause irritation of the mucous membranes and respiratory tract. Symptoms may include coughing, bloody nose, and sneezing. Severe overexposures may cause lung damage.
- SKIN: Direct contact may cause severe irritation and/or burns with symptoms of redness, itching, swelling and possible destruction of tissue.
- EYE: Mist or direct contact may cause severe irritation and possible burns. Symptoms may include tearing, redness, eye damage due to burns.
- INGESTION: Gastroenteritis with any or all of the following symptoms: nausea, vomiting, lethargy, diarrhea, bleeding or ulceration. Acute ingestion of large quantities may also cause anemia due to the oxidizing effects of the chemical.

### ANIMAL TOXICOLOGY:

Inhalation LC50: No available data

Dermal LD50: > 2g/kg (rabbit)  
Oral LD50: Approximately 350 mg/kg (rat)  
Irritation: Severe irritant with corrosive action to skin (of rabbit). Severe irritant to eyes (of rabbit).

FIRST AID:

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes while frequently lifting the upper and lower eyelids. Consult a physician immediately.

SKIN: Remove contaminated clothing. Immediately flush exposed skin areas with large amounts of water for at least 15 minutes. Consult a physician if burning or irritation of the skin persists. Contaminated clothing should be kept wet and must be laundered before re-use.

INGESTION: DO NOT induce vomiting. Drink large quantities of water. Consult a physician immediately. DO NOT give anything by mouth if the person is unconscious or having seizures.

INHALATION: Move patient to fresh air and monitor for respiratory distress. If cough or difficulty in breathing develops, administer oxygen, and consult a physician immediately. In the event that breathing stops, administer artificial respiration and obtain emergency assistance immediately.

NOTES TO PHYSICIAN: 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.

CHRONIC TOXICITY:

INHALATION: There are no data available on the chronic effects of inhaling sodium chlorite.

SKIN: There are no studies or reports on the repeated effects of dermal exposure to sodium chlorite. Because of the acute effects, repeated direct contact may be unlikely.

INGESTION:

The chronic ingestions of low concentrations of this product have been studied in laboratory animals. Concentrations in the drinking water of 100 mg/L and higher have been shown to cause mild anemia and a minor suppression of thyroid functions in laboratory animals. All effects were reversible after cessation of treatment.

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

CHRONIC TARGET ORGAN TOXICITY:

Chlorine dioxide may be formed by reaction of sodium chlorite with acids or chlorine. Repeated exposures to solutions of chlorine dioxide at concentrations of 10-100 mg/L have produced slight effects upon the thyroid in younger animals and the hematologic system. Exposures to these concentrations can reduce the cellular and blood levels of glutathione, an agent which is protective against the oxidizing effect of this chemical. Exposure of laboratory animals above 100 mg/L in the drinking water have shown a decrease in blood cell glutathione, red blood cell count and hemoglobin. In some studies these levels also caused a slight decrease in thyroid hormones, especially in younger animals.

CARCINOGENICITY:

Sodium chlorite is not listed by NTP, IARC, OSHA, EPA, or any other authority as a carcinogen. Carcinogenicity studies conducted in mice and rats did not show an increase in tumors in animals exposed to sodium chlorite in their drinking water.

MUTAGENICITY:

Sodium chlorite has been evaluated for possible mutagenic effects in several laboratory tests. Sodium chlorite tested positive in the Ames Salmonella reverse mutation assay without metabolic activators and caused chromosomal aberrations in an In-Vitro Chinese hamster fibroblast cell line without metabolic activators. Sodium chlorite also tested positive in the mouse micronucleus assay when administered intra-peritoneally (directly into the body cavity), but was not mutagenic when administered orally. 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:

Sodium chlorite has not been found to be teratogenic in studies in which animals have been exposed up to 100 mg/L in the drinking water. Male rats repeatedly exposed to concentrations of 100 mg/L or greater have shown slight effects on sperm motility. No effects were observed at 10 mg/L and no effects were observed on the fertility rate, histology of the male reproductive system or conception rate of animals exposed at 10 mg/L or higher.

AQUATIC TOXICITY:

Sodium chlorite is slightly toxic to fish and other aquatic organisms. For bluegill (*Lepomis machrochirus*), aquatic toxicity studies have shown a TL50 of 208 mg/l and LC50 values of 265-310 mg/l. Rainbow trout (*Salmo gairdneri*) have been tested and shown acute toxicity values of 50.6 mg/l (TL50) and 290 mg/l (LC50). Of the aquatic species tested, Daphnia have been the most sensitive species tested with an LC50 of 0.29 mg/l. Sodium chlorite is acutely toxic to birds when administered by gavage. The acute oral LD50 in mallard ducks is 0.49-1.00 g/kg. In bobwhite quail the LD50 is 0.66g/kg. Sodium chlorite in the diet of birds was not acutely toxic. Eight day dietary LC50's in mallard ducks and bobwhite quail were both greater than 10,000mg/L in the diet.

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SECTION 7: PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA approved acid gas respirator plus dust/mist filters if any exposure to dust or mist is possible.

VENTILATION: Use local exhaust ventilation.

SKIN AND EYE PROTECTIVE EQUIPMENT: Wear Neoprene gloves, boots, chemical goggles, apron, or impermeable suit to avoid skin and eye contact. Thoroughly wash all contaminated clothing.

OTHER: Emergency eye-wash and safety showers must be provided in the immediate work area. Thoroughly wash all contaminated clothing.



PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:

Wear full protective clothing (chemically impermeable, full encapsulated suit) and positive pressure self-contained breathing apparatus.

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SECTION 8: PRECAUTIONS FOR SAFE HANDLING AND STORAGE

WARNING STATEMENTS AND WARNING PROPERTIES:

**DANGER! STRONG OXIDZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION OR BURNS TO SKIN AND EYES. HARMFUL TO BREATHE. DO NOT SWALLOW OR BREATHE. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.**

STORAGE CONDITIONS:

Do not store at temperatures above 52°C (125°F). Do not expose to direct light. Do not expose to moisture during storage.

SHELF LIFE LIMITATIONS:

6 months

INCOMPATIBLE MATERIALS FOR PACKAGING:

Combustible or readily oxidizable materials; sulfur-containing rubber.

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:

Acids, reducing agents, combustible material, oxidizers (such as hypochlorites), paints, sulfur, solvents.

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SECTION 9: SPILL AND LEAKAGE PROCEDURES

**FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 1-800-424-9300. ALL SPILLS OR LEAKS OF THIS MATERIAL MUST BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.**

SPILL MITIGATION PROCEDURES:

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



AIR RELEASE: Vapors may be suppressed by the use of water fog or spray. Contain all liquids for treatment and/or disposal as (potential) hazardous waste.

WATER RELEASE: This material is soluble in water. Notify downstream water users of possible contamination. Divert water flow around spill if possible and safe to do so. Continue to handle as described in LAND SPILL, below.

LAND SPILL: Pick up, keep in closed container and hold for waste disposal. DO NOT place spill materials back in their original container. Decontaminate all clothing and, if permitted, the spill area using strong detergent and flush with large amounts of water.

SPILL RESIDUES: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste designation: D001. Also, it will be subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous solid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility.

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SECTION 10: TRANSPORTATION INFORMATION

This material is regulated as a DOT hazardous material.  
DOT Shipping Description (49 CFR 172.101)

Placard Required: Oxidizer  
Proper Shipping Name: Sodium Chlorite, 5.1, UN 1496, II

This applicable packaging section in 40CFR is 173.212.

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SECTION 11: ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:  
The components of the product are listed on the Toxic Substance Control Act Inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III HAZARD CATEGORIES (40CFR370.2):

- HEALTH: Immediate (Acute), Delayed (Chronic)
- PHYSICAL: Fire



205 Webster Street  
Bethlehem, PA 18015  
888-610-2562  
[www.cdgenvironmental.com](http://www.cdgenvironmental.com)

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW (40CFR355, AAP.A)

E H S-THRESHOLD PLANNING QUANTITY:

None Established

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40CFR372.45):

None Established