

# Safety Data Sheet

## 1. IDENTIFICATION

### Chlorine Dioxide powder

**Use:** Disinfectant / Sanitizer / Deodorizer  
**Company:** Chemical Research Products Industrial Sales Incorporated

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Emergency Information

Chemical Research Technical Tel. No.: (02) 687-6541

## 2. HAZARD(S) IDENTIFICATION

**GHS Classification:** GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)  
Oxidizing solids (Category 2), H272  
Acute toxicity, Oral (Category 4), H302  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410  
Specific target organ toxicity (repeated exposure) (spleen) (Category 2), H373

**Label Element:**



**Signal Word:** Danger

**Hazard Statement:** May intensify fire; oxidizer.

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause respiratory irritation.  
May cause damage to organs through prolonged or repeated exposure. (spleen)  
Very toxic to aquatic life with long lasting effects.

### Precautionary Statements

- **Prevention:** Keep away from heat. Keep/Store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Avoid release to the environment
- **Response:** In case of fire: Use water for extinction. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If exposed: Call a poison center/doctor. Collect spillage.
- **Storage:** Store locked up. Store in a well-ventilated place. Keep container tightly closed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity	CAS Number	Percentage (%)
Sodium Chlorite	7758-19-2	5%
Citric Acid Monohydrate	5949-29-1	6%
Sodium Bisulfate	7681-38-1	12%
Sodium Carbonate	497-19-8	18%
Sodium Chloride	7647-14-5	59%
Chlorine Dioxide	10049-04-4	8%-12%

### 4. FIRST-AID MEASURES

- Eyes:** Immediately flush with plenty of lukewarm water for up to 20 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Take care not to raise contaminated water into affected eye. Get medical attention immediately.

- Skin:** Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Wash contaminated clothing before reuse.
- Ingestion:** Never give anything by mouth if victim is rapidly losing consciousness, or if unconscious or convulsing. Have victim rinse mouth thorough with water. Have victim drink one cup (240-300ml 8-10 oz) to dilute material in stomach. Do not induce vomiting. If vomiting occurs naturally, rinse mouth and repeat administration of water. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.
- Inhalation:** Remove source of contamination or move victim to fresh air. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped start CPR (cardiopulmonary resuscitation). Get medical attention immediately.
- Notes to Physician:** Chlorine dioxide vapors are emitted when this product contacts water, 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

## 5. FIRE-FIGHTING MEASURES

- Extinguishing Media:** Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).
- Exposure Hazard:** Oxidizing material. May intensify fire. This material is very toxic to aquatic life. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Protective Equipment:** Wear full protective clothing and self-contained breathing apparatus exposed to vapors or products of combustion.
- Advice for Firefighters:** 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.

## 6. ACCIDENTAL RELEASE MEASURES

- Personal Precaution:** 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.

**Environmental Precaution:** 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.

**Clean up Methods:** 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 applicable regulations.

## 7. HANDLING and STORAGE

**Handling:** Handle in accordance with good industrial hygiene and safety procedures. Always wash your hands immediately after handling this product, and once again before leaving the workplace. Provide good ventilation in process area to prevent formation of vapor. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke in the areas where product is used.

**Storage:** Store in a dry, cool and well-ventilated place. Keep containers closed when not in use. Store away from heat sources, ignition sources, direct sunlight, incompatible materials, combustible materials. Storage areas should be periodically checked for corrosion and integrity. Usable materials for containers are Polyester, PVC, stainless steel, or coated steel.

**Incompatible Material:** Never allow product to get in contact with water during storage. Do not store near acids and other reducing agents.

## 8. EXPOSURE CONTROL/PERSONAL PROTECTION

**Personal Protection:** Avoid contact, wear gloves, safety boots, safety glasses and overalls

**Respiratory Protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

**Eye Protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

<b>Skin Protection:</b>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
<b>Other Personal Protection Data:</b>	Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Hygiene Measures:</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL and CHEMICAL PROPERTIES

Physical State:	Solid granules
Appearance:	White
Odor:	Slight chlorine odor
Odor threshold:	Not available.
pH:	5.5 – 7.0
Specific gravity:	Not available
Melting point/freezing point:	Decomposes before melting
Boiling point:	Not available
Vapor Pressure:	Not available
Vapor Density:	Not available
Evaporation Rate:	Not available

## 10. STABILITY and REACTIVITY

<b>Conditions to Avoid:</b>	Direct sunlight, moisture, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.
<b>Materials to Avoid:</b>	Acids, acid substances (Aluminum sulfate, aluminum chloride, ferric chloride), wood, cellulose, grease, cotton.
<b>Hazardous Decomposition:</b>	This product decomposes into chloride and sodium chlorate under heating and direct sun-light. The subsequent decomposition of chlorate releases oxygen with risk of bursting containers. In contact with acid materials (acid, aluminum sulfate, aluminum chloride, etc.) chlorine dioxide is formed with risk of explosion.

## 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects- Product:

<b>Acute Toxicity:</b>	Toxic if swallowed. Fatal in contact with skin. Fatal if inhaled.
<b>Acute (oral) LD50</b>	284 mg/kg body weight (Rats) ( OECD 401)
<b>Acute (dermal) LD50</b>	134 mg/kg body weight (rabbit) ( EPA OPP 81-2)
<b>LC50 inhalation:</b>	An acute inhalation toxicity study is not required since exposure of humans via inhalation is unlikely taking into account the vapor pressure of the substance and/or the possibility of exposure to aerosols, particles or droplets of an inhalable size.
<b>Skin corrosion/irritation:</b>	skin corrosive Category 1B: Causes severe skin burns and eye damage. Corrosive (rabbit: necrosis is observed in two animals) (EPA No 158.81-5)
<b>Eye damage/irritation:</b>	Irreversible effects in the eye: Category 1: Causes serious eye damage. Damage observed in rabbits.
<b>Sensitization:</b>	Respiratory sensitization: no data available. Skin sensitization: non-sensitizing.
<b>Specific target organ toxicity-repeated exposure:</b>	Category 2: May cause damage to organs through prolonged or repeated exposure.
<b>Carcinogenicity:</b>	Based on the available data, the classification criteria are not met. Oral route: NOEL: >32.1mg/kg body weight/day (85 weeks) Dermal route: NOEL: > 57.14 mg/kg body weight/day (51 weeks)
<b>Germ cell mutagenicity:</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity:</b>	Based on available data, the classification criteria are not met.

## 12. ECOLOGICAL INFORMATION

**Ecology-General:** Very toxic to aquatic life.

Acute Toxicity to fish: LC50 Fish 106mg/l (96h. *Oncorhynchus mykiss*) 105mg/l (96h, *Cyprinodon variegatus*)

Chronic toxicity to fish: NOEC (no observed effect concentration)

Acute toxicity to crustaceans: EC50 *Daphnia* <1 mg/l (Exposure time: 48 h- Species: *Daphnia magna* ).

Chronic toxicity to crustaceans: NOEC no observed effect concentration.

Acute toxicity to algae and other aquatic plants: EC50 *Selenastrum capricornutum* 1mg/l: 96hrs. )

**Persistence and Degradability:** Readily biodegradable.

**Bioaccumulative Potential:** Sodium Chlorite is highly water soluble with an extremely low Log Pow. Therefore, the substance has a low potential for bioaccumulation. Due to its extremely low lipophilicity and high instability in water, sodium chlorite and hence chlorine dioxide are not expected to bioaccumulate.

**Mobility in soil:** Not available

**Other adverse effects** Avoid release to the environment

### 13. DISPOSAL CONSIDERATION

**Disposal method:** The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

### 14. TRANSPORT INFORMATION

This material is regulated as a DOT hazardous material.

DOT Shipping Description (49 CFR 172.101)

Sodium Chlorite, 5.1, UN 1496, II

The applicable packaging section is 49 CFR 173.4 (small quantity - maximum amount of sodium chlorite per individual receptacle is 30 grams). Oxidizer placard not required. Outside package must be marked as follows: "This package conforms to 49 CFR 173.4."

### 15. REGULATORY INFORMATION

#### TOXIC SUBSTANCES CONTROL ACT

The components of this product are listed on the Toxic Substance Control Act (TSCA) inventory

Superfund Amendments and Reauthorization Act (SARA) Title III

Hazard Categories (40 CFR 370.2)

HEALTH: Immediate (Acute), Delayed (Chronic)

PHYSICAL: Fire

Emergency Planning and Community right to Know (40 CFR 355, APP.A)

Extremely Hazardous Substance (EHS) – Planning Quantity  
None Established

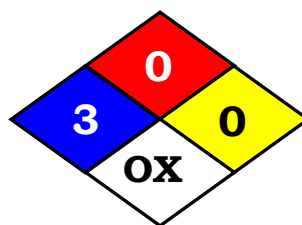
Supplier Notification Requirements, per 40 CFR 372.45  
None Required

## 16. OTHER INFORMATION

### HMIS

<b>HEALTH</b>	<b>3</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>REACTIVITY</b>	<b>2</b>
<b>PERSONAL PROTECTION</b>	<b>X</b>

### NFPA



0 = Minimal    1 = Slight    2 = Moderate    3 = High/ Serious    4 = Extreme/ Severe

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information is based on our present state of knowledge and is intended to describe our product with respect to possible safety demands. We believe this information is reliable and up-to-date as of the date of publication, but make no warranty that it is. We provide no guarantee of properties or description of qualities.