

# ERCOPURE 31

Sodium Chlorite Solution

FOR USE IN GENERATING CHLORINE DIOXIDE TO CONTROL MICROORGANISMS  
IN MUNICIPAL DRINKING WATER

Active Ingredient: Sodium Chlorite.....	31.0%
Other Ingredients.....	69.0%
Total:	100.0%



LICENSED

PERIOD 2014-2016 LIC. NO. 9067.2



LICENSED

PERIOD 2011-2013 LIC. NO.

KEEP OUT OF REACH OF CHILDREN  
**DANGER**

EPA Reg. No.: 53345-23  
EPA Est. No.: 53345-CN-001, 53345-CAN-004, 70124-LA-001

Net Contents: 55 gallons

## FIRST AID

**IF IN EYES:** Hold eye open rinse slowly and gently with plenty of water for at least 15 minutes. Remove contact lenses, if present, after 5 minutes then continue rinsing eye. Call poison control center or doctor for treatment advice.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing and shoes. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

## PRECAUTIONARY STATEMENTS

### Hazard To Humans And Domestic Animals

**DANGER:** Highly corrosive, causes irreversible eye damage and skin burns. Do not get in eyes, on skin or clothing. Wear goggles or face shield, use only Neoprene gloves and use only thoroughly clean dry utensils when handling. May be Fatal if swallowed. **Irritating to nose and throat. Avoid breathing fumes.** Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.

### ENVIRONMENTAL HAZARDS

This product is toxic to fish and other aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

### PHYSICAL OR CHEMICAL HAZARDS

Strong oxidizing agent. Mix or dilute with water only. Mixing with acids, or alcohol, or other chemicals may cause evolution of chlorine and chlorine dioxide gas mixture which is toxic and may be explosive. Combustible materials contaminated with ERCOPURE 31 may burn rapidly. Keep handling areas and equipment clean and free of oils, greases, combustibles and dust. Do not contaminate product with garbage, dirt, organic matter, paint products, solvents, acids, vinegar, beverages, oils, pine oils, dirty rags, or other foreign matter. Do not expose to hot surfaces, sparks or open flame.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**Pesticide Storage:** Store upright in cool, dry and well-ventilated place. Avoid excessive heat or freezing. Protect from contact with other chemicals; avoid storage with organic chemicals, acids, reducers and combustible material. Keep container tightly closed when not in use. In case of spills, flush and drain promptly to sewer with large quantities of water. Do not allow liquid to dry out because this could present a fire hazard. If fire occurs, extinguish with large quantities of water. Do not skid or slide drums.

**Pesticide Disposal:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label directions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

### Container Handling and Disposal:

**Tank trucks and Railcars:** Return for reuse. All valves must be closed tight and closure or caps secured.

**Containers equal to or less than 5 gallons:** Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Containers over 5 gallons:** Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the 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. Turn the container over onto its other 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

ERCO Worldwide

302 The East Mall, Suite 200, Toronto, Ontario, Canada M9B 6C7

## CHLORINE DIOXIDE GENERATION

ERCOPURE 31 is a precursor for the generation of chlorine dioxide. DO NOT ADD ERCOPURE 31 directly to the system being treated. Chlorine dioxide solutions can be generated from ERCOPURE 31 by several common methods including:

1. The chlorine method which utilizes ERCOPURE 31 and chlorine gas, or,
2. The hypochlorite method which utilizes ERCOPURE 31, a hypochlorite solution and an acid or,
3. The Acid-Chlorite method which utilizes ERCOPURE 31, and an acid, or
4. The electrolytic method which utilizes ERCOPURE 31, with sodium chloride as needed.

ERCOPURE 31 can also be used to form acidified sodium chlorite solutions by mixing the product with Generally Recognized as Safe (GRAS) acids such as citric, phosphoric or acetic acid. Add the generated chlorine dioxide solution to a point in the system which ensures uniform mixing. Your ERCO Worldwide representative can guide you in the selection, installation and operation for feed systems.

## DIRECTIONS FOR USE

It is a violation of federal law to use this product inconsistent with its labeling.

### Method of Application

Chlorine dioxide generation must take place only under controlled conditions in a chlorine dioxide generator. These generators react with ERCOPURE 31 with either chlorine or a chlorine solution and hydrochloric acid producing an aqueous solution of chlorine dioxide. This solution is then added at a point in the system to be treated which ensures uniform mixing. Alternatively, chlorine dioxide can be generated electrically by anodic reduction. Do not apply ERCOPURE 31 directly to the system being treated. Follow all instructions in the chlorine dioxide generator manual.

## APPLICATIONS

**MUNICIPAL DRINKING WATER DISINFECTION:** For municipal water systems, a chlorine dioxide residual concentration up to 2.0 ppm is sufficient to provide adequate disinfection. Normal target residual concentrations are in the 0.2-0.75 ppm range. Monitor the distribution system to ensure that the chlorite concentration does not exceed its maximum contaminant level (MCL) of 1 mg/L and that chlorine dioxide does not exceed its maximum residual disinfectant level (MRDL) of 0.8 mg/L.

**WASTEWATER DISINFECTION:** For most municipal systems, a chlorine dioxide residual concentration up to 2.0 ppm is sufficient to provide adequate disinfection. Monitor the distribution system to ensure that the chlorite concentration does not exceed the maximum contaminant level (MCL) of 1 mg/L and that chlorine dioxide does not exceed its maximum residual disinfection level (MRDL) of 0.8 mg/L. The concentration of total residual oxidants (chlorine dioxide, chlorite and chlorate) should be monitored such that it does not exceed 1.0 ppm in the distribution system. For wastewater and sewage applications, residual chlorine dioxide concentrations up to 5.0 ppm are generally adequate.

**POTABLE WATER DISINFECTION:** For most municipal systems, a chlorine dioxide residual concentration up to 2.0 ppm is sufficient to provide adequate disinfection. Monitor the distribution system to ensure that the chlorite concentration does not exceed the maximum contaminant level (MCL) of 1 mg/L and that chlorine dioxide does not exceed its maximum residual disinfection level (MRDL) of 0.8 mg/L. The concentration of total residual oxidants (chlorine dioxide, chlorite and chlorate) should be monitored such that it does not exceed 1.0 ppm in the distribution system. For wastewater and sewage applications, residual chlorine dioxide concentrations up to 5.0 ppm are generally adequate.

**POTABLE WATER SYSTEMS: Nitrification:** to control the build-up of nitrification in the water distribution system. Utilize a chemical metering system to add this product so that the resulting dose of chlorine dioxide or sodium chlorite to control nitrification does not exceed the MRDL of 0.8 mg/L for ClO<sub>2</sub>, nor the MCL of 1.0 mg/L for chlorite ion.

Use of this product in public water systems (drinking water utilities) triggers monitoring and compliance requirements under 40CFR141. Among other requirements the user of the product is required to conduct daily monitoring for chlorine dioxide and chlorite at the point of addition and to comply with standards for chlorine dioxide and chlorite. The user of this product is required to contact State or primary drinking water programs to determine specific monitoring, compliance, reporting and record-keeping requirements in order to avoid adverse human health effects and/or non-compliance with such requirements.

**FOOD PROCESSING PLANTS, DAIRIES, BOTTLING PLANTS AND BREWERIES and FOOD PLANT PROCESS WATER:** For microbial control in typical food processing water systems, such as flume transport, chill water systems, hydrocoolers and retort cooling water, apply ERCOPURE 31 through a chlorine dioxide generation system to achieve a chlorine dioxide residual concentration ranging from 0.25 to 5.0 ppm.

Chlorine dioxide generated from ERCOPURE 31 may also be used as a water sanitizer for fruit and vegetable washing and cut and peeled potato products without a subsequent potable water rinse requirement, provided that the concentration of total residual oxidants meet the residual limitation of  $\leq 1.0$  ppm.

Residual concentrations up to 5.0 ppm chlorine dioxide in process water may be used for washing whole uncut and unpeeled fruits and vegetables although a final potable water rinse is required if the residual exceeds 1 ppm.

Potatoes, including those which have been peeled or cut, may be treated with sufficient chlorine dioxide to produce a residual concentration of up to 5.0 ppm provided this is followed by a potable water rinse.

**POULTRY PROCESSING WATER:** Use ERCOPURE 31 to generate chlorine dioxide for use as an antimicrobial agent in water used in poultry processing in an amount not to exceed 3 ppm residual chlorine dioxide as determined by an appropriate method.

**SANITIZATION OF FOOD-CONTACT SURFACES IN FOOD-PROCESSING PLANTS, DAIRIES, BOTTLING PLANTS AND BREWERIES: Note: Only the chlorine and hypochlorite methods described above can be used to generate chlorine dioxide for sanitization of food-contact surfaces.** Use ERCOPURE 31 to generate chlorine dioxide for use as a terminal no-rinse sanitizer for food-contact surfaces, food-processing equipment and utensils. Prior to application, remove gross food particles and soil by a pre-flush, or pre-scrape, and, when necessary, pre-soak treatment. Then thoroughly wash all equipment, surfaces and utensils with a suitable detergent or cleaner, followed by a potable water rinse. Dilute the chlorine dioxide solution generated from the chlorine dioxide generator with potable water to achieve a use-solution of at least 100 ppm but not more than 200 ppm available chlorine dioxide. A contact time of at least one minute is required for sanitization. Allow the sanitizing solution to thoroughly drain and dry from all equipment and surfaces prior to recontact of the sanitized surface with food or feed items.

**GENERAL INDUSTRIAL PROCESS WATER TREATMENT (OILFIELD INJECTION WATER, WHITE WATER PAPER MILL SYSTEMS, AND RECIRCULATING COOLING TOWERS):** Use ERCOPURE 31 to generate chlorine dioxide for the control of microbial slime in the above water systems. In order to achieve adequate control, the chlorine dioxide residual concentration should be between 0.25 and 5.0 ppm.

**ONCE-THROUGH COOLING WATER SYSTEMS:** Control of mollusks can be effectively accomplished using ERCOPURE 31 as directed in commercial and industrial once-through cooling water systems. ERCOPURE 31 may be fed on a continuous or slug basis depending on the degree of system fouling.

Slug Dose: Add 34 to 168 lbs. of chlorine dioxide per million gallons of water (5 to 25 ppm).

Continuous Dose: Add 2 to 13 lbs. of chlorine dioxide per million gallons of water (0.25 TO 2 PPM).

**DIRECTIONS FOR CONTROLLING THE GROWTH OF ALGAE IN RECIRCULATING COOLING WATER TOWERS:** 1. Clean badly fouled systems before starting treatment. 2. When algae are visible, add an initial dosage of 6.6 fl. oz. of Sodium Chlorite per 1,000 gals of water in the system. Repeat if necessary until control is evident. 3. Where algae control is evident, use a subsequent dose of 3.3 fl. oz. of Sodium Chlorite solution per 1,000 gals of water in the system twice a week or as needed to maintain control. 4. Add Sodium Chlorite directly to the cooling tower drip pan (cold water basin) near the inlet to the recirculating pump.

**DIRECTIONS FOR USE IN THE MECHANICAL OR ELECTROLYTIC GENERATION OF CHLORINE DIOXIDE AS A DISINFECTANT, OR FOR MICROORGANISM OR MOLLUSK CONTROL AND AS A CHEMICAL OXIDANT IN AQUATIC SYSTEMS:** Feed requirements: Feed rates of 31% Active Sodium Chlorite Solution will depend on the severity of contamination and the degree of control desired. The exact dosage will depend on the size of the system and residual necessary for effective control. 31% Active Sodium Chlorite Solution is typically diluted at the point of use to prepare a 3% to 25% active aqueous solution for use in chlorine dioxide generators.

Some examples of industrial applications of chlorine dioxide include:

- Potable water disinfection and removal of sulfide.
- Bacterial slime control in white water paper mill systems.
- Destruction of phenolics, simple cyanides and sulfides by chemical oxidation.
- Biocontrol in food processing flumes, water-using equipment, cooling water, and recycled waters.
- Disinfection of sewage and plant wastes.
- Bacterial control in oil well and petroleum systems.
- Control of bacterial slime and algae and mollusks in industrial recirculating and one-pass cooling systems.

**BACTERIAL SLIME CONTROL IN PAPERMILLS:** Chlorine dioxide generated from sodium chlorite is effective for use in controlling microbiological growth in white water paper mill systems. The required dosages will vary with the degree of microbiological and process contamination present. Depending on the specific requirements of the system, sodium chlorite should be applied continuously or intermittently through a chlorine dioxide generating system to achieve a chlorine dioxide residual concentration between 0.1 and 5.0 ppm. Intermittent treatments should be repeated as often as necessary to maintain control.

**BACTERIAL CONTROL IN OIL WELLS AND PETROLEUM SYSTEMS:** Chlorine dioxide is effective in the remediation of bacterial and sulfide contamination commonly found in oilfield production, injection and disposal fluids. The required dosages will vary with process conditions. Sodium chlorite may be applied either continuously or intermittently through a chlorine dioxide generating system to oil well production water as it is separated from the oil, and before it is re-injected into the well.

For continuous feeds, chlorine dioxide may be applied at dosages slightly higher than sulfide's oxidative demand as determined by a demand study. For intermittent treatment, chlorine dioxide should be applied at a shock dosage of 200-3000 ppm.