

PM 32

5382-43

10/19/99

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OCT 19 1999

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Roger E. Etherington
Vulcan Chemicals
P.O. Box 385015
Birmingham, AL. 35238-5015

SUBJECT: July 16, 1999 letter
Technical Sodium Chlorite Solution 31.25
EPA Registration Number 5382-43

Dear Mr. Etherington:

The amendment referred to above, submitted in connection with registration under Section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable subject to the comments listed below.

Under the Precautionary Statement bold the first two sentences as follows:
Highly corrosive. Causes skin and eye damage.


Under the "Environmental Hazards" statement revise the first sentence to read:
"This pesticide is toxic to fish and aquatic organisms."

On page three change "See product bulletins for specific application instructions" to
See product bulletins (or Technical Data Sheets) for specific application instructions.

This label will replace the previously approved labels and stamped technical data sheets.

If you have any questions regarding this letter, please contact Tom Luminello of my staff at (703) 308-8075.

Sincerely yours


Robert S. Brennis
Product Manager (32)
Regulatory Management Branch II
Antimicrobial Division (7510-C)

2086

TECHNICAL SODIUM CHLORITE SOLUTION

31.25

(25% Active Sodium Chlorite)

ACTIVE INGREDIENT: Sodium Chlorite25%
INERT INGREDIENTS:75%
AVAILABLE CHLORINE39%

CONTAINS 2.58 LBS. OF SODIUM CHLORITE
PER GALLON AT 70°F

**KEEP OUT OF REACH OF CHILDREN
DANGER!**

FIRST AID

If on skin- Flush skin with cold water for at least 15 minutes.
Call physician.
If Swallowed- Give large amounts of water. Call a physician.
If in Eyes- Flush with cold water for at least 15 minutes.
Call a physician.

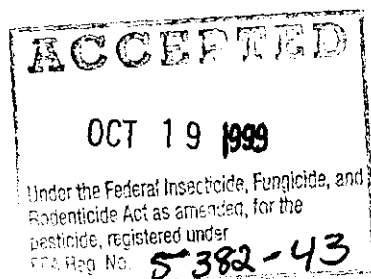
SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONS

Vulcan CHEMICALS

A Business Group of Vulcan Materials Company
P O Box 385015, Birmingham Alabama 35238-5015

EPA Reg. No. 5382-43

EPA Est. 5382-KS-1



_____ Gals.Net (_____)

VMC-6400 (7/92)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER

Bld → Highly corrosive. Causes skin and eye damage. May be fatal if swallowed. Do not get in eyes, or on skin, or clothing. Do not handle with bare hands. Wear goggles or face shield and neoprene gloves and use only thoroughly clean, dry utensils when handling. Irritating to nose and throat. Avoid breathing fumes. Remove and wash contaminated clothing to avoid fire.

ENVIRONMENTAL HAZARDS

^{AND AQUATIC ORGANISMS.}
This product is toxic to fish. 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 the 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.

CHEMICAL HAZARDS

- 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.

DIRECTIONS FOR USE

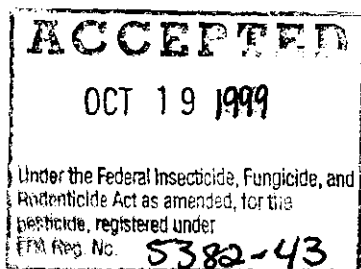
It is a violation of Federal law to use the product in a manner inconsistent with its labeling.

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 8.4 fluid ounces 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 4.2 fluid ounces 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 Technical Sodium Chlorite Solution 31.25 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. Depending on the generator type, Technical Sodium Chlorite Solution 31.25 may be 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.
- Control of bacterial slime and algae and mollusks in industrial recirculating and one-pass cooling systems.
- Biocontrol in food processing flumes, water-using equipment, cooling water, and recycled waters.
- Disinfection of sewage and plant wastes.
- Destruction of phenolics, simple cyanides and sulfides by chemical oxidation.
- Bacterial slime control in white water paper mill systems.
- Bacterial control in oil well and petroleum systems.

ACCEPTED
OCT 19 1999
Under the Federal Insecticide, Fungicide, and
Rodenticide Act as amended, for the
pesticide, registered under
EPA Reg. No. 5382-43

(OR TECHNICAL DATA SHEETS)

See product bulletins for specific application instructions. Your Vulcan representative can guide you in the application techniques.

Method of feed: Large amounts of chlorine dioxide can be generated by several common methods, including:

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

Your Vulcan representative can guide you in the selection, installation and operation for feed systems. Consult product bulletin and also the instructions on the chlorine dioxide generation system before using Technical Sodium Chlorite Solution 31.25.

User is responsible for compliance with applicable federal, state and local laws regarding proper use and disposal of the chlorine dioxide generated.

Directions for Use in Controlling Microbial Population in Poultry Chill Water in Federally Inspected Plants

Chlorine dioxide generated from Technical Sodium Chlorite Solution 31.25 may be used as an antimicrobial agent in poultry chill water, provided that the residual concentration of chlorine dioxide does not exceed 3 ppm.

Apply Technical Sodium Chlorite Solution 31.25 as necessary through a chlorine dioxide generation system to maintain a residual concentration of up to 3 parts per million (ppm) chlorine dioxide at the midway point in the chill tank. Chlorine dioxide should be fed below the water level in the chill water tank.

Food Plant Process Water Treatment

Chlorine dioxide generated from sodium chlorite is effective for use in controlling microbiological growth in flume water and other food processing water systems such as chill water systems and hydrocoolers. The required dosages will vary with process conditions and the degree of contamination present. Depending on the requirements of the specific water system, sodium chlorite should be applied continuously or intermittently through a chlorine dioxide generating system to achieve a chlorine dioxide residual concentration between 0.25 and 5.0 ppm.

Water, containing up to 3 ppm residual chlorine dioxide may be used for washing fruits and vegetables. Treatment of the fruits and vegetables with chlorine dioxide must be followed by a potable water rinse, or by blanching, cooking or canning.

Industrial Cooling Water Treatment

For control of bacterial slime and algae in industrial recirculating and one-pass cooling systems, the required dosages will vary depending on the exact application and the degree of contamination present. The required chlorine dioxide residual concentrations range between 0.1 and 5.0 ppm. Chlorine dioxide may be applied either continuously or intermittently. The typical chlorine dioxide residual concentration range is 0.1 - 1.0 ppm for continuous doses, and 0.1 - 5.0 ppm for intermittent doses. The minimum acceptable residual concentration of chlorine dioxide is 0.1 ppm for a minimum one minute contact time.

Potable Water Treatment

Chlorine dioxide (ClO_2) is used as both an oxidant and a disinfectant in drinking water treatment. The required dosages will vary with source water conditions and the degree of contamination present. For most municipal and other potable water systems, a chlorine dioxide residual concentration of up to 2 ppm is sufficient to provide adequate disinfection. The concentration of total residual oxidants (chlorine dioxide, chlorite ion and chlorate ion) should be monitored such that it does not exceed 1.0 ppm in the distribution system.

Bacterial Slime Control in Paper Mills

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.

Mollusk Control in Water Systems

Chlorine dioxide generated from sodium chlorite may be used for mollusk control in commercial and industrial recirculating and one-pass cooling water systems. The required dosages will vary with the system type, system conditions, the degree of water contamination present and the desired level of control. Depending on the extent of the infestation, sodium chlorite may be applied either continuously or intermittently through a chlorine dioxide generating system to achieve the necessary chlorine dioxide residual concentration.

Veliger Control: Maintain a continuous chlorine dioxide residual of 0.1 - 0.5 ppm.

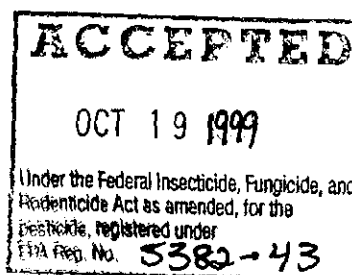
Intermittent Dose: Apply chlorine dioxide to obtain a chlorine dioxide residual concentration of 0.2 - 25 ppm. Repeat as necessary to maintain control.

Continuous Dose: Maintain a chlorine dioxide residual concentration of up to 2 ppm

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.



Wastewater Treatment

Chlorine dioxide (ClO_2) is effective as both a disinfectant and an oxidant in wastewater treatment. The required dosages will vary with water conditions and the degree of contamination present. For most municipal and other wastewater systems, a chlorine dioxide residual concentration of up to 5 ppm is sufficient to provide adequate disinfection.

For sulfide odor control, between pH 5-9, a minimum of 5.2 ppm (wt) of chlorine dioxide should be applied to oxidize 1 ppm of sulfide (measured as sulfide ion). For phenol destruction, at pH less than 8, 1.5 ppm chlorine dioxide will oxidize 1 ppm phenol; at pH greater than 10, 3.3 ppm chlorine dioxide will oxidize 1 ppm phenol.

STORAGE AND DISPOSAL

STORAGE: Do not contaminate water, food or feed by storage or disposal. Keep product in tightly closed container when not in use. Don't drop, roll or skid drum. Keep upright. Always replace cover. Store in a cool, dry well-ventilated area away from heat or open flame.

EMERGENCY HANDLING: In case of contamination or decomposition, do not reseal container. If possible, isolate container in open and well ventilated area. Flood with large volumes of water. If fire occurs, extinguish fire by applying large quantities of water. Any unopened drums near the fire should be cooled by spraying with water.

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 instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Triple rinse container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke

