

74119-1

7/28/2003

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

July 28, 2003

Arthur J. Freedman  
BTG International  
242 Sandlewoodburg Drive  
390 Penn Estates  
East Stroudsburg, PA 18301

Subject: *ACTIV-OX 20*  
*EPA Registration No. 74119-1*  
*Applications Dated: May 14 and June 26, 2003*  
*Receipt Date: May 20 and June 26, 2003*

Dear Mr. Freedman:

*The following amendment, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable with the conditions below.*

- Enforcement Analytical Method data*
- To change the term "hydrochloric acid" to "acid" under the non-FDA industrial application headers*
- To add phrase "Hydrochloric acid must be used to generate chlorine dioxide for this application" under the FDA application headers*

**Conditions**

- You have inadvertently omitted the amount of available chlorine after the ingredient statement. Please add the phrase:*

*"Available chlorine . . . . .4.0"*

- Revise the "First Aid" statement to add the following phrase:*

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

CONCURRENCES							
SYMBOL	7510C						
SURNAME	Mitchell						
DATE	7-23-03						

**General Comments**

*The amperometric titration method is acceptable.*

*A stamped copy of the accepted labeling is enclosed. Submit a copy of your final printed labeling before distributing or selling the product bearing the revised labeling.*

*Should you have any questions or comments concerning this letter, please contact Wanda Mitchell at (703) 308-6345.*

*Sincerely,*



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

CENTER PANEL  
**ACTIV-OX® 20**

(This product degrades with age. Do not use after 180 days from the date of manufacture unless a test kit is used to assure proper recommended dosage.)

**CHLORINE DIOXIDE PRECURSOR FOR MICROBIAL AND BACTERIAL SLIME CONTROL IN WATER, WASTEWATER, AND CLEANING SOLUTIONS, IN INDUSTRIAL COOLING WATER SYSTEMS AND PAPER MILLS.  
FOR CONTROL OF ALGAE AND MOLLUSK IN INDUSTRIAL COOLING AND SERVICE WATER SYSTEMS.  
FOR DESTRUCTION OF PHENOLICS, SIMPLE CYANIDES, AND SULFIDES IN WATER.**

Active Ingredients:		
Sodium Chlorite.....	2.7%	
Sodium Hypochlorite.....	2.0%	
Inert Ingredients:.....	95.3%	
	TOTAL:.....	100.0%

**KEEP OUT OF REACH OF CHILDREN**

# Danger

**FIRST AID STATEMENT:**

- If on skin or clothing:
  - Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15-20 minutes.
  - Call a poison control center or doctor for treatment advice.
- If in eyes:
  - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
  - Remove contact lenses, if present, after the first 5 minutes and continue rinsing eye.
  - Call a poison control center or doctor for treatment advice.
- If swallowed:
  - Call 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.
- If inhaled:
  - Move person to fresh air.
  - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
  - Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

See side panel for additional precautionary statements.

## BTG International

300 Barr Harbour Drive, 7<sup>th</sup> Floor  
West Conshohocken, PA 19428-2998

Phone: (610) 278-1660  
EPA Registration No. 74119-1

Emergency Phone: 1-800-424-9300  
EPA Establishment No.

NET CONTENTS STENCILED ON CONTAINER

ACCEPTED  
with COMMENTS  
EPA Letter Dated:

JUL 28 2003

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act as  
amended, for the pesticide,  
registered under EPA Reg. No. 74119-1

**LEFT PANEL**

**PRECAUTIONARY STATEMENTS  
HAZARD TO HUMANS AND DOMESTIC ANIMALS**

**CORROSIVE.** Causes irreversible eye damage and skin burns. May be fatal if absorbed through skin. Do not get in eyes on skin or clothing. May be fatal if inhaled. Irritating to nose and throat. Avoid breathing spray mist. Wear protective clothing, goggles or face shield, and rubber gloves when handling. Wash thoroughly with soap and water after handling and before eating or drinking or using tobacco. May be fatal if swallowed. In case of contact, immediately flush eyes and skin with plenty of water. Get medical attention if irritation persists.

**MAY BE FATAL IF SWALLOWED  
MAY CAUSE SKIN/EYE DAMAGE  
AVOID CONTACT WITH EYES**

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish and 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**

Do not mix with acids or other chemicals except water. Mixing with acid or other chemicals may cause evolution of chlorine dioxide gas, which is poisonous and explosive. Do not let spilled solution evaporate to dryness. If resultant residue contacts oxidizable or combustible materials, the mixture is easily ignited by heat or friction. This results in a fiercely burning fire, or in a confined space, a possible explosion. Examples of such materials are cloth, paper, wood, sawdust, hydrocarbons such as greases, oils, and solvents, rubber, leather, plastics and organic substances in general; also sulfur, sulfides, powdered metals, phosphorous and ammonium compounds.

**EMERGENCY HANDLING**

In case of contamination or decomposition, do not reseal container. Isolate in an open, well-ventilated location. Flood with large volumes of water.

**STORE IN A COOL DARK PLACE - KEEP FROM FREEZING**

**STORAGE AND DISPOSAL**

**DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE OR DISPOSAL.**

**Storage:** Do not store this product with oxidizers, acids, reducing agents, or combustible materials. Store in a cool, dry well-ventilated location away from direct sunlight. Protect from freezing. Store upright and do not stack pallets over two drums high. A clean non-metallic drum pump free of all other chemicals is recommended for transferring this material. Keep drums tightly closed when not in use. Store only in the original containers or approved storage containers, and guard against cross-contamination with other pesticides, fertilizers, food and feed. Do not reuse containers.

**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 (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or other procedures approved by state and local authorities.

**Spills:** In case of spills, dilute with large quantities for water and flush to a designated sewer in accordance with all applicable federal, state and local regulations. Alternatively, this product may be flushed to a collection basin or container for disposal. Comply with all applicable federal, state and local regulations regarding spill notification requirements.

Right Side Panel or Panels

### DIRECTIONS FOR USE

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

**Method of feed:** Chlorine dioxide is produced by activating ACTIV-OX® 20 with an acid solution specifically designed so that when equal parts of ACTIV-OX® 20 and this acid solution are pumped into the small mixing chamber specifically designed for this application, the resulting pH of the mixture in this chamber will be < 2.5. This mixture is then discharged immediately into a sidestream of water from the system to be treated. The pH in the mixing chamber must be < 2.5 for complete conversion of sodium chlorite to chlorine dioxide. The mixing chamber will contain about a 1 percent solution (10,000 ppm) of chlorine dioxide, which should then be immediately diluted 100:1 or greater when fed into the water stream being treated.

"The concentration of chlorine dioxide in the effluent from the reaction chamber or diluted in the sidestream of water can be readily measured with any of the common field test kits for oxidizing agents used in other chlorine dioxide applications, e.g. the DPD method. An ORP (oxidation-reduction potential) probe will respond instantly to the presence of chlorine dioxide, so that an ORP controller can be used to control the two pumps if desired. For more precise determinations, standard amperometric titration methods can be used."

**ACTIV-OX® 20 degrades with age.** Use a test kit and increase dosage as necessary to obtain the required level of available chlorine dioxide.

Your water treatment service company representative can guide you in the selection, installation and operation for feed systems. Consult product bulletin and also the instructions on the chlorine dioxide feed and activation system before using ACTIV-OX® 20. User is responsible for compliance with applicable federal, state and local laws regarding proper use and disposal of the chlorine dioxide produced.

### **Industrial Cooling Water Treatment, Heat Transfer Systems (evaporative condensers, dairy sweetwater systems, hydrostatic sterilizers and retorts, coolers, warmers, and bottling plants), Service Water, And Auxiliary Water Systems: (Acids other than hydrochloric can be used to generate chlorine dioxide for this application.)**

For control of bacterial slime and algae in industrial recirculating and one-pass cooling systems. The required dosages of chlorine dioxide 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.

### **Food Plant Process Water Treatment: (Hydrochloric Acid must be used to generate chlorine dioxide for this application.)**

For odor and microbial control of slime forming bacteria and other food spoilage bacteria in typical food processing water systems such as flume transport, 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, apply chlorine dioxide continuously or intermittently to achieve a chlorine dioxide residual concentration between 0.25 and 3.0 ppm. A chlorine dioxide solution may be used for microbial control in accordance with 21CFR§173.300 for fruit and vegetable washing and cut and peeled potatoes without a subsequent potable water rinse requirement, provided that the concentration of total residual oxidants meet the residual limitation of ≤ 1.0 ppm. Water, containing up to 3 ppm residual chlorine dioxide may be used for washing uncut and unpeeled fruits and vegetables that are not raw agricultural commodities. Treatment of the fruits and vegetables must be followed by a potable water rinse or by blanching, cooking, or canning if the chlorine dioxide 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 3.0 ppm provided this is followed by a potable water rinse or by blanching, cooking, or canning.

### **Controlling Microbial Population In Poultry Processing Plant Waters in Federally**

#### **Inspected Plants: (Hydrochloric Acid must be used to generate chlorine dioxide for this application.)**

For use as an antimicrobial agent in accordance with 21CFR§173.300 in poultry processing waters provided that the residual concentration of chlorine dioxide does not exceed 3 ppm. Maintain a residual concentration of up to 3 parts per million (ppm) chlorine dioxide at the midway point in the chill tank. The chlorine dioxide feed solution should be fed below the water level in the chill water and recycle water tanks.

#### **Public Water Systems: (Hydrochloric Acid must be used to generate chlorine dioxide for this application.)**

For use in public water treatment facilities that produce potable drinking water in compliance with the Safe Drinking Water Act under 40CFR§141. The required dosages will vary with source water conditions and the degree of contamination present. For most municipal and public potable water systems, a chlorine dioxide residual concentration of up to 2 ppm is sufficient to provide adequate disinfection. Residual disinfectant and disinfection byproducts must be monitored as required by the National Primary Drinking Water Regulations (CFR Part 141) and state drinking water standards. For removal of sulfide odor between pH 5-9, feed a minimum of 2.7 ppm chlorine dioxide to instantly oxidize each 1 ppm of sulfide. 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.

#### **Aqueous Systems For CIP Cleaning: (Acids other than hydrochloric can be used to generate chlorine dioxide for this application.)**

As an antimicrobial agent in the recirculating cleaning solution. If the required dosage exceeds 5.0 ppm chlorine dioxide, a potable water rinse should follow treatment.

#### **Bacterial Slime Control in Paper Mills: (Acids other than hydrochloric can be used to generate chlorine dioxide for this application.)**

In controlling microbiological growth in white water paper mill systems for paper that does not contact food. The required dosages will vary with the degree of microbiological and process contamination present. Depending on the specific requirements of the system, maintain a chlorine dioxide residual concentration between 0.1 and 5.0 ppm. Intermittent treatments should be repeated as often as necessary to maintain control.

Right Side Panel Continued (Second Panel)

**Mollusk Control in Water Systems:** (Acids other than hydrochloric can be used to generate chlorine dioxide for this application.)

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.

**Wastewater Treatment:** (Acids other than hydrochloric can be used to generate chlorine dioxide for this application.)

For treatment of sewage and wastewater, add chlorine dioxide to achieve a residual of up to 5 ppm. As an oxidant in wastewater treatment, the required dosages will vary with water conditions and the degree of contamination present. 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.

NOTE: Seller warrants that this product complies with the specifications expressed in this label. Seller makes no other warranties; and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose. Seller's liability for default, breach, failure under this label shall be limited to the amount of the purchase price. Seller shall have no liability for consequential damages. Buyer assumes all risk of use and/or handling, when such use and/or handling is contrary to label instructions.