

74517-2

08/26/2002

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Antimicrobials Division (7510C)
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

EPA Reg. Number:

74517-2

Date of Issuance:
AUG 26 2002

Term of Issuance:

Conditional

Name of Pesticide Product:

ZYDOX AD 20 31.25

NOTICE OF PESTICIDE:

Registration
 Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

ZYCHEM TECHNOLOGIES, INC.
Storaneset 44
P.O. Box 254
Indre Arna, N-5888 Bergen, Norway

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the following label changes:
 - a. Revise the EPA Registration Number to read, "EPA Reg. No.74517-2."

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Signature of Approving Official:

Wanda G. Mitchell, for
Robert S. Brennis,
Product Manager 32

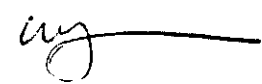
Date:

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b. Revise the "First Aid" statement as follows:

First Aid	
If in eyes	<ul style="list-style-type: none">■ Hold eye open and rinse slowly and gently with water for 15-20 minutes.■ Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.■ Call a poison control center or doctor for further treatment advice.
If on skin or clothing	<ul style="list-style-type: none">■ Take off contaminated clothing.■ Rinse skin immediately with plenty of water for 15-20 minutes.■ Call a poison control center or doctor for further treatment advice.
If swallowed	<ul style="list-style-type: none">■ Call a poison control center or doctor for further 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.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison center or doctor, or going for treatment. You may also contact 1 (800) xxx-xxxx for emergency medical treatment information. For information on this pesticide (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Telecommunications Network at 1 (800) 858-7378.	
Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.	

- c. The first sentence under the "Environmental Hazards" must be revised to read: This product is toxic to fish and aquatic organisms.
- d. Remove the parenthesis from the "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.
- e. Correct the typographical error under "Hazards To Humans & Domestic Animals" to read "... use only thoroughly **clean**, dry utensils when handling."



- f. The third sentence under "Bacterial Slime Control in Paper Mills" should read: 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 residual concentration between 0.1 and 5.0 ppm.
- 3. Submit two copies of the revised final printed label for the record

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Wj

Zydox AD 20 31.25 (25% Active Sodium Chlorite)

ACTIVE INGREDIENT:
Sodium Chlorite 25%

INERT INGREDIENTS: 75%
Total 100%

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

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Zychem Technologies

P O Box 254 Stonneset 44
Indre Arna
N-5888 Bergen, Norway

**ACCEPTED
with COMMENTS
- EPA Letter Dated:**

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EPA Reg. No.

**EPA Est. No.
Net Content:**

**Under the Federal Insecticide,
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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

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

ENVIRONMENTAL HAZARDS

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 ZYDOX AD 20 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, ZYDOX AD 20 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.

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See product bulletins for specific application instructions. Your ZYCHEM 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 ZYCHEM 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 ZYDOX AD 20.

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 ZYDOX AD 20 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 ZYDOX AD 20 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.

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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 (ClO₂) 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 oil field 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.

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Wastewater Treatment

Chlorine (ClO₂) 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 1ppm 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.

revised 8/23/02

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