PM 32 9804-1 Page 1 of 23

...ions on reverse before completing form. Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

United States
Environmental Protection Agency
Washington, DC 20460

[ ] Registration
[ ] Amendment
[XX] Other

OPP Identifier Number: 241159

Application for Pesticide - Section I

1. Company/Product Number: 9804-1

2. EPA Product Manager (ACTING): WALTER FRANCIS

3. Proposed Classification: [XX] None [ ] Restricted

4. Company/Product (Name): OXINE BIO-CIDE INTERNATIONAL INC

PM#: 32

5. Name and Address of Applicant *(Include ZIP Code)*
BIO-CIDE INTERNATIONAL INC
PO BOX 722170
NORMAN OK 73070-8644

[ ] *Check if this is a new address*

6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section - II

[ ] Amendment - Explain below.
[ ] Resubmission in response to Agency letter dated _____
[X] Notification - Explain below.
[ ] Final printed labels in response to Agency letter dated _____
[ ] "Me Too" Application.
[ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

"NOTIFICATION OF ADDING INDOOR NONFOOD SUBSITE AND SUBSTRATE FOR ANTIMICROBIAL PRODUCT PER PR NOTICE 95-2". SEE ATTACHED PAGES FOR ADDITIONAL EXPLANATION.

NOTIFICATION

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes* [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify)
* *Certification must be submitted*	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information: [ ] Label [ ] Container

4. Size(s) Retail Container

5. Location of Label Directions: [ ] On Label [ ] On Labeling accompanying product

6. Manner in Which Label is Affixed to Product: [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
JAMES P. RINGO	VICE PRESIDENT	(405)329-1556

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title
James P. Ringo	VICE PRESIDENT
4. Typed Name: JAMES P. RINGO	5. Date: 8/29/96

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EXPLANATION

I. "Notification of Adding Indoor Nonfood Subsite and Substrate for Antimicrobial Product per PR Notice 95-2".

II. "This notification is consistent with the provisions of PR Notice 95-2 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula for this product. I understand that it is a violation of 18 U.S.C. Sec 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 95-2 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA."

III. The following usage of the Oxine product, EPA Reg. No. 9804-1, is added to the label for use in the nonfood subsites and substrates:

For use as a lube additive to control bacterial slime and odor on moving conveyors and chains in food processing facilities.

Directions for Use:

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

1. Prior to application of the lube/Oxine mixture all conveyors, lube lines, spray nozzle heads, conveyor surfaces, and other associated structures should be thoroughly cleaned and sanitized.

2. Oxine should be added to the water dilution step of the lube system just prior to its injection into the lube distribution system. Addition of the Oxine into the lube/water mixture should be at the rate of 0.64 fl. oz. to 1.28 fl. oz. per 10 gallons of lube mixture. This will result in a final concentration of between 10 and 20 ppm of Oxine in the lube solution.

3. For best results use with natural (fatty acid, soap based) lubricant products. For advice on lube compatibilities contact your BCI distributor.

IV. By means of an advisory opinion from the Food and Drug Administration, see attached letter, BCI believes that this usage for the Oxine product as an antimicrobial pesticide is consistent with use in nonfood subsites and substrates per PR Notice 95-2, page 3, "Adding Indoor, Nonfood Sites for Antimicrobial Products".

V. Label. The addition to the OXINE label as stated in II has been inserted into a computer copy of the current label accepted by EPA with comments on April 11, 1996. The comments in the cover letter have also been incorporated into the text. The addition is on page 6 and is bracketed in pencil. No other changes to the OXINE label have been made.

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OXINE

SANITIZER

BACTERIOSTAT/DEODORIZER

- ACTIVE OXINE -

DISINFECTANT

FUNGICIDAL - BACTERICIDAL

OXINE Solutions are Non-Volatile

OXINE Destroys Odors at the Bacterial Origin

Food Processing Plants
Bottling Plants
Institutional Use
Animal Confinement
Water Filtration Systems

* Guaranteed Shelf Life

* Non-Flammable

* Low Corrosion

KEEP OUT OF REACH OF CHILDREN

CAUTION

HARMFUL IF SWALLOWED
MAY CAUSE IRRITATION
AVOID CONTACT WITH EYES

Active Ingredient: Chlorine Dioxide 2%
Inert Ingredients 98%

STORE IN COOL DARK PLACE - KEEP FROM FREEZING

E.P.A. REG. NO. 9804-1 E.P.A. EST. NO. 9804-OK-1

Net Contents: 128 Fl. Oz. (1 Gal.) 3.785 Liters

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GENERAL INFORMATION:

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

IN FOOD PROCESSING PLANTS, SUCH AS POULTRY, FISH & MEAT AND IN RESTAURANTS, DAIRIES, BOTTLING PLANTS AND BREWERIES:

As a terminal sanitizing rinse for stainless steel and other hard nonporous food contact surfaces such as tanks, transfer lines and other food processing equipment.

Directions for Use:

1. All gross food particles and soil should be removed prior to sanitizing by use of a pre-flush, pre-scrape or pre-soak treatment.

2. Clean tank, line, or surface thoroughly using a suitable detergent and rinse with clean potable water before sanitizing.

3. Preparation of sanitizing solution: Place 3 1/4 fl. oz. of OXINE concentrate into a clean plastic pail or container and add 10 grams (1 tablespoon) of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time for crystals to dissolve completely. To this solution, add five (5) gallons of clean potable water. This will yield a working solution containing 100 ppm available chlorine dioxide.

4. To apply: Fill, flush, immerse, or spray tank, line, equipment or food contact surface with active solution making sure surface area is thoroughly wet for at least one minute. After sanitizing drain tank, line or equipment and allow to air dry. Fresh sanitizing solution should be made up daily or more often if solution becomes diluted or soiled.

To disinfect walls, ceilings and floors.

Directions for Use:

1. Before disinfection, all gross filth must be removed from areas to be disinfected and thoroughly cleaned with a suitable detergent followed by a clean, potable water rinse.

2. Preparation of active disinfecting solution (500 ppm ClO_2): Place 3 1/4 fl. oz. of OXINE

concentrate per gallon of working solution into a clean, plastic pail and add ten (10) grams of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. To this solution, add one (1) gallon of clean, potable water. This will yield a working solution containing 500 ppm of available chlorine dioxide.

3. To apply: Spray disinfectant solution onto surface to be disinfected, using a suitable spraying device and making sure that the area is thoroughly wet for at least ten (10) minutes. Active solutions may be irritating when breathed, therefore, always use an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide when spraying these solutions. After application allow to air dry. Treat as required. Always apply freshly made solutions. Never reuse activated solutions.

To control the buildup of odor and slime forming bacteria in process waters for vegetable rinses and associated tanks, flumes and lines.

Directions for Use:

1. All tanks, flumes and lines etc., should be thoroughly cleaned when possible with a suitable detergent and completely rinsed using clean, potable water prior to treatment.

2. Preparation of solution: Chill tanks or vegetable rinse tanks may be batch loaded at start up with 1/3 fl. oz. (10 ml) OXINE per ten (10) gallons of potable water (5.0 ppm available ClO_2). Make up waters should be treated using a chemical feed pump or injector system and applied at the rate of 1/3 fl. oz. per ten (10) gallons potable water. Make up new OXINE solutions daily.

   Optional activated solution - if heavy use of rinse water is expected or if slime buildup is extreme, an additional activation step may be used in preparation of solution.

3. Preparation of activated solution: Prepare in a well ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. For each ten (10) gallons of rinse water to be used, measure out 1/3 fl. oz. (10 ml) of OXINE and pour into a clean plastic container, pail or drum. To this OXINE amount, add Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity, at the rate of 1/4 teaspoon crystals (1 gram) per 1/3 fl. oz. OXINE. Allow five (5) minutes reaction time for crystals to dissolve. Chill tanks or vegetable rinse tanks may be batch loaded at start up with activated OXINE solution with 1/3 fl. oz. (10 ml) per ten (10) gallons of potable water (5.0 ppm available ClO_2). Make up waters should be treated using a chemical feed pump. In order to insure accurate delivery, a 1 to 10 dilution of the active concentration should

be made and the feed rate of 3 1/3 fl. oz. per ten (10) gallons should be maintained. Make up fresh OXINE solutions daily.

NOTE: Chemical feed pumps and injectors must be chlorine resistant for best operation. Available ClO_2 levels should be confirmed using a Bio-Cide test kit, available from your local OXINE distributor.

4. After treatment the vegetables must be rinsed with potable water.

For use in the preparation of fruits and vegetables to extend freshness and shelf life.

Directions for Use:

1. Before treatment, whole fruits and vegetables should be washed and thoroughly rinsed with clean potable water.

2. Preparation of stock solution: Activate OXINE rinse pak by grasping pak and squeezing firmly to break middle seal. Manipulate pak to mix contents. After five (5) minutes, tear open pak and pour contents into the 1/2 gallon dispenser supplied. Avoid breathing any fumes which may be present. Fill to neck with tap water.

PRE-TREATMENT FOR UNCUT, UNPEELED FRUITS AND VEGETABLES.

3. Preparation of treatment solution: Use five (5) depressions (5 fl. oz.) of the half gallon dispenser solution per gallon of treatment water. This gives a use solution concentration of five (5) ppm.

4. Dip produce in treatment solution for about ten (10) to twenty (20) seconds, then follow with a potable water rinse.

To control the buildup of odor and slime forming bacteria in ice making plants and machinery.

Directions for Use:

1. Ice making machinery should be disassembled and thoroughly cleaned using a suitable detergent followed by a potable water rinse.

2. Preparation and applications of solution: The OXINE solution should be applied to the incoming water line of the ice machine via a chemical feed pump or injector system and

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proportioned at the rate of 1 1/2 fl. oz. per ten (10) gallons potable water (20 ppm available ClO_2).

NOTE: Chemical feed pumps and injectors must be chlorine resistant for best operation. Available ClO_2 levels should be confirmed using a test kit available from Bio-Cide International, Inc.

To control odor and slime forming bacteria build-up in commercial water filtration systems, sand beds, gravel beds and charcoal filters, with accessible service hatches.

Directions for Use:

1. Drain all existing water from sand and carbon filters and rinse once with clean, potable water. Fill sand filter with potable water and adjust pH of water to 6.0 using citric acid or equivalent pH adjuster.

2. To prepare solution: Measure out two (2) fl. oz. OXINE concentrate for each gallon of filter system volume (300 ppm available ClO_2) and add to the sand filter through access hatch. Fill system with clean, potable water and circulate system 30 minutes. Allow system to soak two (2) to three (3) hours. After treatment, drain system and rinse with clean, potable water until residue is no longer detectable using the Bio-Cide test kit and when pH is normal.

To control mold and mildew, odor and slime forming bacteria on walls, floors, and ceilings.

Directions for Use:

1. Before treatment, all soil and gross filth must be removed from areas to be treated and cleaned with detergent followed by a potable water rinse.

2. Preparation of solution: Place 6 1/2 fl. oz. of OXINE concentrate per gallon of working solution (1,000 ppm available ClO_2) into a clean, plastic pail or drum and dilute with clean, potable water.

3. To apply: spray solutions onto walls, floors, and ceilings using a suitable spraying device and making sure all surface areas are damp. Avoid breathing solution mist by use of an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide. Avoid contact with food or food contact surfaces. Allow to air dry.

4. Repeat application as needed.

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To control the build-up of odor and slime forming bacteria in stainless steel transfer lines and on-line equipment such as hydrocoolers, pasteurizers and the like overnight and over weekends.

Directions for Use:

1. Clean equipment or line thoroughly using a suitable detergent followed by a clean, potable water rinse before treatment.

2. Preparation and application of solution: For each ten (10) gallons of volume in lines and/or equipment, add 1 1/4 fl. oz. of OXINE (20 ppm available ClO_2) to potable make up water. Mix and fill lines and equipment overnight. Drain and allow to air dry just prior to next run start-up.

For use as a lube additive to control bacterial slime and odor on moving conveyors and chains in food processing facilities.

Directions for Use:

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

1. Prior to application of the lube/Oxine mixture all conveyors, lube lines, spray nozzle heads, conveyor surfaces, and other associated structures should be thoroughly cleaned and sanitized.

2. Oxine should be added to the water dilution step of the lube system just prior to its injection into the lube distribution system. Addition of the Oxine into the lube/water mixture should be at the rate of 0.64 fl. Oz. to 1.28 fl. oz. per 10 gallons of lube mixture. This will result in a final concentration of between 10 and 20 ppm of Oxine in the lube solution.

3. For best results use with natural (fatty acid, soap based) lubricant products. For advice on lube compatibilities contact your BCI distributor.

IN LABORATORIES, HOSPITALS, MORGUES, INSTITUTIONS

This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or (2) contacts intact mucous membranes but

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which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. This product may be used to preclean or decontaminate critical or semi-critical medical devices prior to sterilization or high level disinfection.

To disinfect non-porous, hard surfaces such as tile floors, walls and ceilings and stainless steel cold rooms and walk-in incubators.

Directions for Use:

1. Clean all surfaces thoroughly with a suitable detergent and rinse with water prior to disinfection.

2. Preparation of active disinfecting solution: Place 3 1/4 fl. oz. of OXINE concentrate per gallon of working solution (500 ppm available chlorine dioxide) into a clean, plastic pail and add ten (10) grams of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. To this solution add one (1) gallon of clean, potable water. This will yield a working solution containing 500 ppm available chlorine dioxide.

3. To apply: Activated solutions may be sprayed, mopped or sponged onto surfaces to be disinfected. All surfaces must be thoroughly wetted for at least ten (10) minutes. When spraying disinfectant solutions, use an appropriate spraying device. Active solutions may be irritating when breathed, therefore, always use an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide when spraying these solutions. After application, allow to air dry. Treat as required. Always apply freshly made solutions. Never reuse activated solutions.

To disinfect bench tops, biological hoods, incubators, stainless steel equipment and instruments.

Directions for Use:

1. Clean all surfaces thoroughly with a suitable detergent and rinse with water prior to disinfection.

2. Preparation of active disinfectant solution: Place 25 ml of OXINE concentrate for each liter of working solution into a clean, plastic pail or glass beaker and add 2.5 grams of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well

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ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. Then add activated OXINE solution to one (1) liter of clean, potable water. This will yield a working solution containing 500 ppm available chlorine dioxide.

3. To apply: Activated solutions may be squirted directly onto surfaces from a plastic squeeze bottle or may be used as a soak solution. All contact surfaces must be thoroughly damp for at least ten (10) minutes. Allow to air dry. Activated solutions of OXINE, stored in plastic squirt bottles, may be held up to one (1) week before replacement with fresh solution. Soak solutions of OXINE should be changed daily.

To disinfect water bath incubators.

Directions for Use:

1. Prior to disinfection, thoroughly clean the reservoir with a suitable detergent and rinse with clean water.

2. Preparation of active solution: Place 1/3 fl. oz. of OXINE concentrate per gallon of working solution or 2.5 ml OXINE per liter of working solution into a clean glass or plastic container (50 ppm available chlorine dioxide). Add one (1) gram of Bio-Cide Activator Crystals per each 1/3 fl. oz. OXINE or 1/4 gram for each 2.5 ml OXINE or use food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. Add activated OXINE solution to one (1) gallon of clean, potable water or 2.5 mls of activated OXINE per liter of clean, potable water. This will yield a working solution containing 50 ppm available chlorine dioxide.

3. To apply: Activated solution should be poured into waterbath reservoir and allowed to stand one (1) hour at room temperature. Drain reservoir and fill with fresh water.

To control odor and slime forming bacteria in waterbath incubators.

Directions for Use:

1. When using OXINE in waterbath incubators, always begin with a freshly cleaned and disinfected reservoir.

2. To apply: Fill waterbath with clean, potable water to near capacity. For each gallon of

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water add 1/3 fl. oz. OXINE (50 ppm available ClO_2) or 2.5 ml OXINE per liter of water. When water becomes cloudy, discard water and repeat procedure.

To control odors resulting from the sterilization of spent biologicals in steam autoclaves.

Directions for Use:

1. To reduce autoclave odors of used biologicals, OXINE should be sprayed or poured directly into the stainless steel autoclave buckets.

2. Preparation of solution: Place 6 1/2 fl. oz. of OXINE concentrate per gallon of working solutions (1,000 ppm available ClO_2) or 50.0 ml OXINE per one (1) liter of water into a clean glass or plastic container. Dilute concentrate to one (1) gallon clean, potable water per each 6 1/2 fl. oz. or to one (1) liter per each 50.0 ml.

3. To apply: Spray or pour OXINE solution into or onto the autoclave buckets just prior to autoclaving.

To deodorize animal holding rooms, sick rooms, morgues and work rooms.

Directions for Use:

1. Rooms to be deodorized should be in a clean condition prior to OXINE application.

2. Preparation of solution: Place 6 1/2 fl. oz. OXINE concentrate per one (1) gallon of working solution or 50 ml per one (1) liter working solution (1,000 ppm available chlorine dioxide) into a clean glass or plastic container. Dilute concentrate to one (1) gallon clean, potable water for each 6 1/2 fl. oz. or to one (1) liter for each 50 ml OXINE.

3. To apply: Spray solution using a suitable spraying device onto walls, ceilings and floors; lightly dampening all surfaces. Avoid breathing mist of solutions by using an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide. Allow to air dry, then ventilate the area. Treat as required.

For use in Dental Offices and Laboratories as a dental pumice disinfectant.

Directions for Use:

1. Prepare solution in a well ventilated area. To make one (1) liter of solution, pour 25.0 ml (approximately 1.0 fl. oz.) of OXINE concentrate into a clean glass or plastic

container. To this, add 2 1/2 grams (1/2 teaspoon) of Bio-Cide Activator Crystals (included) and mix slightly, allowing 5 minutes reaction time and for crystals to dissolve completely. Avoid breathing any fumes which may be produced during activation. Once solution has yellowed, dilute to one (1) liter with clean potable water, for a working solution of 500 ppm available ClO_2.

2. To apply: The working solution can be conveniently contained in a one (1) liter plastic "squeeze" bottle for up to one (1) week. Apply to dry pumice powder exactly as water to produce the pumice slurry. Apply additional working solution as needed to reconstitute dried out slurry to appropriate viscosity. OXINE will keep pumice slurry thoroughly disinfected. New OXINE solution should be made up fresh weekly.

IN ANIMAL REARING AND CONFINEMENT FACILITIES

To disinfect commercial animal confinement facilities such as poultry houses, swine pens, calf barns and kennels.

Directions for Use:

1. Remove all animals and feed from premises, vehicles, enclosures, coops and crates.

2. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other facilities and fixtures occupied or traversed by animals.

3. Empty all troughs, racks and other feeding and watering appliances.

4. Thoroughly clean all surfaces with soap or detergent and rinse with water.

5. Preparation of active disinfectant solution: Place 3 1/4 fl. oz. OXINE concentrate per gallon of working solution (500 ppm available chlorine dioxide) into a clean, plastic pail and add ten (10) grams of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. To this solution, add one (1) gallon of clean, potable water. This will yield a working solution containing 500 ppm of available chlorine dioxide.

6. To apply: Using commercial sprayer, saturate all surfaces with the activated OXINE solution for a period of ten (10) minutes. Active solutions may be irritating when breathed, therefore, always use an applicable NIOSH/MSHA approved respirator

appropriate for chlorine dioxide when spraying these solutions. Immerse all halters, ropes and other types of equipment used in handling and restraining animals as well as forks, shovels and scrapers used for removing litter and manure. After treatment, ventilate buildings, coops or other enclosed spaces and allow to air dry. Repopulate when solution has dried. Thoroughly scrub treated feed racks, troughs, automatic feeders, fountains and waterers with soap or detergent and rinse with potable water before use.

To control the build-up of odor and slime forming bacteria in animal confinement areas.

Directions for Use:

1. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes, cases and other facilities and fixtures occupied or traversed by animals. Thoroughly clean all surfaces with soap or detergent and rinse with clean water.

2. Preparation of solution: Place 6 1/2 fl. oz. OXINE concentrate per gallon of working solution (1,000 ppm available ClO_2) into a clean, plastic pail. Dilute concentrate with one (1) gallon clean, potable water for each 6 1/2 fl. oz. OXINE.

3. To apply: Using a commercial sprayer, saturate all surfaces with the OXINE solution. When spraying OXINE solutions, always use an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide to avoid breathing mist.

To control animal odors on pets and in litter boxes, carpets and concrete floors.

Directions for Use:

1. For litter boxes: Wash out litter boxes with suitable detergent and rinse with clean, potable water. Soak overnight in solution of one (1) oz. OXINE per one (1) quart of water (650 ppm available chlorine dioxide). Add litter, sprinkle surface liberally with OXINE solution.

2. For controlling odors in carpets: Add 3 oz. OXINE per gallon (500 ppm available chlorine dioxide) of either rug shampoo mix or 3 oz. OXINE per each gallon of rinse water. Shampoo carpet. Allow to air dry. CAUTION: OXINE may bleach some carpets and fabrics, especially if applied on top of another chemical agent. Do not apply until a sample test has been tried and observed for at least 24 hours.

3. For concrete floors: Clean floor thoroughly using a suitable detergent; rinse with clean

water. Prepare solution by adding 8 oz. (1250 ppm available chlorine dioxide) OXINE per gallon of water. Mop or spray solution liberally onto floor. Allow to air dry.

4. For animal baths: Wash animal well with appropriate pet shampoo; rinse with clean water. Prepare solution by adding 1/4 oz. OXINE (80 ppm available chlorine dioxide) per gallon of water. Rinse animal thoroughly with prepared solution. Allow to air dry. Avoid direct contact with animal's eyes, nose and ears.

5. For treating animal odors with high levels of ammonia: Wash area thoroughly with suitable detergent and rinse with clean water. Preparation of solution: For each gallon of solution, place 4 oz. OXINE into a clean, plastic container. To this concentrate add 1 tablespoon household bleach and allow to react for five (5) minutes. Dilute with 1 gallon clean, potable water. Apply by mopping or spraying solution liberally onto area. Allow to air dry. Additional applications may be necessary.

IN WATER TREATMENT AND WATER STORAGE SYSTEMS

To disinfect water storage systems aboard aircraft, boats, RV's, off-shore oil rigs, etc.

Directions for Use:

1. Prior to disinfection, tanks should be cleaned using a suitable detergent and thoroughly flush with clean, potable water. There is both a ten (10) minute and a one (1) hour disinfection procedure to choose from.

2. Preparation of active solution: For ten (10) minute procedure: Place 3 1/4 fl. oz. of OXINE concentrate per gallon of working solution (500 ppm available chlorine dioxide) into a clean plastic container and add 10 grams of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. Pour activated solution into tank and dilute with clean potable water, filling the tank completely, at the rate of one gallon for each 3 1/4 fl. oz. OXINE. Bleed air out of lines and allow to stand at least ten (10) minutes. Drain tank and lines and flush with potable water. For one (1) hour procedure:

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Place 3 1/4 fl. oz. of OXINE concentrate per ten (10) gallons of working solution (50 ppm available chlorine dioxide) into a clean plastic container and add 10 grams of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. Pour activated solution into tank and dilute with clean, potable water, filling the tank completely, at the rate of ten (10) gallons for each 3 1/4 fl. oz. OXINE. Bleed air out of lines and allow to stand at least one (1) hour. Drain tank and lines then fill with potable water.

To control build-up of slime and odor causing bacteria and enhance the taste of stored potable water.

Directions for Use:

1. Prior to treatment of potable water, thoroughly clean and disinfect the water storage system to ensure a sanitary condition. Thoroughly rinse with clean, potable water.

2. Potable water should be treated at a rate of one (1) fl. oz. OXINE per 30 gallons potable water (5 ppm available ClO_2) and may be injected or batch treated.

3. Water storage tank should be sufficiently sealed to prevent outside contamination and direct sunlight.

4. Using a Bio-Cide test kit, confirm the chemical level to be 5 ppm and check to see this level does not fall below 1 ppm.

To help remove off odors and tastes from municipal well waters.

Directions for Use:

1. OXINE should be injected into the incoming water main using a chemical proportioning pump or injector at a rate of 1.0 fl. oz. OXINE per 150 gallons water (1.0 ppm available ClO_2).

2. Confirm pump or injector accuracy using a Bio-Cide test kit and adjust accordingly.

3. OXINE levels should be checked weekly.

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IN INDUSTRIAL APPLICATIONS

For use as a slimicide in pulp and paper whitewater systems

Directions for Use:

1. For initial start-up or for severe slime contamination Oxine should be prepared by the addition of eight ounces of citric acid activator per 50 gallons of Oxine or by addition of other suitable acid to adjust the Oxine solution to approximately pH 7.0.

2. The activated Oxine solution should then be proportioned into the whitewater system by means of a suitable metering pump at a continuous rate to produce an in-stream concentration of 1.25 - 5.0 ppm. This concentration is obtained by proportioning the Oxine into the system at a rate of 0.8 to 3.2 fluid ounces per 100 gallons of process water. The system should be monitored by use of a Bio-Cide International, Inc. Test Kit, or other suitable means, and feed rate adjustments made accordingly. After slime control is established the Oxine feed rates may be lowered to maintain the desired level of slime control..

For enclosed and recirculating cooling water systems

Directions for Use:

1 Severely fouled systems should be cleaned prior to treatment.

2 For initial startup or heavy microbial contamination Oxine should be added to the cooling water system at a rate of one gallon of Oxine per 4,000 gallons of system water. This is equivalent to 5.0 ppm as available chlorine dioxide. Dosage should be repeated daily until microbial control is achieved.

3 When microbial contamination is under control the concentration and frequency of treatment may be reduced to levels adequate to maintain the desired level of microbial control.

To inhibit the growth of slime and odor causing bacteria in water base cutting oils.

Directions for Use:

1. OXINE may be added directly to water base oils at the rate of 1/3 to 1 1/3 fl. oz. OXINE per gallon of oil. Mix well.

To sanitize hard surfaces associated with ventilation and air conditioning duct work.

Directions for Use:

1. Prior to sanitization, duct work should be mechanically cleaned, vacuumed or blown free of dirt, dust, mold and debris, using a commercially available duct cleaning system or service.

2. Preparation of sanitizer solution: Place 3 1/4 fl. oz. of OXINE concentrate into a clean, plastic pail and add 10 grams (2 1/2 teaspoons) of Bio-Cide Activator Crystals or food grade citric acid of no less than 99% purity. (Bio-Cide Activator Crystals are available through all Bio-Cide distributors.) Prepare in well ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time and for crystals to dissolve completely. To this solution, add one (1) gallon of clean, potable water. This will yield a working solution containing 500 ppm of available chlorine dioxide.

3. To apply: Spray or fog sanitizer solution into duct work using a suitable spraying or fogging device. Make sure that the surfaces are thoroughly wet for at least ten (10) minutes. During application, area must be closed as tightly as possible and sealed. After spraying or fogging, the area should be opened and aired for one (1) hour before repopulating. Active solutions may be irritating when breathed, therefore, always use an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide when fogging or spraying these solutions. After application, allow to air dry. Treat as required. Always apply freshly made solutions.

To deodorize ventilation and air conditioning duct work systems.

Directions for Use:

1. Prior to deodorization, duct work should be mechanically cleaned, vacuumed or blown free of dirt, dust, mold and debris, using a commercially available duct cleaning system or service.

2. Preparation of deodorizing solution: Place 6 1/2 fl. oz. OXINE concentrate per gallon of working solution, into clean plastic container and dilute with clean water to desired

volume.

3. To remove musty odors, spray or fog deodorizer thoroughly into duct work or ventilation system. During application, area must be closed as tightly as possible and sealed. After spraying or fogging, the area should be opened and aired for one (1) hour before repopulating. Allow to air dry prior to operating system. Treat as required. For persistent odors, system may require sanitation.

IN MUSHROOM FACILITIES, SUCH AS MUSHROOM PRODUCTION, SPAWN PRODUCTION, MUSHROOM PROCESSING, AND CANNERY OPERATIONS

As a terminal sanitizing rinse for stainless steel tanks, transfer lines, on-line equipment, picking baskets, picking utensils and other food contact surfaces.

Directions for Use:

1. All gross food particles and soil should be removed prior to sanitizing by use of a pre-flush, pre-scrape or pre-soak treatment.

2. Clean picking baskets, line equipment or other surface thoroughly using a suitable detergent and rinse with clean potable water before sanitizing.

3. Preparation of sanitizing solution: Place 3 1/4 fl. oz. of OXINE concentrate into a clean plastic pail or drum and add ten (10) grams of OXINE Activator Crystals or food grade citric acid of no less than 99% purity. Prepare in well ventilated area. Avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time for crystals to dissolve completely. To this solution, add five (5) gallons of clean potable water. This will yield a working solution containing 100 ppm available chlorine dioxide.

4. To apply: Flush picking baskets, line equipment or other food contact surface with active solution making sure surface area is thoroughly wet for at least one (1) minute. After sanitizing drain baskets or equipment and allow to air dry. Treat after each use or production run. Discard solution after each use.

To disinfect walls, ceilings, and floors.

Directions for Use:

1. Before disinfection, all gross filth must be removed from areas to be disinfected and thoroughly cleaned with a suitable detergent followed by a clean, potable water rinse.

2. Preparation of active disinfecting solution: Place 3 1/4 fl. oz. of OXINE concentrate per gallon of working solution (500 ppm available chlorine dioxide) into a clean, plastic pail and add 10 grams of OXINE Activator Crystals or food grade citric acid of no less than 99% purity. Prepare in well ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. Allow five (5) minutes reaction time for crystals to dissolve completely. To this solution, add one gallon of clean, potable water. This will yield a working solution containing 500 ppm of available chlorine dioxide.

3. To apply: Spray disinfectant solution onto surface using a suitable spraying device and making sure that the area is thoroughly wet for at least ten (10) minutes. Active solutions may be irritating when breathed, therefore, always use an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide when spraying these solutions. After application, allow to air dry. Treat as required. Always apply freshly made solutions. Never reuse activated solutions.

To control mold and slime forming bacteria on walls, floors, ceilings, and post-crop mushroom growing surfaces.

Directions for Use:

1. Before treatment, all soil and gross filth must be removed from areas to be treated and cleaned with detergent followed by a potable water rinse.

2. Preparation of solution: Place 6 1/2 fl. oz. of OXINE concentrate per gallon of working solution (1,000 ppm available ClO_2) into a clean, plastic pail or drum and dilute with clean, potable water.

3. To apply: Drench, spray or fog solution onto walls, floors, ceilings and post-crop mushroom growing surface using a suitable watering, spraying or fogging device and making sure all surface areas are wet. During application, area must be closed as tightly as possible and sealed. After spraying or fogging, the area should be opened and aired for one (1) hour before repopulating. Avoid breathing solution mist by use of an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide. Avoid contact with food or food contact surfaces. Allow to air dry.

4. Repeat application as needed.

IN POTATO FACILITIES SUCH AS PROCESSING/PACKAGING

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OPERATIONS, STORAGE SHEDS, STORAGE CELLARS, AND SEED PRODUCTION FACILITIES.

As a terminal sanitizing rinse for bins, tanks, flume lines, on-line equipment, conveyors, seed cutters, and other potato handling equipment.

Directions for Use:

1. All gross food particles and soil should be removed prior to sanitizing by use of a pre-flush, pre-scrape or pre-soak treatment.

2. Clean tank, line, or surface thoroughly using a suitable detergent and rinse with clean potable water before sanitizing.

3. Preparation of sanitizing solution: Place 3 1/4 fl. oz. of Oxine® concentrate into a clean plastic pail or container and add 10 grams (1 tablespoon) of food grade citric acid of no less than 99% purity. Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while citric acid is dissolving. Allow five (5) minutes reaction time for citric acid to dissolve completely. To this solution, add five (5) gallons of clean potable water. This will yield a working solution containing 100 ppm available chlorine dioxide.

4. To apply: Fill, flush, immerse, or spray tank, line, equipment or food contact surface with active solution making sure surface area is thoroughly wet for at least one minute. After sanitizing drain tank, line or equipment allow to air dry. Fresh sanitizing solution should be made up daily or more often if solution becomes diluted or soiled.

To disinfect walls, ceilings, floors, planting and harvesting equipment, and truck beds.

Directions for use:

1. Before disinfection, all gross filth must be removed from areas to be disinfected and thoroughly cleaned with a suitable detergent followed by a clean, potable water rinse.

2. Preparation of active disinfecting solution (500 ppm ClO_2): Place 3 1/4 fl. oz. of Oxine® concentrate per gallon of working solution into a clean, plastic pail and add ten (10) grams of food grade citric acid of no less than 99% purity. Prepare in a well ventilated area, avoid breathing any fumes which may be produced while citric acid is dissolving. Allow five (5) minutes reaction time for citric acid to dissolve completely. To this solution, add one (1) gallon of clean, potable water. This will yield a working solution containing 500 ppm of available chlorine dioxide.

3. To apply: Spray disinfectant solution onto surface to be disinfected using a suitable

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spraying device and making sure that the area is thoroughly wet for at least ten (10) minutes. Active solutions may be irritating when breathed, therefore, always use an applicable NIOSH/MSHA approved respirator appropriate for chlorine dioxide when spraying these solutions. After application allow to air dry. Treat as required. Always apply freshly made solutions. Never reuse activated solutions.

To control the buildup of odor and slime forming bacteria in process waters for potato rinses, associated tanks, flumes and lines.

Directions for Use:

1. All tanks, flumes and lines etc., should be thoroughly cleaned when possible with a suitable detergent and completely rinsed using clean, potable water prior to treatment.

2. Preparation of solution: Chill tanks or vegetable rinse tanks may be batch loaded at start up with 1/3 fl. oz. (10 ml) Oxine® per ten (10) gallons of potable water (5.0 ppm available ClO_2). Make up waters should be treated using a chemical feed pump or injector system and applied at the rate of 1/3 fl. oz. per ten (10) gallons potable water. Make up new Oxine® solutions daily.

   Optional activated solution - if heavy use of rinse water is expected or if slime build up is extreme, an additional activation step may be used in preparation of solution.

3. Preparation of activated solution: Prepare in a well ventilated area, avoid breathing any fumes which may be produced while citric acid is dissolving. For each ten (10) gallons of rinse water to be used, measure out 1/3 fl. oz. (10 ml) of Oxine® and pour into a clean plastic container, pail or drum. To this Oxine® amount, add food grade citric acid of no less than 99% purity, at the rate of 1/4 teaspoon crystals (1 gram) per 1/3 fl. oz. Oxine®. Allow five (5) minutes reaction time for the citric acid to dissolve. Chill tanks or vegetable rinse tanks may be batch loaded at start up with activated Oxine® solution with 1/3 fl. oz. (10 ml) per ten (10) gallons of potable water (5.0 ppm available ClO_2). Make-up waters should be treated using a chemical feed pump. In order to insure accurate delivery, a 1 to 10 dilution of the active concentration should be made and the feed rate of 3 1/3 fl. oz. per ten (10) gallons should be maintained. Make up fresh Oxine® solutions daily.

   NOTE: Chemical feed pumps and injectors must be chlorine resistant for best operation. Available ClO_2 levels should be confirmed using a Bio-Cide test kit available from your local Oxine® distributor.

4. After treatment, the potatoes must be rinsed with potable water.

STORAGE AND DISPOSAL

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Storage: Store in a cool dark area in original container. Avoid storage in direct sunlight. In case of spill, flood with water before discarding to drain. Do not contaminate water, food or feed by storage or disposal.

Container Disposal: Triple rinse. Then offer for recycling or reconditioning; 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.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

STATEMENT OF PRACTICAL TREATMENT

If Swallowed: Drink promptly a large quantity of water. Do not induce vomiting. Avoid alcohol. Get medical attention.

If In Eyes: Flush with plenty of water for 15 minutes. Get medical attention.

If On Skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

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