

CARNEBON 200

2% AQUEOUS STABILIZED CHLORINE DIOXIDE
FOR INSTITUTIONAL OR INDUSTRIAL USE ONLY

Active Ingredient:	
Chlorine Dioxide.....	2%
Inert Ingredients.....	98%
Total.....	100%

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS

E.P.A. REG. NO. 9150-3
E.P.A. EST. NO. 9150-R1-01

NET WT. _____ gal.

INTERNATIONAL DIOXCIDE INC.
CLARK, N.J. 07066

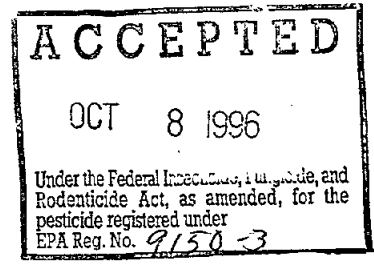
PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Avoid direct contact with skin, eyes or clothing.

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.

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



ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public 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.

CHEMICAL AND PHYSICAL HAZARDS

Stabilized Chlorine Dioxide is a strong oxidizing agent. Contamination with other materials such as acids, chlorine, organic chemicals, etc., may cause a chemical reaction resulting in evolution of chlorine dioxide gases and heat. Explosion and/or fire could result. Chlorine dioxide is a poisonous explosive gas. Keep all chemical and foreign materials away from this solution.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not store with easily oxidizable materials, acids, reducers, and combustible material. Avoid heat or freezing conditions. Store upright and do not stack drums over 2 high on pallets or partially filled drums. Use of a drum pump is suggested. Keep drum tightly closed when not withdrawing liquid. In case of spills, dilute with large quantities of water. Do not allow liquid to dry because this could present a fire hazard. Store only in the original container and take care to prevent cross contamination with other pesticides, fertilizer, food and feed.

EMERGENCY HANDLING: In case of contamination or decomposition, do not reseal container. Isolate in an open, well ventilated area. Flood with large volumes of water. Cool unopened drums in vicinity by water spray.

PESTICIDE DISPOSAL: Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). 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.

NOTICE: Seller expressly warrants that the product conforms to its chemical description. There are no warranties associated with the sale of this product either express or implied, including, but not limited to the warranties of fitness for a particular purpose or use.

DIRECTIONS FOR USE

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

TO CONTROL ODOR AND SLIME FORMING BACTERIA IN COOLING AND WARMING WATERS SUCH AS CANNING RETORT AND PASTEURIZER COOLING WATER, USED TO DECREASE OR INCREASE PACKAGED PRODUCT TEMPERATURE BY IMMERSION IN OR BY SPRAYING WITH THE TREATED PROCESS WATERS:

- 1) All tanks, tunnels, conveyor chains, heat exchanges, heat exchange towers, lines, spray bars, and nozzles should be thoroughly cleaned when possible, and completely rinsed using clean, potable water prior to treatment.
- 2) Preparation of solution: Water systems including the cooling or warming tanks or spray systems, towers, lines, and all water containing parts of the system may be batch loaded at start up with one quart (0.95 liters) Carnebon 200 per one thousand (1000) gallons of potable water (5.0 ppm available ClO_2). To maintain the 5.0 ppm available ClO_2 in the water system a timed or electronically controlled chemical feed pump or injector system can be used for additions to the system or for treating the make-up water. Make up new Carnebon 200 solutions daily.

Optional activated solution: If heavy use of cooling or warming water or introduction of additional bacteria loads is expected or if slime buildup is heavy, 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 one thousand (1000) gallons of system water to be treated, measure one quart (0.95 liters) of Carnebon 200 and pour into a clean plastic container, pail, or drum. To this Carnebon 200 amount, add food grade citric acid of no less than 99% purity, at the rate of 3.3 ounces (95 grams) crystals per quart (0.95 liters) of Carnebon 200. Allow five (5) minutes reaction time for crystals to dissolve. Cooling or warming water systems may be batch loaded at start up using one quart (0.95 liters) of the prepared solution per one thousand (1000) gallons of potable water (5.0 ppm available ClO_2). Batch or timed additions of the prepared solution can be made or an electronically controlled chemical feed pump or injector system can be used for additions of the prepared solution to the process water to maintain 5.0 ppm available ClO_2 . Make up new Carnebon 200 solutions daily.

Note: Chemical feed pumps and injectors must be chlorine resistant for best operation. Available ClO_2 levels should be confirmed using an IDI chlorine dioxide test kit.

FOR USE IN DENTAL OFFICES AND LABORATORIES AS A DENTAL PUMICE DISINFECTANT.

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 Carnebon 200 concentrate into a clean glass or plastic container. To this, add 2 ½ grams (1/2 teaspoon) of citric acid 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 ClO₂.
2. To apply: The working solution can be conveniently contained in a one (1) liter plastic "squeeze" bottle for up to five days. 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. Carnebon 200 solution should be made up fresh, preferably on Monday, and discarded on Friday or 5 days after preparation.

TO CONTROL THE BUILDUP OF ODOR AND SLIME FORMING BACTERIA IN PROCESS WATERS FOR VEGETABLE RINSES AND ASSOCIATED TANKS, FLUMES, AND LINES.

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) Carnebon 200 per ten (10) gallons of potable water (5.0 ppm available ClO₂). Make up waters should be treated using a chemical feed pump or injector system and applied at the rate of 1/3 fl. oz.. ten (10) gallons potable water. Make up new Carnebon 200 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 10 gallons of rinse water to be used measure 1/3 oz.. (10 ml) of Carnebon 200 and pour into a clean plastic container containing 1 gallon of water. Activate the solution by:
 - 1) Adding 0.002 grams of Activator C or
 - 2) Adding 2.2 grams of Activator K or
 - 3) Adjusting the pH to 4.0 with acetic acid, citric acid, phosphoric acid, sulfuric acid or hydrochloric acid.

Allow this solution to stand for 15 minutes and then add to 9 gallons of water to give 5 ppm chlorine dioxide. Chill tanks or vegetable rinse tanks may be batch loaded at start up with activated Carnebon 200 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. Carnebon 200 solutions daily.

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

FOR USE IN THE PREPARATION OF FRUITS AND VEGETABLES TO EXTEND FRESHNESS AND SHELF LIFE.

1. Before treatment, whole fruits and vegetables should be washed and thoroughly rinsed with clean, potable water.
2. In a 1 gallon container, add 1/3 fl. oz. (10 ml) of Carnebon 200 and add 0.002 grams of Activator C or adjust the pH to 4.0 with vinegar. Allow to stand for 15 minutes then add to 9 gallons of water.

Pretreatment for uncut, unpeeled fruits and vegetables.

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

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.

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 Carnebon 200 (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 start-up.

IN LABORATORIES, HOSPITALS, MORGUES, INSTITUTIONS

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

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 Carnebon 200 concentrate in one gallon of water into a clean plastic pail, add 1.2 grams of Activator-C. This will yield a working solution containing 500 ppm available chlorine dioxide. Prepare in a well ventilated area, avoid breathing any fumes which may be produced during activation. Allow 15 minutes reaction time and for activator to dissolve completely. As an alternate activation method, adjust the pH of the diluted Carnebon 200 to 4.0 with acetic, citric, phosphoric, sulfuric or hydrochloric acid, or add 8.6 grams of Activator K.
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.

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 Carnebon 200 concentrate into a clean, plastic pail and add 1 liter of potable water and 0.3 grams of Activator C. Prepare in a well ventilated area, avoid breathing any fumes which may be produced during activation. Allow 15 minutes reaction time and for activator to dissolve completely. This will yield a working solution containing 500 ppm available chlorine dioxide. As an alternate activation method, adjust the pH to 4.0 with acetic, citric, phosphoric, sulfuric or hydrochloric acid, or add 2.4 grams of Activator K.
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 Carnebon 200, stored in plastic squirt bottles, may be held up to one (1) week before replacement with fresh solution. Soak solutions of Carnebon 200 should be changed daily.

To disinfect water bath incubators.

1. Prior to disinfection, thoroughly clean the reservoir with a suitable detergent and rinse with clean water.
2. Preparation of active disinfectant solution: Place 1/3 fl. oz. of Carnebon 200 concentrate into a clean glass or plastic container, add one (1) gallon of clean, potable water and add 0.3 grams of Activator-C (50 ppm available chlorine dioxide). Prepare in a well ventilated area, avoid breathing any fumes which may be produced during activation. Allow 15 minutes reaction time and for activator to dissolve completely. As an alternate activation method, adjust the pH of the diluted Carnebon 200 to 4.0 with acetic, citric, phosphoric, sulfuric or hydrochloric acid, or add 8.6 grams of Activator K.
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.

1. When using Carnebon 200 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 water add 1/3 oz. Carnebon 200 (50 ppm available ClO_2) or 2.5 ml Carnebon 200 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.

1. To reduce autoclave odors of used biologicals, Carnebon 200 should be sprayed or poured directly into the stainless steel autoclave buckets.
2. Preparation of solution: Place 6-1/2 fl. oz. of Carnebon 200 concentration per gallon of working solutions (1,000 ppm available ClO_2) or 50.0 ml Carnebon 200 per one (1) liter of water into a clean glass or plastic container and mix. Dilute concentrate to one (1) gallon clean, potable water per each 6-1/2 oz. or to one (1) liter per each 50.0 ml.
3. To apply: Spray or pour Carnebon 200 solution into or onto the autoclave buckets just prior to autoclaving.

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

1. Rooms to be deodorized should be in a clean condition prior to Carnebon 200 application.
2. Preparation of solution: Place 6-1/2 fl. oz. Carnebon 200 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 Carnebon 200.
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.

IN ANIMAL REARING & CONFINEMENT FACILITIES**To disinfect commercial animal confinement facilities such as poultry houses, swine pens, calf barns and kennels and for use in laboratory animal breeding and research quarters for controlling cross-contamination of microorganisms infectious to these animals and humans from treated surfaces.**

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 and detergent and rinse with water.
5. Preparation of active disinfectant solution: Place 3-1/4 fl. oz. Carnebon 200 concentrate into a clean, plastic pail, add one (1) gallon of clean potable water and 1.2 grams of Activator-C. Prepare in a well ventilated area. Avoid breathing any fumes which may be produced and allow fifteen (15) minutes reaction time and for activator to dissolve completely. This will yield a working solution containing 500 ppm of available chlorine dioxide. As an alternate activation method, adjust the pH to 4.0 with acetic, citric, phosphoric, sulfuric or hydrochloric acid, or add 8.6 grams of Activator K.
6. To apply: Using commercial sprayer, saturate all surfaces with the activated Carnebon 200 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.
7. After treatment, ventilate buildings, coops or other enclosed spaces and allow to air dry. Repopulate when solution has dried.
8. Thoroughly scrub treated feed racks, troughs, automatic feeders, fountains and waterers with soap detergent and rinse with potable water before use.

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

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.. Carnebon 200 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.. Carnebon 200.
3. To apply: Using a commercial sprayer, saturate all surfaces with the Carnebon 200 solution. When spraying Carnebon 200 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.

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.. Carnebon 200 per 1.0 quart of water (625 ppm available chlorine dioxide). Add litter, sprinkle surface liberally with Carnebon 200 solution.
2. For controlling odors in carpets: Add 3 oz.. Carnebon 200 per gallon (500 ppm available chlorine dioxide) of either rug shampoo mix or 3-1/4 oz.. Carnebon 200 per each gallon of rinse water. Shampoo carpets. Allow to air dry. CAUTION: Carnebon 200 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) Carnebon 200 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 0.625 oz.. Carnebon 200 (100 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 4.0 oz.. Carnebon 200 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, offshore oil rigs, etc.

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 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 Carnebon 200 concentrate per gallon of working solution (500 ppm available chlorine dioxide) into a clean plastic container dilute with clean potable water and add 1.2 grams of Activator-C. Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while activator is dissolving. Allow fifteen (15) minutes reaction time and for activator to dissolve completely. As an alternate activation method, adjust the pH to 4.0 with acetic, citric, phosphoric sulfuric or hydrochloric acid, or add 8.6 grams of Activator K. Pour activated solution into tank, filling the tank completely, at the rate of one gallon for each 3-1/4 fl. oz. Carnebon 200. 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: Place 3-1/4 fl. oz. of Carnebon 200 concentrate and ten (10) gallons of water (50 ppm available chlorine dioxide) into a clean plastic container and add 1.2 grams of Activator-C. Prepare in a well ventilated area. Avoid breathing any fumes which may be produced while activator is dissolving. Allow fifteen (15) minutes reaction time for activator to dissolve completely. As an alternate activation method, adjust the pH to 4.0 with acetic, citric, phosphoric sulfuric or hydrochloric acid, or add 8.6 grams of Activator K. 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. Carnebon 200. 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.

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. Carnebon 200 per 30 gallons potable water (5ppm available ClO₂) and may be injected or batch treated.
3. Water storage tank should be sufficiently sealed to prevent outside contamination and direct sunlight.
4. Using an IDI 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.

1. Carnebon 200 should be injected into the incoming water main using a chemical proportioning pump or injector at a rate of 1.0 fl. oz.. Carnebon 200 per 150 gallons water (1.0 ppm available ClO₂).
2. Confirm pump or injector accuracy using an IDI test kit and adjust accordingly.
3. Carnebon 200 levels should be checked weekly.

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.**

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 Carnebon 200 concentrate into a clean plastic pail or drum, add five (5) gallons of clean potable water and add 1.2 grams of Activator-C. Prepare in well ventilated area. Avoid breathing any fumes which may be produced while activator is dissolving. Allow fifteen (15) minutes reaction time for activator to dissolve completely. This will yield a working solution containing 100 ppm available chlorine dioxide. As an alternate activation method, adjust the pH to 4.0 with acetic, citric, phosphoric, sulfuric or hydrochloric acid, or add 10 grams of Activator K.
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.

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 Carnebon 200 concentrate per gallon of working solution (500 ppm available chlorine dioxide) into a clean, plastic pail. Add one gallon of clean, potable water and add 1.2 grams of Activator-C. Prepare in well ventilated area, avoid breathing any fumes which may be produced while activator is dissolving. Allow fifteen (15) minutes reaction time for activator to dissolve completely. This will yield a working solution containing 500 ppm of available chlorine dioxide. As an alternate activation method, adjust the pH to 4.0 with acetic, citric, phosphoric, sulfuric or hydrochloric acid, or add 8.6 grams of Activator K.
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 solution 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.

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 Carnebon 200 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 on 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.

TO INHIBIT BACTERIAL SLIME FORMING BACTERIAL BUILDUP IN COMMERCIAL WATER FILTRATION SYSTEMS, SAND BEDS, GRAVEL BEDS, CHARCOAL FILTERS AND COOLING WATER SYSTEMS.

FILTERS:

- 1) Carefully back-flush filters with potable water where possible to remove any accumulated solid residue and contamination.
- 2) Fill system with potable water and adjust pH to 6.0 with citric acid, phosphoric acid, or acetic acid (vinegar) or equivalent.
- 3) Add 2.0 fl. oz. of Carnebon 200 per gallon (300 ppm ClO₂) filter system volume to the access hatch and circulate the system for 1 hour. Check the pH and bring back to 6.0 if it has drifted. Bring the chlorine dioxide concentration back to 300 ppm.
- 4) Circulate the solution for 1 additional hour, discharge and then water wash for 30 minutes with potable water to remove the chlorine dioxide.

COOLING WATER SYSTEMS:

- 1) Add 2.5 gallons of Carnebon 200 per 10,000 gallons of cooling water every week.
- 2) Depending on the degree and type of contamination, addition frequency may be reduced to every 2-3 weeks when contamination is under control.

INDUSTRIAL APPLICATIONS - TO INHIBIT THE GROWTH OF SLIME AND ODOR CAUSING BACTERIA IN WATER BASED CUTTING OILS

- 1) **Batch Method** - Add 80 oz. of Carnebon 200 per thousand gallons to fresh system and repeat weekly or on first indication of increased bacterial contamination (odor, slime, bacterial count) Alkaline systems may require higher concentration of Carnebon 200.
- 2) **Continuous Method** - Proportion in 5 gallons of Carnebon 200 per million gallons per day used in the system. Alkaline systems may require higher concentration.
- 3) **Badly Contaminated Systems** - Slug dose system with 25 gallons of Carnebon 200 per million gallons of cutting oil. Then start the continuous procedure described above.

Adjust quantities in any of the above systems to compensate for levels of contamination, pH, type of contamination, etc., as necessary.

AS A SLIMICIDE IN PAPER MILLS TO PREVENT SLIME, TAR SPOTS, AND PITCH SPOTS IN WHITE WATER SYSTEMS

By maintaining a ClO_2 atmosphere in the white water, the microorganisms cannot produce the nodules which result in slime.

- 1) If the pH of the white water is below 7.0, add 11.25 gallons of Carnebon 200 per hundred tons of paper produced.
- 2) If the pH of the white water is above 7.0, then add 1/2 gallon of 5% sodium hypochlorite as an activator with each 11.25 gallons of Carnebon 200.

Continuous proportioning of the Carnebon 200 feed is recommended for best results. In many cases, the amount can be reduced after the system is clean.

TO PREVENT CORROSION AND SLIME BACTERIA IN OIL WELLS DURING SECONDARY OIL RECOVERY OPERATIONS

- 1) Prepare a working solution of 5,000 ppm stabilized chlorine dioxide by diluting each gallon of Carnebon 200 used to 4 gallons solution with the injection water.
- 2) Proportion 1 part of the above solution into each 150 parts of reinjected acidified (3-4 pH) water.
- 3) Monitor the microbial content of the water and increase or decrease the addition rate of the working solution as necessary.

IN FOOD PROCESSING PLANTS, POULTRY, MEAT, FISH, DAIRIES AND BOTTLING PLANT

For use as a terminal food-contact surface sanitizing rinse conforming to 21 C.F.R. Part 178.1010 paragraph b. 34 and c. 29 not requiring a subsequent potable water rinse.

- 1) This solution is intended for use as a food-contact surface sanitizer for dairies, ice-cream factories and food-processing plants.
- 2) This solution may be used on hard surfaces such as tables, trays, bins, etc., and the interior or exterior of food processing equipment.
- 3) All equipment should be thoroughly cleaned to remove gross food particles and soil by pre-flush, or pre-scrape and, where necessary, a pre-soak treatment. The surface objects should then be cleaned with a detergent or cleaner followed by a potable water rinse before application of the sanitizing solution.

4) The active biocide in the system is free chlorine dioxide even though the stabilized chlorine dioxide at pH 8.5 is mildly bacteriostatic. Free chlorine dioxide is released by addition of an activator and/or acidulant. A solution containing 1000 ppm of total available chlorine dioxide is prepared by adding 2.5 gallons of Carnebon 200 per 50 gallons of water and then adding 780 grams (1.71 lbs) of ACTIVATOR K per 50 gallons of solution. Allow to stand for 15 minutes after agitation for 5 minutes. As an alternate, this solution can be activated by addition of food grade citric acid, phosphoric acid, or acetic acid (vinegar) to pH 4 or by adoption of 114 grams of Activator C. Then dilute one part of this solution with 4 parts of water to give 200 ppm of total chlorine dioxide and about 125 ppm free chlorine dioxide (30-40 ppm free chlorine dioxide when acid activation is used)

5) This solution should be allowed to contact all food processing equipment for at least 1 minute but preferably longer by transferring and/or spraying into each food processing vessel. It is essential that the sanitizing solution contact all surfaces to be sanitized. Thus, hard to reach in-place equipment pipes, closed vessels, etc. should be filled with the solution to ensure contact on all surfaces with the sanitizing solution. Use suitable protective breathing apparatus when applying this solution on external equipment.

6) After the required contact time or longer allow the solutions to adequately drain and air dry from all treated surfaces. No potable water rinse is required.

7) The above sanitizing solution may not be reused as a food-contact sanitizer but may be diluted to 1:5 with water and used for cleaning of walls, floors and drains of the plant.

TO CONTROL THE BUILDUP OF ODOR AND SLIME AND CONTROL TASTE IN ICE PLANTS AND POULTRY AND MEAT PROCESSING PLANT WATER

1) Thoroughly clean the ice-making machinery with a detergent solution followed by a potable water rinse.

2) Meter into the incoming water to the ice plant potable water system 1 gallon of Carnebon 200 per 1000 gallons of water (20 ppm available chlorine dioxide).

3) As an additive to potable water in meat and poultry processing plants to inhibit bacterial slime and improve taste and odor, add 1 gallon of Carnebon 200 per 1000 gallons of water.

TO CONTROL ODOR AND SLIME FORMING BACTERIA, MOLD AND MILDEW ON WALLS, FLOORS AND CEILINGS

1) Before treatment, remove all gross filth, wash with detergent and rinse with potable water.

2) Spray or soak the walls, floors and ceilings with a solution of 2.5 gallons of Carnebon 200 diluted to 20 gal with water (2500 ppm available chlorine dioxide). Avoid breathing the mists with suitable respiratory protection. Avoid contact with food. Allow to air dry and repeat as necessary.

FOR CONTROL OF MOLLUSKS IN ONCE-THROUGH COOLING WATER SYSTEMS

Add 10 gallons of Carboneb 200 to 100 gallons of water and add 1 lb. Of Activator C (or 6.9 lbs. Of Activator K) to the solution with mild stirring for 15 minutes. This produces an activated solution containing 2000 ppm chlorine dioxide (Use respirator approved for chlorine dioxide use). As an alternate activation method, reduce the pH of the above solution to 3.0 with a mineral or organic acid and allow to slowly stir for ½ hour before use.

Slug Dose

Add between 2.5 gallons and 12.5 gallons of the above solution per 1000 gallons of water (5 ppm to 25 ppm).

Continuous Dose

Add between 0.125 gallon and 1 gallon of the above solution per 1000 gallons of water (0.25 to 2.0 ppm).

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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Avoid contact with skin, eyes or clothing.

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.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage.

ENVIRONMENTAL HAZARD

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

CHEMICAL AND PHYSICAL HAZARDS

Stabilized Chlorine Dioxide is a strong oxidizing agent. Contamination with other materials such as acids, toxic chlorine, organic chemicals, etc., may cause a chemical reaction, resulting in evolution of chlorine dioxide gases and heat. Explosion and/or fire could result. Chlorine dioxide is a poisonous explosive gas. Keep all chemical and foreign materials away from this solution.

STORAGE AND DISPOSAL

Do not store with easily oxidizable materials, acids, reducers and combustible material. Avoid heat or freezing conditions. Store upright and do not stack drums over 2 high on pallets or partially filled drums. Use of a drum pump is suggested. Keep drum tightly closed when not withdrawing liquid. In case of spills, dilute with large quantities of water. Do not allow liquid to dry because this could present a fire hazard. Store only in the original container and take care to prevent cross contamination with other pesticides, fertilizer, food and feed.

EMERGENCY HANDLING: In case of contamination or decomposition, do not reseal container. Isolate in an open, well ventilated area. Flood with large volumes of water. Cool unopened drums in vicinity by water spray.

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label directions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Triple rinse (or equivalent). 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.

NOTICE: Seller expressly warrants that the product conforms to its chemical description. There are no warranties associated with the sale of this product either express or implied, including but not limited to the warranties of fitness for a particular purpose or use.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Before using this product in the generation of chlorine dioxide for biological control in *CANNING, RETORT and PASTEURIZER COOLING WATER.*

SEE DIRECTIONS FOR USE

CARNEBON 200®

2% AQUEOUS STABILIZED CHLORINE DIOXIDE

FOR INSTITUTIONAL OR INDUSTRIAL USE ONLY

Active Ingredients:

Chlorine Dioxide: 2%

Inert Ingredients: 98%

100%

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS

E.P.A. REG. NO. 9150-3

E.P.A. EST. NO. 9150-RI-01

NET WT. ACCEPTED lbs.

OCT 8 1996
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 9150-3



INTERNATIONAL DIOXIDE INC.
CLARK, N.J. 07066

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DIRECTIONS FOR USE:

TO CONTROL ODOR AND SLIME FORMING BACTERIA IN COOLING AND WARMING WATERS SUCH AS CANNING RETORT AND PASTEURIZER COOLING WATER, USED TO DECREASE OR INCREASE PACKAGED PRODUCT TEMPERATURE BY IMMERSION IN OR BY SPRAYING WITH THE TREATED PROCESS WATERS:

1) All tanks, tunnels, conveyor chains, heat exchanges, heat exchange towers, lines, spray bars, and nozzles should be thoroughly cleaned when possible, and completely rinsed using clean, potable water prior to treatment.

2) Preparation of solution: Water systems including the cooling or warming tanks or spray systems, towers, lines and all water containing parts of the system may be batch loaded at start up with one quart (0.95 liters) Carnebon 200 per one thousand (1000) gallons of potable water (5.0 ppm available ClO_2). To maintain the 5.0 ppm available ClO_2 in the water system a timed or electronically controlled chemical feed pump or injector system can be used for additions to the system or for treating the make-up water. Make up new Carnebon 200 solutions daily.

Optional activated solution: If heavy use of cooling or warming water or introduction of additional bacteria loads is expected or if slime buildup is heavy, an additional activation step may be used in preparation of solution.

3) Preparation of activated solution: Prepare in well a ventilated area, avoid breathing any fumes which may be produced while crystals are dissolving. For each one thousand (1000) gallons of system water to be treated, measure one quart (0.95) liters of Carnebon 200 and pour into a clean plastic container, pail or drum. To this Carnebon 200 amount, add food grade citric acid of no less than 99% purity, at the rate of 3.3 ounces(95 grams) crystals per quart (0.95 liters) of Carnebon 200. Allow five (5) minutes reaction time for crystals to dissolve. Cooling or warming water systems may be batch loaded at start up using one quart (0.95 liters) of the prepared solution per one thousand (1000) gallons of potable water (5.0 ppm available ClO_2). Batch or timed additions of the prepared solution can be made or an electronically controlled chemical feed pump or injector system can be used for additions of the prepared solution to the process water to maintain 5.0 ppm available ClO_2 . Make up new Carnebon 200 solutions daily.

Note: Chemical feed pumps and injectors must be chlorine resistant for best operation. Available ClO_2 levels should be confirmed using a chlorine dioxide test kit.

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