

813-15

8-11-2010

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

AUG 11 2010

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Wayne Penick
DPC Industries, Inc.
P.O. Box 24600
Houston, TX 77229

FILE COPY

Subject: Dixichlor Max
EPA Registration No. 813-15
Application Date: May 21, 2010
EPA Receipt Date: May 27, 2010

Dear Mr. Penick:

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

Proposed Amendment:

- Revised Storage and Disposal Statement per PR Notice 2007-4

Conditions:

Revise the label as follows:

1. Revise the Environmental Hazards Statement by changing the word 'public' to 'other' wherever it appears on the label.
2. Change the phrase "Have a product container..." to "Have the product container..."
3. Revise the Swimming Pool Water Disinfection section by changing the statements "...of 10,000 gallons of water..." to read "...of product for each 10,000 gallons of water..." and "...weight for each the..." to read "...weight. Check the..."
4. Revise the Storage and Disposal Statement by:
 - a. Changing the phrase "...Hypochlorite Solution..." to read "...sodium hypochlorite..." wherever it appears on the label.
 - b. Changing the Refillable and Nonrefillable Container Cleaning sections by revising the statements "Triple rinse as follows...procedure two more times.", wherever it appears on the label, to read:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

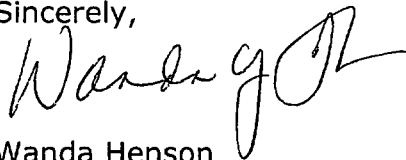
- 5. On page 5, revise the precautionary statements so that they are consistent with the precautionary statements on the front panel.
- 6. On page 6, revise the 10% use rate "80" to read "8.0".
- 7. On page 7, revise the Food Egg Sanitization section by adding the degree symbol to "130F".
- 8. On page 9, revise the Cooling Tower/Evaporative Condenser Water Treatment Chart by deleting "5-1".
- 9. On page 21, revise the Zebra Mussel Control Treatment Table by deleting the period from "10.000" and adding a comma.
- 10. On page 22, revise the Water Floods and Produced Water section by deleting the period from "1.000" and adding a comma.

General Comments:

A stamped copy of the accepted labeling is enclosed. Submit 1 copy of your final printed label before distributing or selling the product bearing the revised labeling.

Should you have any questions concerning this letter, please contact me at Henson.Wanda@epa.gov or call (703) 308-6345.

Sincerely,



Wanda Henson
Acting Product Manager (32)
Regulatory Management Branch II
Antimicrobials Division (7510P)

in EPA Letter Dated:

AUG 11 2010

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PRECAUTIONARY STATEMENTS

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 813-15

DIXICHLOR MAX

SANITIZER, DISINFECTANT

ACTIVE INGREDIENT:	% BY WT.
SODIUM HYPOCHLORITE	12.5%
INERT Ingredients	87.5%
TOTAL.....	100%

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. May cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves (PVC or Nitrile) when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, estuaries, oceans, or public waters unless in accordance with the requirements of the National Pollutant Discharge Elimination Systems (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 sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

PHYSICAL AND CHEMICAL HAZARDS: STRONG OXIDIZING AGENT: Mix only with water according to label directions. Mixing this product with gross filth such as feces, urine, etc. or with ammonia, acids, detergents or other chemicals will release hazardous gases irritating to eyes, lungs and mucous membranes.

KEEP OUT OF REACH OF CHILDREN DANGER

FIRST AID

IF SWALLOWED:

- Call poison control center or doctor immediately for treatment or advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing the eye.
- Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

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

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate the use of gastric lavage.

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

Desired Strength Available Chlorine (By Weight)	Gallons Water	Liquid Ounces Sodium Hypochlorite
5 PPM	100	5
10 PPM	100	1.0
15 PPM	100	1.5
25 PPM	100	2.5
35 PPM	100	3.5
50 PPM	100	5.0
100 PPM	10	1.0
200 PPM	10	2.0
500 PPM	10	5.0
600 PPM	10	6.0
1000 PPM	10	10.5
5000 PPM	10	51.0
10000 PPM	10	102.0

IMPORTANT! ALL SANITIZING APPLICATIONS

FOR ALL FOOD CONTACT SURFACES AND OBJECTS—Remove food particles by flushing, scraping and, when necessary, soaking. Wash thoroughly with a good detergent or compatible cleaner and rinse with potable water before application of DIXICHLOR solution. Wet all surfaces thoroughly with DIXICHLOR solution by immersion flooding or spraying. Contact time must be at least two minutes. Drain solution and air-dry. Do not wash with potable water after sanitizing. Dixichlor solutions must not be re-used for sanitizing purposes. Prepare a fresh solution daily if the old solution becomes diluted or soiled.

SANITIZATION OF POROUS FOOD CONTACT SURFACES

SPRAY/FOG METHOD - Preclean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 6 oz. product with 10 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution. Prepare a 200 ppm sanitizing solution by thoroughly mixing 2 oz. of this product with 10 gallons of water.

SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES

SPRAY/FOG METHOD - Preclean all surfaces after use. Use a 600 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Prepare a 200 ppm sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 2 oz. product with 10 gallons of water. Prepare a 600 ppm solution by thoroughly mixing the product in a ratio of 6 oz. product with 10 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces treated with a 600 ppm solution with a 200 ppm solution.

SWIMMING POOL WATER DISINFECTION

For a new pool or spring start-up, superchlorinate with 52 to 104 oz. of 10,000 gallons of water to yield 5 to 10 ppm available chlorine by weigh for each the level of available chlorine with a test

NO WARRANTY, EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, IS MADE, EXCEPT THAT THE PRODUCT CONFORMS TO SELLER SPECIFICATIONS. BUYER ASSUMES ALL RISK OF USE, STORAGE AND HANDLING. SELLER SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING DIRECTLY OR INDIRECTLY IN CONNECTION WITH THE PURCHASE, USE, STORAGE OR HANDLING OF THE PRODUCT.

kit. Adjust and maintain pool water pH to between 7.2 and 7.6. Adjust and maintain the alkalinity of the pool to between 50 to 100 ppm.

To maintain the pool, add manually or by a feeder device 11 oz. of this product for each 10,000 gallons of water to yield an available chlorine residual between 0.6 to 1.0 ppm by weight. Stabilized pools should maintain a residual of 1.0 to 1.5 ppm available chlorine. Test the pH, available chlorine residual and alkalinity of the water frequently with appropriate test kits. Frequency of water treatment will depend upon temperature and number of swimmers.

Every 7 days, or as necessary, superchlorinate the pool with 52 to 104 oz. of product for each 10,000 gallons of water to yield 5 to 10 ppm available chlorine by weight. Check the level of available chlorine with a test kit. Do not reenter pool until the chlorine residual is between 1.0 to 3.0 ppm.

At the end of the swimming pool season or when water is to be drained from the pool, chlorine must be allowed to dissipate from treated pool water before discharge. Do not chlorinate the pool within 24 hours prior to discharge.

WINTERIZING POOLS - While water is still clear & clean, apply 3 oz. of product per 1000 gallons, while filter is running, to obtain a 3 ppm available chlorine residual, as determined by a suitable test kit. Cover pool, prepare heater, filter and heater components for winter by following manufacturer's instructions.

DISINFECTION OF DRINKING WATER (POTABLE)

PUBLIC SYSTEMS: Mix a ratio of 1 oz. of this product to 100 gallons of water. Begin feeding this solution with a hypochlorinator until a free available chlorine residual of at least 0.2 ppm and no more than 0.6 ppm is attained throughout the distribution system. Check water frequently with a chlorine test kit. Bacteriological sampling must be conducted at a frequency no less than that prescribed by the National Interim Primary Drinking Water Regulations. Contact your local Health Department for further details.

INDIVIDUAL SYSTEMS: DUG WELLS: Upon completion of the casing (lining) wash the interior of the casing (lining) with a 100 ppm available chlorine solution using a stiff brush. This solution can be made by thoroughly mixing 1 oz. of this product into 10 gallons of water. After covering the well, pour the sanitizing solution into the well through both the pipesleeve opening and the pipeline. Wash the exterior of the pump cylinder also with the sanitizing solution. Start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Consult your local Health Department for further details.

NOTE: This product degrades with age. Use a chlorine test kit and increase dosage as necessary to obtain the required level of available chlorine.

REFER TO THE DIXICHLOR SUPPLEMENTAL BOOKLET FOR ADDITIONAL DIRECTIONS AND USES.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Store in a cool, dry area away from direct sunlight. In case of spill, flood area with large quantities of water.

CONTAINER HANDLING:

REFILLABLE CONTAINER - Refill this container with Hypochlorite Solution only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

CONTAINER CLEANING - Triple rinse empty container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment of mix tank and drain for 10 seconds after the flow begins to drip. Fill the container the container full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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. Product or rinsate that cannot be used should be diluted with water and disposed of in a sanitary sewer. Do not contaminate food or feed by storage, disposal or cleaning equipment.

OR

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Store in a cool, dry area away from direct sunlight. In case of spill, flood area with large quantities of water.

CONTAINER HANDLING:

NON-REFILLABLE CONTAINER – Do not reuse or refill this container.

CONTAINER CLEANING - Triple rinse empty container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment of mix tank and drain for 10 seconds after the flow begins to drip. Fill the container the container full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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. Product or rinsate that cannot be used should be diluted with water and disposed of in a sanitary sewer. Do not contaminate food or feed by storage, disposal or cleaning equipment.

DANGER
 THIS CONTAINER HAZARDOUS
 WHEN EMPTIED. Since emptied
 container retains product
 residues (vapor or liquid),
 all labeled hazard
 precautions must
 be observed.



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HMIS	
HEALTH	2
FLAMMABILITY	0
REACTIVITY	1

SPECIAL PROTECTION

DEGREE OF HAZARD
 4 = EXTREME
 3 = HIGH
 2 = MODERATE
 1 = SLIGHT
 0 = INSIGNIFICANT

HYPOCHLORITE
 SOLUTION
UN 1791

**Corrosive
 Material**

- NET CONTENTS:**
- 15 GALLONS
 - 30 GALLONS
 - 50 GALLONS
 - 54 GALLONS
 - 300 GALLONS
- _____ BULK GALLONS

EPA REG NO. 813-15		
Appropriate EPA establishment marked below		
EPA EST. NO		
ALBQ	<input type="checkbox"/>	000813-NM-001
CLEB	<input type="checkbox"/>	000813-TX-004
HOU	<input type="checkbox"/>	000813-TX-001
HUD	<input type="checkbox"/>	000813-CO-001
OMAHA	<input type="checkbox"/>	000813-NE-001
ROSE	<input type="checkbox"/>	000813-MN-001
SWEET	<input type="checkbox"/>	000813-TX-003



Certified to
 NSF/ANSI 60

Manufactured by
DPC INDUSTRIES
 1919 Jacintoport Blvd. Houston, TX 77015 (281) 457-4888
 FOR 24 HOUR EMERGENCY INFORMATION
 CALL CHEMTREC: 1(800) 424-9300

DIXICHLOR

SODIUM HYPOCHLORITE

DIRECTIONS FOR USE

MANUFACTURED BY

 DPC INDUSTRIES, INC.

 DPC ENTERPRISES, L.P.

 DXI INDUSTRIES, INC.

1919 JACINTO PORT BLVD. P.O. BOX 24600
HOUSTON, TX 77229
(281) 457-4888

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1. DIXICHLOR PRODUCTS

DIXICHLOR MAX EPA Reg. No. 813-15
 ACTIVE INGREDIENT:
 Sodium Hypochlorite 12.5%
 INERT INGREDIENT: 87.5%
 TOTAL 100.0%

DIXICHLOR EPA Reg. No. 813-16
 ACTIVE INGREDIENT:
 Sodium Hypochlorite 10.0%
 INERT INGREDIENT 90.0%
 TOTAL 100.0%

DIXICHLOR LITE EPA Reg. No. 813-14
 ACTIVE INGREDIENT:
 Sodium Hypochlorite..... 5.25%
 INERT INGREDIENT: 94.75%
 TOTAL 100.00%

2. Precautionary Statements

KEEP OUT OF REACH OF CHILDREN

DANGER

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment or advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF 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 the eye. • Call poison control center or doctor for 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 treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<p style="text-align: center;">NOTE TO PHYSICIAN</p> Probable mucosal damage may contraindicate the use of gastric lavage.	

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

DANGER: Corrosive, may cause severe skin and eye irritation or chemical burns to broken skin. Causes eye damage. Wear safety glasses or goggles and rubber gloves (PVC, Nitrile) when handling these products. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. DO NOT return until strong odors have dissipated.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, 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 sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL AND CHEMICAL HAZARDS: STRONG OXIDIZING AGENT: Mix only with water according to label directions. Mixing this product with gross filth such as feces, urine, etc. or with ammonia, acids, detergents or other chemicals will release hazardous gases irritating to eyes, lungs and mucous membranes.

**FOR 24 HOUR EMERGENCY INFORMATION
CALL CHEMTREC: 1 (800) 424-9300**

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT
IN A MANNER INCONSISTENT WITH IT'S LABELING.

IMPORTANT! ALL SANITIZING APPLICATIONS

FOR ALL FOOD CONTACT SURFACES AND OBJECTS - Remove food particles by flushing, scraping and, when necessary, soaking. Wash thoroughly with a good detergent or compatible cleaner and rinse with potable water before application of SODIUM HYPOCHLORITE solution. Wet all surfaces thoroughly with SODIUM HYPOCHLORITE solution by immersion flooding or spraying. Contact time must be at least 2 minute. Drain solution and air dry. Do not wash with potable water after sanitizing. SODIUM HYPOCHLORITE solutions must not be re-used for sanitizing purposes. Prepare a fresh solution daily if the old solution becomes diluted or soiled.

3. Dilution Conversion Chart

The DILUTION CONVERSION CHART provided below covers the DIXICHLOR Sodium Hypochlorite Products manufactured by DXI Industries, Inc., DPC Enterprises, L.P. and DPC Industries, Inc. It is designed to serve as a guide and may not cover all PPM ranges or dilution as required to satisfy a particular use or need.

Desired Strength Avail. Chlorine (by Weight)	Gallons Water	Liquid Oz. Sodium Hypochlorite		
		12.5%	10%	5.25%
5 PPM	100	.5	.75	1.5
10 PPM	100	1.0	1.5	2.5
15 PPM	100	1.5	2.0	4.0
25 PPM	100	2.5	3.5	6.0
35 PPM	100	3.5	4.5	8.5
50 PPM	100	5.0	6.5	12.0
100 PPM	10	1.0	1.5	2.5
200 PPM	10	2.0	3.0	5.0
500 PPM	10	5.0	6.5	12.0
600 PPM	10	6.0	8.0	15.0
1000 PPM	10	10.5	13.0	24.5
5000 PPM	10	51.0	64.0	122.0
10000 PPM	10	102.0	128.0	244.0

Should other available chlorine strengths or dilution volumes be desired, the following formula must be used to adjust the dosages:

$$\text{Ounce of Product} = \frac{(\text{PPM avail. Cl}_2) (\text{Gal. Water}) (128)}{(\% \text{ Active Ingredient}) (10,000)}$$

Formula Definition:

- Ounce of Product = Ounces of DIXICHLOR Product to Use
- PPM Available Cl₂ = What is Required
- Dilution Gallons Water = You Specify Quantity
- 128 oz./gal. = Constant 128
- (%) Percent Active Ingredient = Sodium Hypochlorite Strength
- 10,000 = Constant

4. AGRICULTURAL USES

A. Post-Harvest Protection

Potatoes can be sanitized after cleaning and prior to storage by spraying with a 500 ppm available chlorine sanitizing solution at a level of 1 gallon of sanitizing solution per ton of potatoes.

Disinfect leaf cutting bee cells and bee boards by immersion in a solution containing 1 ppm available chlorine for 3 minutes. Allow cells to drain for 2 minutes and dry for 4 to 5 hours or until no chlorine odor can be detected. The bee domicile is disinfected by spraying with a 0.1 ppm solution until all surfaces are thoroughly wet. Allow the domicile to dry until all chlorine odor has dissipated.

B. Food Egg Sanitization

Thoroughly clean all eggs. Thoroughly mix DIXICHLOR product with 10 gallons of warm water to produce a 200 ppm available chlorine solution. The sanitizer temperature should not exceed 130F. Spray the warm sanitizer so that the eggs are thoroughly wetted. Allow the eggs to thoroughly dry before casing or breaking. Do not apply a potable water rinse. The solution should not be reused to sanitize eggs.

C. Fruit and Vegetable Washing

Thoroughly clean all fruits and vegetables in a wash tank. Thoroughly mix DIXICHLOR in water to make a sanitizing solution of 25 ppm available chlorine. After draining the tank, submerge fruit or vegetables for 2 minutes in a second wash tank containing the recirculating sanitizing solution. Spray rinse vegetables with the sanitizing solution prior to packaging. Rinse fruit with potable water only prior to packaging.

D. Meat and Poultry Plants

(Approved for use DIXICHLOR MAX 12.5%)
Chlorine may be present in processing water of meat and poultry plants at concentrations up to 2 parts per million (ppm) calculated as available chlorine. Also, chlorine may be present in poultry chiller intake water, and in carcass wash water at concentrations up to 50 ppm available chlorine. Chlorine must be dispensed at a constant and uniform level and the dispensing method or system must be such that a controlled rate is maintained. Thoroughly mix 1.15 oz. Of this product in 200 gallons of water to make a sanitizing solutions of 5ppm available chlorine or 11.5 oz in 200 gallons of water for 50 ppm available chlorine.

5. ARTIFICIAL SAND BEACHES

To sanitize the sand, spray a 500 ppm available chlorine solution at frequent intervals. Small areas can be sprinkled with a watering can.

6. ASPHALT OR WOOD ROOFS AND SIDINGS

To control fungus and mildew, first remove all physical soil by brushing and hosing with clean water. Apply a 5000 ppm available chlorine solution by brushing or spraying roof or siding. After 30 minutes, rinse by hosing with clean water.

7. AQUACULTURAL USES

A. Fish Ponds

Remove fish from ponds prior to treatment. Add appropriate amount of DIXICHLOR to 10,000 gallons of water to obtain 10 ppm available chlorine. Add more DIXICHLOR to the water if the available chlorine level is below 1 ppm after 5 minutes. Return fish to pond *after* the available chlorine level reaches zero.

B. Fish Pond Equipment

Thoroughly clean all equipment prior to treatment. Thoroughly mix DIXICHLOR with 10 gallons of water to obtain 200 ppm available chlorine. Porous equipment should soak for one hour.

C. Main Lobster Ponds

Remove lobsters, seaweed, etc. from ponds prior to treatment. Drain the pond. Thoroughly mix DIXICHLOR to 10,000 gallons of water to obtain at least 600 ppm available chlorine. Apply so that all barrows, gates, rock and dam are treated with product. Permit high tide to fill the pond and then close gates. Allow water to stand for 2 to 3 days until the available chlorine level reaches zero. Open gates and allow 2 tidal cycles to flush the pond before returning lobsters to pond.

D. Conditioning Live Oysters

Thoroughly mix DIXICHLOR to 10,000 gallons of water at 50 to 70°F to obtain 0.5 ppm available chlorine. Expose oysters to this solution for at least 15 minutes, monitoring the available chlorine level so that it does not fall below 0.05 ppm. Repeat entire process if the available chlorine level drops below 0.05 ppm or the temperature falls below 50°F.

E. Control of Scavengers in Fish Hatchery Ponds

Prepare a solution containing 200 ppm of available chlorine by mixing DIXICHLOR with 10 gallons of water. Pour into drained pond potholes. Repeat if necessary. Do not put desirable fish back into refilled ponds until chlorine residual has dropped to 0 ppm, as determined by a test kit.

8. BOAT BOTTOMS

To control slime on boat bottoms, sling a plastic tarp under boat, retaining enough water to cover the fouled bottom area, but not allowing water to enter enclosed area. This envelope should contain approximately 500 gallons of water for a 14 foot boat. Add DIXICHLOR to this water to obtain a 35 ppm available chlorine concentration. Leave immersed for 8 to 12 hours. Repeat if necessary. Do not discharge the solution until the free chlorine level has dropped to 0 ppm, as determined by a swimming pool test kit.

9. COOLING TOWER/EVAPORATIVE CONDENSER WATER

A. Slug Feed Method

Initial Dose: When system is noticeably fouled, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system daily, or as needed to maintain control and keep the chlorine residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

B. Intermittent Feed Method

Initial Dose: When system is noticeably fouled, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. Apply half (or 1/3, 1/4, or 1/5) of this initial dose when half (or 1/3, 1/4, or 1/5) of the water in the system has been lost by blowdown.

Subsequent Dose: When microbial control is evident, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain a 1 ppm residual. Apply half (or 1/3, 1/4, or 1/5) of this initial dose when half (or 1/3, 1/4, or 1/5) of the water in the system has been lost by blowdown. Badly fouled systems must be cleaned before treatment is begun.

C. Continuous Feed Method

Initial Dose: When system is noticeably fouled, add appropriate amount of DIXICHLOR per 10,000 gallons in the system to obtain 5 to 10 ppm available chlorine.

Subsequent Dose: Maintain this treatment level by starting a continuous feed of 1 oz. of DIXICHLOR per 1,000 gallons water lost by blowdown to maintain a 1.0 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

D. Cooling Tower/Evaporative Condenser Water Treatment Chart

Method	Ounce DIXICHLOR/10,000 Gallons Water		
	12.5%	10%	5.25%
Slug Feed To obtain 5-10 5-1PPM	52-104	68-135	130-260
Subsequent Dose Maintain 1 ppm residual	11	13	25
Intermittent Feed To obtain 5-10 PPM	52-104	68-135	130-260
Subsequent Dose Maintain 1 ppm residual	11	13	25
Continuous Feed To obtain 5-10 PPM	52-104	68-135	130-260
Subsequent Dose* Maintain 1 ppm residual	1	1.5	2.5

(*per 1000 gal.)

10. EMERGENCY DISINFECTION AFTER DROUGHTS

A. Supplementary Water Supplies

Gravity or mechanical hypochlorite feeders should be set up on a supplementary line to dose the water to a minimum chlorine residual of 0.2 ppm after a 20 minute contact time. Use a chlorine test kit.

B. Water Shipped in By Tanks, Tank Cars, Trucks, Etc.

Thoroughly clean all containers and equipment. Spray a 50 ppm available chlorine solution and rinse with potable water after 5 minutes. During the filling of the containers, dose with sufficient amounts of DIXICHLOR to provide at least a 0.2 ppm chlorine residual. Use a chlorine test kit.

11. EMERGENCY DISINFECTION AFTER FIRES

Cross Connections or Emergency Connections

Hypochlorination or gravity feed equipment should be set up near the intake of the untreated water supply. Apply sufficient product to give a chlorine residual of at least 0.1 to 0.2 ppm at the point where the untreated supply enters the regular distribution system. Use a chlorine test kit.

12. EMERGENCY DISINFECTION AFTER FLOODS

A. Wells

Thoroughly flush contaminated casing with a 500 ppm available chlorine solution. Backwash the well to increase yield and reduce turbidity, adding sufficient chlorinating solution to the backwash to produce a 10 ppm available chlorine residual, as determined by a chlorine test kit. After the turbidity has been reduced and the casing has been treated, add sufficient chlorinating solution to produce a 50 ppm available chlorine residual. Agitate the well water for several hours and take a representative water sample. Retreat well if water samples are biologically unacceptable.

B. Reservoirs

In case of contamination by overflowing streams, establish hypochlorinating stations upstream of the reservoir. Chlorinate the inlet water until the entire reservoir obtains a 0.2 ppm available chlorine residual, as determined by a suitable chlorine test kit. In case of contamination from surface drainage, apply sufficient product directly to the reservoir to obtain a 0.2 ppm available chlorine residual in all parts of the reservoir.

C. Basins, Tanks, Flumes, Etc.

Thoroughly clean all equipment, then add 20 oz. of 12.5% DIXICHLOR to 5 cu ft. of water to obtain 500 ppm available chlorine, as determined by a suitable test kit. After 24 hours drain, flush, and return to service, if the previous method is not suitable, spray or flush the equipment with a solution containing 1000 ppm available chlorine. Allow to stand for 2 to 4 hours, flush and return to service. (Using ratio method to calculate concentration, 5.25%, or 10% DIXICHLOR can be used)

D. Filters

When the sand filter needs replacement, apply 80 oz. of 12.5% DIXICHLOR for each 150 to 200 cubic feet of sand. When the filter is severely contaminated, additional product should be distributed over the surface at the rate of 80 oz. per 20 sq. ft. Water should stand at a depth of 1 foot above the surface of the filter bed for 4 to 24 hours. When filter beds can be backwashed of mud and silt, apply 80 oz. of 12.5% DIXICHLOR per each 50 sq. ft., allowing the water to stand at a depth of 1 foot above the filter sand. After 30 minutes, drain water to the level of the filter. After 4 to 6 hours, drain and proceed with normal backwashing. (Using ratio method to calculate concentration, 5.25%, or 10% DIXICHLOR can be used.)

E. Distribution System

Flush repaired or replaced section with water. Establish a hypochlorinating station and apply sufficient product until a consistent available chlorine residual of at least 10 ppm remains after a 24 hour retention time. Use a chlorine test kit.

13. EMERGENCY DISINFECTION AFTER MAIN BREAKS

Mains

Before assembly of the repaired section, flush out mud and soil. Permit a water flow of at least 2.5 feet per minute to continue under pressure while injecting this product by means of a hypochlorinator. Stop water flow when a chlorine residual test of 50 ppm is obtained at the low pressure end of the new main section after a 24 hour retention time. When chlorination is completed, the system must be flushed free of all heavily chlorinated water.

14. DISINFECTION OF DRINKING WATER (POTABLE)

(Public/Individual/Emergency Systems)

A. Public System

Mix a ratio of DIXICHLOR to water to produce a 10 ppm available chlorine by weight. Begin feeding this solution with a hypochlorinator until a free available chlorine residual of at least 0.2 ppm and no more than 0.6 ppm is attained throughout the distribution system. Check water frequently with a chlorine test kit. Bacteriological sampling must be conducted at a frequency no less than that prescribed by the National Interim Primary Drinking Water Regulations. Contact your local Health Department for further details.

B. Individual Systems

1. DUG WELLS: Upon completion of the casing (lining), wash the interior of the casing (lining) with a 100 ppm available chlorine solution using a stiff brush. After covering the well, pour the sanitizing solution into the well through both the pipesleeve opening and the pipeline. Wash the exterior of the pump cylinder also with the sanitizing solution. Start pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Consult your local Health Department for further details.

C. Individual Water Systems

1. DRILLED, DRIVEN AND BORED WELLS: Run pump until water is as free from turbidity as possible. Pour a 100 ppm available chlorine sanitizing solution into the well. Add 5 to 10 gallons of clean, chlorinated water to the well in order to force the sanitizer into the rock formation. Wash the exterior of pump cylinder with the sanitizer. Drop pipeline into well, start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Deep wells with high water levels may necessitate the use of special methods for introduction of the sanitizer into the well. Consult your local Health Department for further details.

2. FLOWING ARTESIAN WELLS: Artesian wells generally do not require disinfection. If analysis indicate persistent contamination, the well should be disinfected. Consult your local Health Department for further details.

D. Emergency Disinfection

When boiling of water for 1 minute is not practical, water can be made potable by using this product. Prior to addition of the sanitizer, remove all suspended material by filtration or by allowing it to settle to the bottom. Decant the clarified contaminated water to a clean container and add 1 to 3 drops, (dependent on product strength) to 20 gallons of water. Allow the treated water to stand for 30 minutes. Properly treated water should have a slight chlorine odor. If not, repeat dosage and allow the water to stand an additional 15 minutes. The treated water can then be made palatable by pouring it between clean containers for several times.

E. Meat and Poultry Plant Treatment

For the treatment of drinking water and water which may be incorporated into food products or directly contact food, use the following concentrations. Chlorine may be present in the process water of meat plants at concentrations of up to 5 ppm. Chlorine may be present in the process water of poultry plants at levels up to 20 ppm. Levels are calculated in ppm of available chlorine. Use dilution conversion chart to calculate the proper ratio of Hypochlorite solution to water. DIXICHLOR must be dispensed at a constant and uniform level to insure that a controlled rate is maintained.

15. PUBLIC WATER SYSTEM

A. Reservoirs — Algae Control

Hypochlorinate streams feeding the reservoir. Suitable feeding points should be selected on each stream at least 50 yards upstream from the points of entry into the reservoir.

B. Mains

Thoroughly flush section to be sanitized by discharging from hydrants. Permit a water flow of at least 2.5 feet per minute to continue under pressure while injecting this product by means of a hypochlorinator. Stop water flow when a chlorine residual test of 50 ppm is obtained at the low pressure end of the new main section after a 24 hour retention time. When chlorination is completed, the system must be flushed free of all heavily chlorinated water.

C. New Tanks, Basins, Etc.

Remove all physical soil from surfaces. Place 20 oz. of 12.5% DIXICHLOR for each 5 cubic feet of working capacity (500 ppm available chlorine). Fill to working capacity and allow to stand for at least 4 hours. Drain and flush with potable water and return to surface. (Using ratio method to calculate concentration, 5.25%, or 10% DIXICHLOR can be used.)

D. New Filter Sand

Apply 80 oz. of 12.5% DIXICHLOR for each 150 to 200 cubic feet of sand. The action of the product dissolving as the water passes through the bed will aid in sanitizing the new sand. (Using ratio method to calculate concentration, 5.25%, or 10% DIXICHLOR can be used.)

E. New Wells

Flush the casing with a 50 ppm available chlorine solution. The solution should be pumped or fed by gravity into the well after thorough mixing with agitation. The well should stand for several hours or overnight under chlorination. It may then be pumped until a representative raw water sample is obtained. Bacterial examination of the water will indicate whether further treatment is necessary.

F. Existing Equipment

Remove equipment from service, thoroughly clean surfaces of all physical soil. Sanitize by placing 21 oz. of this product for each 5 cubic feet capacity (approximately 500 ppm available chlorine). Fill to working capacity and let stand at least 4 hours. Drain and place in service. If the previous treatment is not practical, surfaces may be sprayed with a 1000 ppm available chlorine solution. After drying, flush with water and return to service

16. FARM PREMISES

Remove all animals, poultry, and feed from premises, vehicles, and enclosures. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other facilities occupied or traversed by animals or poultry. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean all surfaces with soap or detergent and rinse with water. To disinfect, saturate all surfaces with a solution of at least 1000 ppm available chlorine for a period of 10 minutes. Immerse all halter, ropes, and other types of equipment used in handling and restraining animals and poultry, as well as the cleaned forks, shovels, and scrapers used for removing litter and manure. Ventilate buildings, cars, boats and other closed spaces. Do not house livestock or poultry or employ equipment until chlorine has been dissipated. All treated feed racks, mangers, troughs, automatic feeders, fountains and waterers must be rinsed with potable water before reuse.

17. LAUNDRY SANITIZERS

A. Household Laundry Sanitizers

1. IN SOAKING SUDS: Thoroughly mix DIXICHLOR in wash water to provide 200 ppm available chlorine. Wait 5 minutes, then add soap or detergent. Immerse laundry for at least 11 minutes prior to starting the wash/rinse cycle.

2. IN WASHING SUDS: Thoroughly mix DIXICHLOR in wash water containing clothes to provide 200 ppm available chlorine. Wait 5 minutes, then add soap or detergent and start the wash/rinse cycle.

B. Commercial Laundry Sanitizers

Wet fabrics or clothes should be spun dry prior to sanitization. Thoroughly mix DIXICHLOR with water to yield 200 ppm available chlorine. Promptly after mixing the sanitizer, add the solution into the prewash cycle prior to washing fabrics/clothes in the regular wash cycle with a good detergent. Test the level of available chlorine, if solution has been allowed to stand. Add more DIXICHLOR if the available chlorine level has dropped below 200 ppm.

18. PULP AND PAPER MILL PROCESS WATER SYSTEMS

A. Slug Feed Method

INITIAL DOSE: When system is noticeably fouled, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system daily, or as needed, to maintain control and keep the chlorined residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

B. Intermittent Feed Method

INITIAL DOSE: When system is noticeably fouled, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. Apply half (or 1/3, 1/4, or 1/5) of this initial dose when half (or 1/3, 1/4, or 1/5) of the water in the system has been lost by blowdown.

SUBSEQUENT DOSE: When microbial control is evident, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain a 1 ppm residual. Apply half (or 1/3, 1/4, or 1/5) of this initial dose when half (or 1/3, 1/4, or 1/5) of the water in the system has been lost by blowdown. Badly fouled systems must be cleaned before treatment is begun.

C. Continuous Feed Method

INITIAL DOSE: When system is noticeably fouled, add appropriate amount of DIXICHLOR per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine.

SUBSEQUENT DOSE: Maintain this treatment level by starting a continuous feed of 1 oz. of this product per 1,000 gallons of water lost by blowdown to maintain a 1 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

D. Pulp and Paper Mill Process Water Systems Treatment Chart

Method	Ounce DIXICHLOR/10,000 Gallons Water		
	12.5%	10%	5.25%
Slug Feed To obtain 5-10 PPM	52-104	68-135	130-260
Subsequent Dose Maintain 1 ppm residual	11	13	25
Intermittent Feed To obtain 5-10 ppm	52-104	68-135	130-260
Subsequent Dose Maintain 1 ppm residual	11	13	25
Continuous Feed To obtain 5-10 ppm	52-104	68-135	130-260
Subsequent Dose* ¹ Maintain 1 ppm residual	1	1.5	2.5

(*per 1000 gal.)

19. SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES

A. Rinse Method

A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing required quantity of DIXICHLOR with 10 gallons of water. If no test kit is available, prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight.

Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. If solution contains less than 50 ppm available chlorine as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Sanitizers used in automated systems may be used for general cleaning but may not be reused for sanitizing purposes.

B. Immersion Method

A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 50 ppm. If no test kit is available, prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight.

Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain.

If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. Do not rinse equipment with water after treatment.

Sanitizers used in automatic systems may be used for general cleaning but may not be reused for sanitizing purposes.

C. Flow/Pressure Method

Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 2 minutes to insure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine.

D. Clean-in Place Method

Thoroughly clean equipment after use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 10 minutes to insure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine.

E. Spray/Fog Method

Preclean all surfaces after use. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces treated with a 600 ppm solution with a 200 ppm solution.

20. SANITIZATION OF POROUS FOOD CONTACT SURFACES

A. Rinse Method

Clean surfaces in the normal manner. Rinse all surfaces thoroughly with the 600 ppm solution, maintaining contact for at least 2 minutes. Prior to using equipment rinse all surfaces with a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.

B. Immersion Method

Clean equipment in the normal manner. Immerse equipment in the 600 ppm solution for at least 2 minutes. Prior to using equipment, immerse all surfaces in a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.

C. Spray/Fog Method

Preclean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of the required quantity and apply using spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution.

21. SANITIZATION OF NONPOROUS NON-FOOD CONTACT SURFACES

A. Rinse Method

Prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

B. Immersion Method

Prepare a sufficient quantity of sanitizing solution in an immersion tank, to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

C. Spray/Fog Method

Preclean all surfaces after use. Prepare a 200 ppm available chlorine sanitizing solution of sufficient size and apply using spray or fogging equipment which can resist hypochlorite solutions. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

22. DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES

A. Rinse Method

Prepare a disinfecting solution to provide approximately 600 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the disinfecting solution, maintaining contact with the solution for at least 10 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

B. Immersion Method

Prepare a disinfecting solution in an immersion tank, to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the disinfecting solution for at least 10 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

23. SANITIZATION OF POROUS NON-FOOD CONTACT SURFACES

A. Rinse Method

Prepare a sanitizing solution to provide approximately 600 ppm available chlorine by weight. Clean surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

B. Immersion Method

Prepare a sanitizing solution, in an immersion tank, to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

C. Spray/Fog Method

After cleaning, sanitize non-food contact surfaces with 600 ppm available chlorine, using spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

24. SEWAGE AND WASTEWATER EFFLUENT TREATMENT

The disinfection of sewage effluent must be evaluated by determining the total number of coliform bacteria and/or fecal coliform bacteria, as determined by the Most Probable Number (MPN) procedure, if the chlorinated effluent has been reduced to or below the maximum permitted by the controlling regulatory jurisdiction.

On the average, satisfactory disinfection of secondary wastewater effluent can be obtained when the chlorine residual is 0.5 ppm after 15 minutes contact although the chlorine residual is the critical factor in disinfection, the importance of correlating chlorine residual with bacterial kill must be emphasized. The MPN of the effluent, which is directly related to the water quality standards requirements, should be the final and primary standard and the chlorine residual should be considered an operating standard valid only to the extent verified by the coliform quality of the effluent.

The following are critical factors affecting wastewater disinfection:

1. *Mixing:* It is imperative that the product and the wastewater be instantaneously and completely flash mixed to assure reaction with every chemically active soluble and particulate component of the wastewater.
2. *Contacting:* Upon flash mixing, the flow through the system must be maintained.
3. *Dosage/Residual Control:* Successful disinfection is extremely dependent on response to fluctuating chlorine demand to maintain a predetermined, desirable chlorine level. Secondary effluent should contain 0.2 to 1.0 ppm chlorine residual after a 15 to 30 minute contact time. A reasonable average of residual chlorine is 0.5 ppm after 15 minutes contact time.

25. SEWAGE AND WASTEWATER TREATMENT

A. Effluent Slime Control

Apply a 100 to 1000 ppm available chlorine solution at a location which will allow complete mixing. Once control is evident, apply a 15 ppm available chlorine solution.

B. Filter Beds - Slime Control

Remove filter from service, drain to a depth of 1 ft. above filter sand, and add 80 oz. of 12.5% DIXICHLOR per 20 sq./ft. evenly over the surface. Wait 30 minutes before draining water to a level that is even with the top of the filter. Wait for 4 to 6 hours before completely draining and backwashing filter. (Using ratio method to calculate concentration, 5.25%, or 10% DIXICHLOR can be used.)

26. SANITIZATION OF DIALYSIS MACHINES

Flush equipment thoroughly with water prior to using this product. Thoroughly mix DIXICHLOR to 10 gallons of water to obtain at least 600 ppm available chlorine. Immediately use this product in the hemodialysate system allowing for a minimum contact time of 15 minutes at 20°C. Drain the system of the sanitizing solution and thoroughly rinse with water. Discard and DO NOT reuse the spent sanitizer. Rinsate must be monitored with a suitable test kit to insure that no available chlorine remains in the system.

This product is recommended for decontaminating single and multipatient hemodialysate systems. This product has been shown to be an effective disinfectant (virucide, fungicide, bactericide, pseudomonicide) when tested by APAC and EPA test methods. This product may not totally eliminate all vegetative microorganisms in hemodialysate delivery systems due to the construction and/or assembly, but can be relied upon to reduce the number of microorganisms to acceptable levels when used as directed. This product should be used in a disinfectant program which includes bacteriological monitoring of the hemodialysate delivery system. This product is NOT recommended for use in hemodialysate or reverse osmosis (RO) membranes.

Consult the guidelines for hemodialysate systems which are available from the Hepatitis Laboratories, DCD, Phoenix, AR 85021.

27. SPAS, HOT-TUBS, IMMERSION TANKS, ETC.

A. Spas/Hot-Tubs

Using Chart or Formula, calculate and approximate an amount of DIXICHLOR per 1000 gallons of water to obtain a free available chlorine concentration of 5 ppm, as determined by a suitable chlorine test kit. Adjust and maintain pool water pH to between 7.2 and 7.8. Some oils, lotions, fragrances, cleansers, etc. may cause foaming or cloudy water as well as reduce the efficiency of the product.

Maintaining the Water: To maintain the water, apply DIXICHLOR solution over the surface to maintain a chlorine concentration of 5 ppm.

After Each Use: Shock treat to control odor and algae, using DIXICHLOR at a rate of 8 ounces of 12.5% to 500 gallons of water. (Use chart or formula when using 5.25%, or 10% DIXICHLOR.)

Periods of Disuse: During periods of disuse, add DIXICHLOR daily to maintain a 3 ppm chlorine concentration.

B. Hubbard and Immersion Tanks

Before patient use add DIXICHLOR to obtain a chlorine residual of 25 ppm, as determined by a suitable test kit. Adjust and maintain the water pH to between 7.2 and 7.6. After each use drain the tank. Add 5 ounces of 12.5% DIXICHLOR to a bucket of water and circulate this solution through the agitator of the tank for 15 minutes and then rinse out the solution. Clean tank thoroughly and dry with clean cloths. (Use chart or formula when using 5.25%, or 10% DIXICHLOR.)

C. Hydrotherapy Tanks

Add DIXICHLOR to the water to obtain a chlorine residual of 1 ppm, as determined by a suitable chlorine test kit. Pool should not be entered until the chlorine residual is below 3 ppm. Adjust and maintain the water pH to between 7.2 and 7.6. Operate pool filter continuously. Drain pool weekly, and clean before refilling.

28. SWIMMING POOL WATER DISINFECTION

A. New Pool or Spring Start-Up

For a new pool or spring start-up, superchlorinate with DIXICHLOR to yield a 5 to 10 ppm available chlorine by weight. Check the level of available chlorine with a test kit. Adjust and maintain pool water pH to between 7.2 to 7.6. Adjust and maintain the alkalinity of the pool to between 50 to 100 ppm.

B. Maintaining the Pool

To maintain the pool, add manually or by a feeder device a sufficient quantity of DIXICHLOR to yield an available chlorine residual between 0.6 to 1.0 ppm by weight. Stabilized pools should maintain a residual of 1.0 to 1.5 ppm available chlorine. Test the pH, available chlorine residual, and alkalinity of the water frequently with appropriate test kits. Frequency of water treatment will depend upon temperature and number of swimmers.

C. Superchlorination

Every 7 (seven) days, or as necessary, superchlorinate the pool with DIXICHLOR to yield a 5 to 10 ppm available chlorine by weight. Check the level of available chlorine with a test kit. Do not reenter pool until the chlorine residual is between 1.0 to 3.0 ppm.

D. End of Swimming Pool Season

At the end of the swimming pool season or when the water is to be drained from the pool, chlorine must be allowed to dissipate from treated pool water before discharge. Do not chlorinate the pool within 24 hours prior to discharge.

E. Winterizing Pool

While water is still clear, and while filter system is in service, apply DIXICHLOR in quantities to obtain a 3 ppm available chlorine residual, as determined by a suitable test kit. Cover pool, prepare heater, filter and heater components for winter by following manufacturers' instructions.

F. Swimming Pool Disinfection Chart

Method	Ounce DIXICHLOR/10,000 Gallons Water		
	12.5%	10%	5.25%
Start-Up	52-104	64-128	122-244
Maintenance	11	13	25
Superchlorination	52-104	64-128	122-244
Winterizing	30	39	75

29. ZEBRA MUSSEL CONTROL AGENT

(Approved for use with DIXICHLOR 10.0% and DIXICHLOR MAX 12.5%)
 Zebra mussels can detect chemical changes in their environment and "clamp shut" for a period of three weeks until those changes are no longer detected or they die through lack of respiration. Chemical treatment times and concentrations may vary because of the mussel's biological ability of detection; the extent of mussel contamination; and the design variations of systems. Using sodium hypochlorite in this manner may require revisions to existing federal, state, or local discharge permit(s) and/or the addition of dechlorination equipment.

A. Single Exposure

To control zebra mussels, add appropriate amount of DIXICHLOR to obtain a residual chlorine concentration of 10 to 20 ppm per 10,000 gallons of water in the system. For best results, treat during breeding season and/or at the end of season for at least 30 days. The release of zebra mussels for weeks after this method of treatment is not uncommon.

B. Semi Continuous Exposure

To control zebra mussels, add appropriate amount of DIXICHLOR for 15 - 30 minutes a day to obtain a residual chlorine concentration of 5 to 10 ppm per 10,000 gallons of water in the system. For best results, initiate treatment during breeding season (June to September).

C. Continuous Exposure

To control zebra mussels, add appropriate amount of DIXICHLOR through a continuous feed system to obtain a residual chlorine concentration of 5 to 10 ppm per 10,000 gallons of water in the system. For best results, apply during the breeding season (June to September).

D. Zebra Mussel Control Treatment Table

TREATMENT METHOD	Ounce DIXICHLOR/10,000 Gallons Water	
	12.5%	10%
Single Dosage	100 - 200	128 - 256
Semi-Continuous Dosage	52 - 104	68 - 135
Continuous Dosage	52 - 104	68 - 135

30. SANITIZING AGENT FOR DINNERWARE AND UTENSILS

(Approved for use with DIXICHLOR 10.0% and DIXICHLOR MAX 12.5%) This product can be used as a sanitizing rinse of PRE-CLEANED, hand washed or machine washed dinnerware and food utensils at restaurants, hotels, and resorts. A solution of 100 ppm available chlorine may be used if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 100 ppm. If no test kit is available, prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight. For hand dishwashing, exposure to solution should be at least 1 minute or as required by local or state health departments. For machine washing, exposure time should be at least 2 minutes or delegated by manufacturer's specifications.

Dixichlor may be used as a bleaching and destaining agent in commercial dishwashing machines. Do not use this product as a final rinse on silver or silver plate as severe tarnishing will occur.

31. WATER FLOODS AND PRODUCED WATER

(Approved for use with DIXICHLOR MAX 12.5%)

Dixichlor should be added to water flood system at a point of uniform mixing.

INITIAL TREATMENT: When the system is noticeably contaminated, add 0.1 to 8.0 gallons of Dixichlor to the system per 1,000 gallons flood water (10 to 1,000 ppm chlorine). Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add 0.1 to 8.0 gallons of Dixichlor to 1,000 gallons flood water (10 to 1,000 ppm chlorine) to the system weekly, or as needed to maintain control.

32. OIL FIELD APPLICATIONS

(Approved for use with DIXICHLOR MAX 12.5%)

A. DRILLING, COMPLETION, FRAC FLUIDS AND WORKOVER FLUIDS

Dixichlor antimicrobial should be added to a drilling fluid system at a point of uniform mixing such as the circulating mud tank.

Initial treatment: Add 0.1 to 8.0 gallons Dixichlor per 1,000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on the severity of contamination.

Maintenance Dosage: Maintain a concentration of Dixichlor by adding 0.1 to 8.0 gallons of Dixichlor per 1,000 gallons of additional fluid (10 to 1,000 ppm chlorine), or as needed, depending on the severity of contamination.

B. PACKER FLUIDS

Dixichlor should be added to a packer fluid at a point of uniform mixing such as a circulating holding tank. Add 0.1 to 8.0 gallons Dixichlor per 1,000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on the severity of contamination. Seal the treated packer fluid in the wall between the casing and production tube.

C. HYDROTESTING

Water used to hydrotest pipelines or vessels should contain 0.1 to 8.0 gallons Dixichlor per 1,000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on water quality and length of time the equipment will remain idle.

D. PIPELINE PIGGING AND SCRAPING OPERATIONS

Add Dixichlor to a slug of water immediately following the scraper (ideally this water volume can be kept to a minimum and contained between the scraper and a trailing pig). Sufficient Dixichlor should be added to produce a concentration of 0.2 to 20 gallons Dixichlor per 100 gallons of water (250 to 25,500 ppm chlorine), depending on the length of pipeline and severity of biofouling.

33. STORAGE AND DISPOSAL:

PESTICIDE STORAGE: Store in a cool, dry area away from direct sunlight. In case of spill, flood area with large quantities of water.

CONTAINER HANDLING:

REFILLABLE CONTAINER - Refill this container with Hypochlorite Solution only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

CONTAINER CLEANING - Triple rinse empty container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment of mix tank and drain for 10 seconds after the flow begins to drip. Fill the container the container full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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. Product or rinsate that cannot be used should be diluted with water and disposed of in a sanitary sewer. Do not contaminate food or feed by storage, disposal or cleaning equipment.

OR

PESTICIDE STORAGE: Store in a cool, dry area away from direct sunlight. In case of spill, flood area with large quantities of water.

CONTAINER HANDLING:

NON-REFILLABLE CONTAINER - Do not reuse or refill this container.

CONTAINER CLEANING - Triple rinse empty container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment of mix tank and drain for 10 seconds after the flow begins to drip. Fill the container the container full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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. Product or rinsate that cannot be used should be diluted with water and disposed of in a sanitary sewer. Do not contaminate food or feed by storage, disposal or cleaning equipment.