



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Antimicrobials Division (7510P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

9768-55

Date of Issuance:

5/11/15

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

T-CHLOR 5.25

Name and Address of Registrant (include ZIP Code):

Lawrence E. Thatcher  
Chief Executive Officer  
Thatcher Company  
1905 Fortune Road  
Salt Lake City, UT 84104

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

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

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

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

Demson Fuller, Product Manager 32  
Regulatory Management Branch II  
Antimicrobials Division (7510P)

Date:

5/11/15

2. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 9768-55.”
3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 05/05/2015

If you have any questions, please contact Srinivas Gowda at (703) 308-6354 or [gowda.srinivas@epa.gov](mailto:gowda.srinivas@epa.gov).

Sincerely,



Demson Fuller, Product Manager 32  
Regulatory Management Branch II  
Antimicrobials Division (7510P)  
Office of Pesticide Programs

Enclosure: Stamped Label

# T-CHLOR 5.25

## HIGH TEST SODIUM HYPOCHLORITE SOLUTION DISINFECTANT – BLEACH – DEODORANT

ACTIVE INGREDIENT (Sodium Hypochlorite): 5.25%  
OTHER INGREDIENTS: 94.75%  
TOTAL: 100.0%

**KEEP OUT OF REACH OF CHILDREN**  
**DANGER**

**ACCEPTED**

05/11/2015

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 9768-55

to maintain a chlorine concentration of 5 ppm. **AFTER EACH USE:** Shock treat to control odor and algae, using product at a rate of 19 fl. oz. to 500 gallons of water. **PERIODS OF DISUSE:** During extended periods of disuse, add 7.2 fl oz of product daily per 1,000 gallons of water to maintain 3 ppm chlorine concentration.

### SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES:

**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 ensure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 2.4 fl. oz. of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 4.8 fl. oz. of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse the equipment in the sanitizing solution for at least 2 minutes to 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. **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 ensure that the available chlorine does not fall below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 2.4 fl. oz. of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 4.8 fl. oz. of this product with 10 gallons of water 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. **FLOW/PRESSURE METHOD:** Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 4.8 fl. oz. product with 10 gallons of water. 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 solution from drain valve and test with a chlorine kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine. Drain solution from equipment. Do not rinse with water after treatment. **CLEAN IN PLACE METHOD:** Thoroughly clean equipment after use. Prepare a volume of 200 ppm available chlorine sanitizer solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 4.8 fl. oz. product with 10 gallons of water. 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 ensure 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.

### DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES:

**RINSE METHOD:** Prepare a disinfection solution by thoroughly mixing 14.3 fl. oz. of this product with 10 gallons of water 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. **IMMERSION METHOD:** Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 14.3 fl. oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to using equipment, 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.

### WATER FLOODS AND PRODUCED WATER:

This product must be added to a water flood system at a point of uniform mixing. **INITIAL TREATMENT:** When the system is noticeably contaminated, add 0.12 to 17 gallons of this product to the system per 1000 gallons flood water (10 to 1,000 ppm chlorine). Repeat until control is achieved. **SUBSEQUENT DOSE:** When microbial control is evident, add 0.2 to 17 gallons of this product per 1000 gallons flood water (10 to 1000 ppm chlorine) to the system weekly, or as needed to maintain control.

### DRILLING, COMPLETION, FRAC FLUIDS AND WORKOVER FLUIDS:

This product must be added to a drilling fluid system at a point of uniform mixing such as a circulating mud tank. **INITIAL TREATMENT:** Add 0.2 to 17 gallons this product per 1000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on the severity of contamination. **MAINTENANCE DOSAGE:** Maintain a concentration of this product by adding 0.2 to 17 gallons of this product per 1000 gallons of additional fluid (10 to 1,000 ppm chlorine), or as needed, depending on the severity of contamination.

**PACKER FLUIDS:** This product must be added to a packer fluid at a point of uniform mixing such as a circulating holding tank. Add 0.2 to 17 gallons of this product per 1000 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.

**HYDROTESTING:** This product must be added to a packer fluid at a point of uniform mixing such as a circulating holding tank. Add 0.2 to 17 gallons of this product per 1000 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.

**PIPELINE PIGGING AND SCRAPING OPERATIONS:** Add this product 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 amounts of this product should be added to produce a concentration of 0.6 to 42 gallons of this product per 100 gallons of water (250 to 25,500 ppm chlorine), depending on the length of the pipeline and the severity of biofouling.

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Do not ship with Food, Feed, Drugs, or Clothing. **PESTICIDE STORAGE:** Store this product in a cool, dry area, away from direct sunlight and heat to avoid deterioration. In case of a spill, flood areas with large quantities of water. **PESTICIDE DISPOSAL:** Products or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer. **CONTAINER HANDLING:** Refillable container. Refill this container with pesticide 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. To clean the container prior to refilling or disposal, use a triple rinse wash as follows: Empty the remaining contents from this container into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution. Stand the container on its 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.

**ADDITIONAL DIRECTIONS FOR USE CONTAINED IN SUPPLEMENTARY LABELING BOOKLET  
20140724-525-1**

**REFER TO AWWA B300 – HYPOCHLORITES FOR RECOMMENDED STORAGE AND HANDLING PRACTICES**

EPA Est No. 9768-UT-1  
EPA Reg No. 9768-LL

**HYPOCHLORITE SOLUTION  
UN1791**



DRINKING WATER TREATMENT CHEMICAL  
ANSI/NSF 60  
<35Y2>

**NET CONTENTS 275 GALLONS**

FIRST AID	
IF IN EYES	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
IF ON SKIN, CLOTHES	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of soap and water for 15-20 minutes.</li> <li>• Call a poison control center for treatment advice.</li> </ul>
IF SWALLOWED	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
IF INHALED	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
HOT LINE	
Have the product container or label with you when calling Poison Control Center or doctor or for getting treatment. You may also contact CHEMTREC 1-800-424-9300	

### 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 when handling this product. Wash after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. 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, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

#### PHYSICAL AND CHEMICAL HAZARDS

Strong oxidizing agent. Mix product only with water according to label directions. Do not mix this product with chemicals (e.g., ammonia, acids, detergents, etc.) or organic matter (e.g., urine, feces, etc.) which will release chlorine and other hazardous gases which are irritating to eyes, lungs, and mucous membranes.

#### DIRECTIONS FOR USING T-CHLOR 5.25

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Note: This product degrades with age. Use a chlorine test kit and increase dosage as necessary to obtain the required level of available chlorine.

**SWIMMING POOL WATER DISINFECTION: NEW POOL OR SPRING START-UP:** Superchlorinate with 124 to 248 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. Adjust and maintain the pool water pH to between 7.2 and 7.6. Adjust and maintain the alkalinity of the pool to achieve between 50 and 100 ppm of available chlorine in the water. **MAINTAINING THE POOL:** To maintain the pool, add manually or by a feeder device 26.2 fl oz of this product to yield an available chlorine residual between 0.6 and 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 on temperature and number of swimmers. Re-entry into treated swimming pools is prohibited above levels of 4 ppm of chlorine due to the risk of bodily harm. **SUPERCHLORINATION:** Every 7 days, or as necessary, superchlorinate the pool with 124 to 248 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. **END OF THE SWIMMING SEASON:** At the end of the swimming pool season, or when water is 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 and while filter system is in service, clean, apply 7.2 oz. of product per 1,000 gallons of water, 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.

#### SPA, HOT TUBS, IMMERSION TANKS, ETC

**SPAS/HOT-TUBS:** Apply 12 fl. oz. of this product per 1,000 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, cleaners, etc. may cause foaming or cloudy water as well as reduce the efficiency of this product. Do not re-enter spa until chlorine residual drop to 5 ppm due to risk of bodily harm. **MAINTAINING THE WATER:** To maintain the water, apply product over the surface top

**THATCHER COMPANY  
SALT LAKE CITY, UTAH**

T-CHLOR 5.25  
 SODIUM HYPOCHLORITE SOLUTION  
 DISINFECTANT – BLEACH – DEODORANT

ACTIVE INGREDIENT:	5.25%
Sodium hypochlorite	
OTHER INGREDIENTS:	94.75%
TOTAL	100.0%

KEEP OUT OF REACH OF CHILDREN  
 DANGER

First Aid	
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 eye.
	Call a poison control center or doctor for treatment advice.
IF ON SKIN, CLOTHES	Take off contaminated clothing.
	Rinse skin immediately with plenty of soap and water for 15-20 minutes.
	Call a poison control center for treatment advice.
IF SWALLOWED	Call a poison control center or doctor immediately for treatment advice.
	Have person sip a glass of water if able to swallow.
	Do not induce vomiting unless told to do so by the poison control center or doctor.
	Do not give anything by mouth to an unconscious person.
IF INHALED	Move person to fresh air.
	If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible.
	Call a poison control center or doctor for further treatment advice.
HOT LINE	
Have the product container or label with you when calling Poison Control Center or doctor or for getting treatment. You may also contact CHEMTREC 1-800-424-9300	

**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 when handling this product. Wash after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. 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, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

**PHYSICAL AND CHEMICAL HAZARDS:**

Strong oxidizing agent. Mix product only with water according to label directions. Do not mix this product with chemicals (e.g., ammonia, acids, detergents, etc.) or organic matter (e.g., urine, feces, etc.) which will release chlorine and other hazardous gases which are irritating to eyes, lungs, and mucous membranes

**DIRECTIONS FOR USING THIS PRODUCT:**

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Note: This product degrades with age. Use a chlorine test kit and increase dosage as necessary to obtain the required level of available chlorine.

**SWIMMING POOL WATER DISINFECTION:**

**NEW POOL OR SPRING START-UP:** Superchlorinate with 124 to 248 fl 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. Adjust and maintain the pool water pH to between 7.2 and 7.6. Adjust and maintain the alkalinity of the pool to achieve between 50 and 100 ppm of available chlorine in the water. Re-entry into treated swimming pools is prohibited above levels of 4 ppm of chlorine due to the risk of bodily harm.

**MAINTAINING THE POOL:** To maintain the pool, add manually or by a feeder device 26.2 fl oz of this product to yield an available chlorine residual between 0.6 and 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 on temperature and number of swimmers. Re-entry into treated swimming pools is prohibited above levels of 4 ppm of chlorine due to the risk of bodily harm.

**SUPERCHLORINATION:** Every 7 days, or as necessary, superchlorinate the pool with 124 to 248 fl 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.

**END OF THE SWIMMING SEASON:** At the end of the swimming pool season, or when water is 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 and while filter system is in service, clean, apply 7.2 fl oz. of product per 1,000 gallons of water, 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 manufacturers' instructions.

**SPA, HOT TUBS. IMMERSION TANKS, ETC:**

**SPAS/HOT-TUBS:** Apply 12 fl oz. of this product per 1,000 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, cleaners, etc. may cause foaming or cloudy water as well as reduce the efficiency of this product. Re-entry into treated swimming pools is prohibited above levels of 5 ppm of chlorine due to the risk of bodily harm.

**MAINTAINING THE WATER:** To maintain the water, apply 12 fl oz of product per 1,000 gallons of water over the surface to maintain a chlorine concentration of 5 ppm.

**AFTER EACH USE:** Shock treat with 19 fl oz of this product per 500 gallons of water to control odor and algae.

**PERIODS OF DISUSE:** During extended periods of disuse, add 7.2 fl oz of product daily per 1,000 gallons of water to maintain 3 ppm chlorine concentration.

**HUBBARD AND IMMERSION TANKS:** Add 12 fl oz of this product per 200 gallons of water before patient use 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 12 fl oz. 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.

**HYDROTHERAPY TANKS:** Add 2.4 fl oz. of this product per 1,000 gallons of 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.

**SANITIZATION OF POROUS FOOD CONTACT SURFACES**

**RINSE METHOD:** Prepare a 600 ppm solution by thoroughly mixing 14.3 fl oz of this product with 10 gallons of water. Clean surfaces in the normal manner. Thoroughly rinse all surfaces with the 600 ppm solution, maintaining contact for at least 2 minutes. Prepare a 200 ppm sanitizing solution by thoroughly mixing 4.8 fl oz of this production with 10 gallons of water. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.



**IMMERSION METHOD:** Prepare a 600 ppm solution by thoroughly mixing 14.3 fl oz of this product with 10 gallons of water. Clean surfaces in the normal manner. Immerse equipment in the 600 ppm solution for at least 2 minutes. Prepare a 200 ppm sanitizing solution by thoroughly mixing 4.8 fl oz of this production with 10 gallons of water. Prior to using equipment, immerse all surfaces with a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.

**SPRAY/FOG METHOD:** Preclean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing this product in a ratio of 14.3 fl 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 4.8 oz. of this product with 10 gallons of water.

### **SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES:**

**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 ensure that the available chlorine does not fall below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 2.4 fl oz. of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 4.8 fl oz. of this product with 10 gallons of water 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.

**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 ensure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 2.4 fl oz. of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 4.8 fl oz. of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse the equipment in the sanitizing solution for at least 2 minutes to 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.

**FLOW/PRESSURE METHOD:** Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 4.8 fl oz. product with 10 gallons of water. 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 solution from drain valve and test with a chlorine kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine. Drain solution from equipment. Do not rinse with water after treatment.

**CLEAN IN PLACE METHOD:** Thoroughly clean equipment after use. Prepare a volume of a 200 ppm available chlorine sanitizer solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 4.8 fl oz production with 10 gallons of water. 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 ensure 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.

**SPRAY METHOD:** Preclean all surfaces after use. Use 200 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 4.8 fl oz. product with 10 gallons of water. Prepare a 600 ppm solution by thoroughly mixing the product in a ratio of 14.3 fl oz. product with 10 gallons of water. Use spray or fog 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.

#### **DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES:**

**RINSE METHOD:** Prepare a disinfection solution by thoroughly mixing 14.3 fl oz. of this product with 10 gallons of water 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.

**IMMERSION METHOD:** Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 14.3 fl oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to using equipment, 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.

#### **SANITIZATION OF POROUS NON-FOOD CONTACT SURFACES**

**RINSE METHOD:** Prepare a sanitizing solution by thoroughly mixing 14.3 fl oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces with the sanitizing solution, maintaining contact for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

**IMMERSION METHOD:** Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 14.3 fl oz. of this product with 10 gallons of water 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. Do not rinse equipment with water after treatment.

**SPRAY METHOD:** Preclean all surfaces after use. Prepare a 200 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 14.3 fl oz. of this product with 10 gallons of water. Use spray equipment which can resist sodium hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Prior to using equipment, thoroughly spray all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

## **SEWAGE & 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.

## **SEWAGE AND WASTEWATER TREATMENT**

**EFFLUENT SLIME CONTROL:** Apply a 100 to 1,000 ppm available chlorine solution at a location which will allow complete mixing. Prepare this solution by mixing 23.8 to 238 fl oz. of this product with 100 gallons of water. Once control is evident, apply a 15 ppm available chlorine solution. Prepare this solution by mixing 7.2 fl oz. of this product with 100 gallon of water.

**FILTER BEDS - SLIME CONTROL:** Remove filter from service, drain to a depth of 1 ft. above filter sand, and add 190 fl oz. of product 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.

## **DISINFECTION OF DRINKING WATER (POTABLE)**

**(PUBLIC/INDIVIDUAL/EMERGENCY SYSTEMS)**

**PUBLIC SYSTEM:** Mix a ratio of 2.4 fl 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 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 2.4 fl oz. of this product into 10 gallons of water. After covering the well, pour the sanitizing solution into the well through both the pipe sleeve opening and the pipeline. Wash the interior 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.

**INDIVIDUAL WATER SYSTEMS:**

**DRILLED, DRIVEN & BORED WELLS:** Run pump until water is as free from turbidity as possible. Pour a 100 ppm available chlorine sanitizing solution into the well. This solution can be made by thoroughly mixing 2.4 fl oz. of this product into 10 gallons of water. 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 from introduction of the sanitizer into the well. Consult your local Health Department for further details.

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

**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 3 drops of this product 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.

**PUBLIC WATER SYSTEMS**

**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.

**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.

**NEW TANKS, BASINS, ETC.:** Remove all physical soil from surfaces. Place 48 fl oz. of this product 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.

**NEW FILTER SAND:** Apply 190 fl oz. of this product 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.

**NEW WELLS:** Flush the casing with a 50 ppm available chlorine solution of water containing 12 fl oz. of this product for each 100 gallons of water. The solution should be pumped or fed by gravity into the well after thorough mixing with agitation. This 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.

**EXISTING EQUIPMENT:** Remove equipment from service, thoroughly clean surfaces of all physical soil. Sanitize by placing 50 fl 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 solution containing 12 fl oz. of this product for each 5 gallons of water (approximately 1000 ppm available chlorine). After drying, flush with water and return to service.

### **EMERGENCY DISINFECTION AFTER FLOODS**

**WELLS:** Thoroughly flush contaminated casing with a 500 ppm available chlorine solution. Prepare this solution by mixing 12 fl oz. of this product with 10 gallons of water. 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.

**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.

**BASINS, TANKS, FLUMES, ETC.:** Thoroughly clean all equipment, then apply 48 fl oz. of product per 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 12 oz. of this product for each 5 gallons of water (1000 ppm available chlorine). Allow to stand for 2 to 4 hours, flush and return to service.0

**FILTERS:** When the sand filter needs replacement, apply 190 fl oz. of this product per 150 to 200 cubic feet of sand. When the filter is severely contaminated, distribute additional product over the surface at the rate of 190 fl 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 back washed of mud and silt, apply 190 fl oz. of this product 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 back washing.

**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.

### **EMERGENCY DISINFECTION AFTER FIRES**

**CROSS CONNECTIONS OR EMERGENCY CONNECTIONS:** Set up hypochlorination or gravity feed equipment 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.

### **EMERGENCY DISINFECTION AFTER DROUGHTS**

**SUPPLEMENTARY WATER SUPPLIES:** Set up gravity or mechanical hypochlorite feeders 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.

**WATER SHIPPED IN BY TANKS, TANK CARS, TRUCKS, ETC.:** Thoroughly clean all containers and equipment. Spray a 500 ppm available chlorine solution and rinse with potable water after 5 minutes. This solution is made by mixing 12 fl. oz. of this product for each 10 gallons of water. During the filling of the containers, dose with sufficient amounts of this product to provide at least a 0.2 ppm chlorine residual. Use a chlorine test kit.

### **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.

### **COOLING TOWER/EVAPORATIVE CONDENSER WATER**

**SLUG FEED METHOD:** Initial Dose: When system is noticeably fouled, apply 124 to 248 fl. oz. of this product 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 26.2 fl. oz. of this product 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.

**INTERMITTENT FEED METHOD:** Initial Dose: When system is noticeably fouled, apply 124 to 248 fl oz. of this product 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 blow down.

Subsequent Dose: When microbial control is evident, add 16.2 fl. oz. of this product 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 blow down. Badly fouled systems must be cleaned before treatment is begun.

**CONTINUOUS FEED METHOD:** Initial Dose: When system is noticeably fouled, apply 124 to 248 fl. oz. of this product per 10,000 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 2.4 fl. oz. of this product per 1,000 gallons of water lost by blow down to maintain a 1 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

## **LAUNDRY SANITIZERS**

### **HOUSEHOLD LAUNDRY SANITIZERS**

**IN SOAKING SUDS:** Thoroughly mix 4.8 fl. oz. of this product to 10 gallons of 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.

**IN WASHING SUDS:** Thoroughly mix 4.8 fl. oz. of this product in 10 gallons of wash water containing clothes to provide 200 ppm available chlorine. Wait 5 minutes, then add soap or detergent and start the wash/rinse cycle.

**COMMERCIAL LAUNDRY SANITIZERS:** Wet fabrics or clothes should be spun dry prior to sanitization. Thoroughly mix 4.8 fl. oz. of this product with 10 gallons of water to yield 200 ppm available chlorine. Promptly after mixing the sanitizer, add the solution into the prewash 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 of this product if the available chlorine level has dropped below 200 ppm.

## **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. A 1000 ppm solution can be made by thoroughly mixing 26.2 fl. oz. of this product with 10 gallons of water. Immerse all halters, ropes and other types of equipment used in handling and restraining animals or 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.



**PULP AND PAPER MILL PROCESS WATER SYSTEMS**

**SLUG FEED METHOD:** Initial Dose: When system is noticeably fouled, apply 124 to 248 fl. oz. of this product 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 26.2 fl. oz. of this product 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.

**INTERMITTENT FEED METHOD:** Initial Dose: When system is noticeably fouled, apply 124 to 248 fl. oz. of this product 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 blow down.

Subsequent Dose: When microbial control is evident, add 26.2 fl. oz. of this product 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 blow down. Badly fouled systems must be cleaned before treatment is begun.

**CONTINUOUS FEED METHOD:** Initial Dose: When system is noticeably fouled, apply 124 to 248 fl. oz. of this product 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 2.4 fl. oz. of this product per 1,000 gallons of water lost by blow down to maintain a 1 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

**AGRICULTURE USES:**

**DISINFECT LEAFCUTTING BEE CELLS OR BEE BOARDS:** Disinfect leafcutting 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. This solution is made by thoroughly mixing 2.4 Tsp. of this product to 100 gallons of water. 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.

**FOOD EGG SANITIZATION:** Thoroughly clean all eggs. Thoroughly mix 4.8 fl. oz. of this product with 10 gallons of warm water to produce a 200 ppm available chlorine solution. The sanitizer temperature should not exceed 130 °F. 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 re-used to sanitize eggs.

**FRUIT & VEGETABLE WASHING:** Thoroughly clean all fruits and vegetables in a wash tank. Thoroughly mix 12 fl. oz. of this product in 200 gallons of 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.

**POST HARVEST PROTECTION:** Potatoes can be sanitized after cleaning and prior to storage by spraying with a sanitizing solution at a level of 1 gallon of sanitizing solution per ton of potatoes. Thoroughly mix 2.4 fl. oz. of this product to 2 gallons of water to obtain 500 ppm available chlorine.

**MEAT AND POULTRY PLANTS:** Chlorine may be present in processing water of meat and poultry plants at concentrations up to 5 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 2.5 fl. oz. of this product in 200 gallons of water to make a sanitizing solution of 5 ppm available chlorine or 25 fl. oz. of this product in 200 gallons of water for 50 ppm available chlorine

### **AQUACULTURE USES**

**FISH PONDS:** Remove fish from ponds prior to treatment. Thoroughly mix 245 fl. oz. of this product to 10,000 gallons of water to obtain 10 ppm available chlorine. Add more product 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 0 ppm.

**FISH POND EQUIPMENT:** Thoroughly clean all equipment prior to treatment. Thoroughly mix 4.8 fl. oz. of this product to 10 gallons of water to obtain 200 ppm available chlorine. Porous equipment should soak for one hour.

**MAINE LOBSTER PONDS:** Remove lobsters, seaweed etc. from ponds prior to treatment. Drain the pond. Thoroughly mix 115.4 gallons of this product 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.

**CONDITIONING LIVE OYSTERS:** Thoroughly mix 12 fl. oz. of this product 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.

**CONTROL OF SCAVENGERS IN FISH HATCHERY PONDS:** Prepare a solution containing 200 ppm of available chlorine by mixing 4.8 fl. oz. of product 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.

**SANITIZATION OF DIALYSIS MACHINES:** Flush equipment thoroughly with water prior to using this product. Thoroughly mix 14.3 fl. oz. of this product 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 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 multi-patient hemodialysate systems. This product has been shown to be an effective disinfectant (virucide, fungicide, bactericide, pseudomonicide) when tested by AOAC and EPA test methods. This product may totally eliminate all vegetative microorganisms in hemodialysate delivery systems due to their 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, CDC, Phoenix, AR 85021.

This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly in the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or (2) contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. This product may be used to pre-clean or decontaminate critical or semi-critical medical devices prior to sterilization or high level disinfection.

**ASPHALT OR WOOD ROOFS AND SIDINGS:** To control fungus and mildew, first remove all physical soil by brushing and hosing with clean water, and apply a 5000 ppm available chlorine solution. Mix 12 fl. oz. of this product per gallon of water and brush or spray roof or siding. After 30 minutes, rinse by hosing with clean water.

**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 43 fl. oz. of this product 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.

**ARTIFICIAL SAND BEACHES:** To sanitize the sand, spray a 500 ppm available chlorine solution containing 12 fl. oz. of this product per 10 gallons of water at frequent intervals. Small areas can be sprinkled with a watering can.

**WATER FLOODS AND PRODUCED WATER:** This product must be added to a water flood system at a point of uniform mixing.

**INITIAL TREATMENT:** When the system is noticeably contaminated, add 0.12 to 17 gallons of this product to the system per 1000 gallons flood water (10 to 1,000 ppm chlorine). Repeat until control is achieved.

**SUBSEQUENT DOSE:** When microbial control is evident, add 0.2 to 17 gallons of this product per 1000 gallons flood water (10 to 1000 ppm chlorine) to the system weekly, or as needed to maintain control.

**DRILLING, COMPLETION, FRAC FLUIDS AND WORKOVER FLUIDS:** This product must be added to a drilling fluid system at a point of uniform mixing such as the circulating mud tank.

**INITIAL TREATMENT:** Add 0.2 to 17 gallons this product per 1000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on the severity of contamination.

**MAINTENANCE DOSAGE:** Maintain a concentration of this product by adding 0.2 to 17 gallons of this product per 1000 gallons of additional fluid (10 to 1,000 ppm chlorine), or as needed, depending on the severity of contamination.

**PACKER FLUIDS:** This product must be added to a packer fluid at a point of uniform mixing such as a circulating holding tank. Add 0.2 to 17 gallons of this product per 1000 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.

**HYDROTESTING:** Water used to hydrotest pipelines or vessels should contain 0.2 to 17 gallons of This product per 1000 gallons of additional fluid (10 to 1,000 ppm chlorine), depending on water quality and length of time the equipment will remain idle.

**PIPELINE PIGGING AND SCRAPING OPERATIONS:** Add this product 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 amounts of this product should be added to produce a concentration of 0.6 to 42 gallons of this product per 100 gallons of water (250 to 25,500 ppm chlorine), depending on the length of the pipeline and the severity of biofouling.

## **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal. Do not ship with Food, Feed, Drugs, or Clothing.

### **PESTICIDE STORAGE:**

Store this product in a cool, dry area, away from direct sunlight and heat to avoid deterioration. In case of a spill, flood areas with large quantities of water.

### **PESTICIDE DISPOSAL:**

Products or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer.

### **CONTAINER HANDLING:**

Refillable container. Refill this container with pesticide 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. To clean the container prior to refilling or disposal, use a triple rinse wash as follows: Empty the remaining contents from this container into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution. Stand the container on its 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.

EPA Est No. 9768-UT-1  
EPA Reg No. 9768-

THATCHER COMPANY, SALT LAKE CITY, UT 84104  
VERSION 20140724-525-1