72493-1 10-11-2001 1/8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OCT 11 2001

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

John B. Dubeck, Agent for Aries Chemical
Keller and Heckman
1001 G Street, N.W. Suite 500 West
Washington, D.C. 20001

SUBJECT: July 12, 2001 Amendment
Aries 0305
EPA Registration 72493-1

Dear Mr. Dubeck:

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

• Add the statement "See side panels for additional precautionary statements" to the front panel.

The following revisions have taken place:

• A name change has occurred. This product was formerly called 15% Sodium Hypochlorite. Our records will be updated accordingly and list John W. Dubeck as the company contact.
• The CSF dated July 2, 2001 is acceptable and will replace the September 16, 1999 CSF(s).
• Two new uses have been added and appear in compliance with earlier Reregistration Eligibility Decision documents.

Submit three (3) copies of your final printed labeling before distributing or selling the product bearing the revised labeling. A stamped copy of the label is enclosed for your records. If you have any questions regarding this letter, please contact Tom Luminello of my staff at (703) 308-8075.

Sincerely yours,

Robert S. Brennis
Product Manager 32
Regulatory Management Branch II
Antimicrobial Division (7510-C)

Enclosure

cc: John Jamula, RD (copy of agent letter)

ARIES 0305

Sodium Hypochlorite Solution

15% by volume, 12.5% by weight

EPA Reg. No. 72493-1

Active Ingredient: Sodium Hypochlorite..... 12.5%
Inert Ingredients:.....87.5%
Total.....100%

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DIRECTIONS FOR USE: 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.

PRECAUTIONARY STATEMENTS

DANGER: Corrosive. Causes irreversible eye damage and causes skin burns. Wear goggles or face shield and rubber gloves. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. Avoid breathing vapors. Vacate poorly ventilated areas. Do not return until strong odors have dissipated.

PHYSICAL & CHEMICAL HAZARDS

STRONG OXIDIZING AGENT: Mix only with water according to label directions. Mixing with gross filth such as feces, urine, etc., or with ammonia, acids, detergents or other chemicals will release chlorine gas, which is irritating to eyes, lungs and mucous membranes. A strong bleaching agent. Do not spill on clothing, carpet or other fabric.

FIRE AND EXPLOSION HAZARDS: Reacts vigorously with oxidizable materials. Will react with some metals which may release oxygen. Many reactions can cause fire and explosion. Toxic fumes can be liberated by heat.

NON-FLAMMABLE, EXTINGUISHING MEDIA: Use media suitable for surrounding fire. Keep material cool by using a water spray.

FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and full protection clothing. Avoid body contact and inhalation of fumes.

CHLORINE BLEACH

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: 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.

INHALATION: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Drink large amounts of water. DO NOT induce vomiting. Call a physician or poison control center immediately.

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 Pollution 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.

STORAGE & DISPOSAL

STORAGE: Store in a cool dry area, away from direct sunlight and heat to avoid deterioration. Do not reuse empty container. Do not contaminate food or feed by storage, disposal or cleaning of equipment.

SPILL/LEAK: If accidentally spilled, rinse immediately with plenty of water. Do not transfer contents to any metal container for storage.

DISPOSAL: DANGER AFTER THIS CONTAINER HAS BEEN EMPTIED IT MAY CONTAIN EXPLOSIVE OR HARMFUL VAPORS AND RESIDUE. KEEP AWAY FROM HEAT, SPARKS, AND FLAMES!

DO NOT CUT, PUNCTURE, OR WELD ON OR NEAR THIS CONTAINER.

DO NOT REUSE CONTAINER FOR ANY PURPOSE UNTIL COMMERCIALLY CLEANED.

ACCEPTED
OCT 11 2001
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 72493-1

Aries Chemical
P.O. Box 519, Depot St., Beaver Falls, NY 13305
Tel: 315-346-1489 FAX: 315-346-1658

HEALTH	3	REACTIVITY	2
FIRE	0	SPECIAL	F

FOR INDUSTRIAL USE ONLY
IN CASE OF EMERGENCY
CALL CHEMTREC 1-800-424-9300

ARIES 0305

Sodium Hypochlorite Solution

EPA Registration No. 72493-1

Active Ingredient: Sodium Hypochlorite..... 12.5% by weight
Inert Ingredients.....87.5%
Total.....100%

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DIRECTIONS FOR USE: 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.

DANGER

AFTER THIS CONTAINER HAS BEEN EMPTIED IT MAY CONTAIN EXPLOSIVE OR HARMFUL VAPORS AND RESIDUE. KEEP AWAY FROM HEAT, SPARKS, AND FLAMES! DO NOT CUT, PUNCTURE, OR WELD ON OR NEAR THIS CONTAINER. DO NOT REUSE CONTAINER FOR ANY PURPOSE UNTIL COMMERCIALLY CLEANED.

Table of Proportions to Obtain Desired ppm Available Chlorine

10 ppm = 1 fluid oz. per 100 gallons water
20 ppm = 1 fluid oz. per 20 gallons water
100 ppm = 1 fluid oz. per 10 gallons water
200 ppm = 2 fluid oz. per 10 gallons water
600 ppm = 6 fluid oz. per 10 gallons water
1000 ppm = 13 fluid oz. per 10 gallons water
5000 ppm = 63 fluid oz. per 10 gallons water
10,000 ppm = 125 fluid oz. per 10 gallons water

SANITIZATION OF POROUS FOOD AND NON-FOOD CONTACT SURFACES

For all application methods: Prepare a 600 ppm sanitizing solution. See Table of Proportions. **Porous surfaces that will come in contact with food must be subsequently treated with a 200 ppm rinse solution.** For both food-contact and non-food-contact surfaces, do not rinse equipment with water after treatment and do not soak equipment overnight.

Rinse Method: Clean surfaces in the normal manner, then rinse all surfaces thoroughly with the 600 ppm sanitizing solution. Allow sanitizer to remain in contact with the surface for at least 2 minutes.

Immersion Method: Clean equipment in the normal manner, then immerse equipment in the 600 ppm sanitizing solution for at least 2 minutes. Allow the sanitizer to drain.

Spray/Fog Method: Clean equipment in the normal manner. Using spray or fogging equipment that can resist hypochlorite solutions, thoroughly spray or fog all surfaces until wet with the 600 ppm solution, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Always empty and rinse spray/fog equipment with potable water after use.

SANITIZATION OF NONPOROUS NON-FOOD CONTACT SURFACES

For all application methods, prepare a 200 ppm available chlorine sanitizing solution. See Table of Proportions.

Rinse Method Clean equipment surfaces in the normal manner, and rinse all surfaces thoroughly with the sanitizing solution. Allow sanitizer to remain in contact with the surface for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Immersion Method: Clean equipment in the normal manner, and immerse equipment in the sanitizing solution for at least 2 minutes. Allow the sanitizer to drain. Do not rinse equipment with water after treatment.

Spray/Fog Method: Pre-clean all surfaces before sanitizing. Using spray or fogging equipment that can resist hypochlorite solutions, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Always empty and rinse spray/fog equipment with potable water after use.

SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES

For rinse and immersion methods only: A sanitizing 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 50 ppm. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 2 oz. of this product with 10 gal. of water to provide approximately 200 ppm available chlorine by weight. See Table of Proportions. Sanitizers used in automated systems may be re-used for general cleaning but may not be re-used for sanitizing purposes.

Rinse Method: Clean equipment surfaces in the normal manner, and rinse all surfaces thoroughly with the sanitizing solution. Allow solution to remain in contact

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Rev: 6/18/01

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3/8

with the surfaces for a 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.

Immersion Method: Clean equipment in the normal manner, then immerse the equipment in the sanitizing solution for at least 2 minutes. Allow the sanitizer to drain. Do not rinse equipment with water after treatment.

For Flow/Pressure and Clean-In-Place Methods: Prepare a sanitizing solution containing 200 ppm available chlorine (See Table of Proportions).

Flow/Pressure Method: Disassemble equipment and thoroughly clean before sanitizing. Assemble equipment as for normal operation. A volume of sanitizing solution equal to 110% of the capacity of the equipment will be needed. Pump solution through the system until full flow is obtained at all extremities; the system should be completely filled with sanitizer and all air removed from the system. Close drain valves and hold under pressure for a 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. If effluent test acceptable, drain solution completely.

Clean-In-Place Method: Thoroughly clean equipment before sanitizing. Prepare a volume of sanitizing solution equal to 110% of capacity of the equipment. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with 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. If effluent test acceptable, drain solution completely.

For Spray/Fog Method: Preclean all surfaces before sanitizing. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. See Table of Proportions. Use spray or fogging equipment that can resist hypochlorite solutions. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Before using equipment that was sanitized with a 600 ppm solution, rinse with a 200 ppm available chlorine solution. Always empty and rinse spray/fog equipment with potable water after use.

DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES

For each application method: Prepare a disinfecting solution by thoroughly mixing 6 ounces of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight.

Rinse Method: Clean equipment surfaces in the normal manner. Rinse all surfaces thoroughly with the disinfecting solution, maintaining contact with the solution for a least 10 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Immersion Method: Prepare a disinfecting solution in immersion tank. Clean equipment in the normal manner, and immerse equipment in the disinfecting solution for at least 10 minutes. Allow the disinfectant to drain. Do not rinse equipment with water after treatment.

SWIMMING POOL WATER DISINFECTION

Initial Dosage: For a new pool or spring start-up, superchlorinate with 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 until between 7.2 to 7.6, and the alkalinity until between 50 to 100 ppm.

Maintenance Dosage: To maintain the pool, add manually or by a feeder device 11 ounces 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 to obtain 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 of water discharge.

Winterizing Pools: Water should be clear and clean, and filter running. Add 3 ounces of product per 1000 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.

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SPAS, HOT-TUBS, IMMERSION TANKS, ETC.

Spas/Hot-Tubs: Some oils, lotions, fragrances, cleaners, etc. may reduce the efficacy of this product , and may cause foaming or cloudy water. Adjust and maintain spa/hot-tub water pH to between 7.2 and 7.8.

Initially, add 5 ounces of product per 1000 gallons of water to obtain a free available chlorine concentration of 5 ppm, as determined by a suitable chlorine test kit.

For maintenance, apply 5 oz. of product per 1000 gallons of water to maintain a chlorine concentration of 5 ppm.

After each use, shock treat with 8 ounces of this product per 500 gallons of water to control odor and algae

During extended periods of disuse, add 3 ounces of product daily per 1000 gallons of water to maintain a 3 ppm chlorine concentration.

Hubbard and Immersion Tanks: Adjust and maintain the water pH to between 7.2 and 7.6. Add 5 ounces 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. After each use drain the tank. Add 5 ounces 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 Pools: Adjust and maintain the water pH to between 7.2 and 7.6. Add 1 ounce of this product per 1000 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. Operate pool filter continuously. Drain pool weekly, and clean before refilling.

DISINFECTION OF DRINKING WATER (EMERGENCY/ PUBLIC/INDIVIDUAL SYSTEMS)

Public Systems: Prepare a 10 ppm solution of this product. See Table of Proportions. Begin feeding 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. Contact your local Health Department for further details.

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Individual Systems: DUG WELLS Upon completing installation of the casing, wash the interior of the casing (lining) with a 100 ppm available chlorine solution using a stiff brush. See Table of Proportions. After covering the well, pour the sanitizing solution into the well through both the pipe sleeve 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 requirements.

Individual 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 (See Table of Proportions). 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 the pump cylinder with the sanitizer. Drop the pipeline into the well, start the 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.

Individual Systems: 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 1 drop 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 several times.

PUBLIC WATER SYSTEMS

Mains: Thoroughly flush section to be sanitized by discharging water from hydrants. Permit a water flow of at least 2.5 feet per minute to continue under pressure while in[illegible]ing concentrated 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 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 tank or basin. Add 20 ounces 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 tank or basin and flush with potable water. Return water to original level.

New Filter Sand: Apply 80 ounces of this product for each 150 to 200 cubic feet of sand.

New Wells: Flush the casing with a 50 ppm available chlorine solution (See Table of Proportions). 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.

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

EMERGENCY WATER DISINFECTION AFTER FLOODS

Wells: Thoroughly flush contaminated casing with a 500 ppm available chlorine solution (See Table of Proportions). 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 [illegible] 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 (See Table of Proportions). In case of contamination from surface drainage, apply sufficient product 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 20 ounces 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 1000 ppm available chlorine solution (See Table of Proportions). Allow to stand for 2 to 4 hours, flush and return to service.

Filters: When the sand filter needs replacement, apply 80 ounces of this product for each 150 to 200 cubic feet of sand. When the filter is severely contaminated, additional product should be distributed over the surface at a rate of 80 ounces 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 ounces 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 completely and proceed with normal backwashing.

Water Distribution Systems: Flush repaired or replaced sections with water. Establish a hypochlorinating station and add sufficient product to achieve a consistent available chlorine residual of at least 10 ppm after a 24 hour retention time. Use a chlorine test kit.

EMERGENCY DISINFECTION AFTER FIRES

Cross Connections Or Emergency Connections: Gravity feed or hypochlorination equipment should be set up near the intake of the untreated water supply. Apply sufficient product to provide a chlorine residual of at least 0.1 to 0.2 ppm at the point where the untreated supply enters the regular disinfection system. Use a chlorine test kit.

EMERGENCY WATER DISINFECTION AFTER DROUGHTS

Supplementary Water Supplies: Gravity or mechanical hypochlorination equipment should be set up on a

supplementary line to dose the water. A minimum chlorine residual of 0.2 ppm after a 20 minute contact time is necessary. Use a chlorine test kit.

Water Shipped In By Tank Cars, Trucks, Etc.: Thoroughly clean all water containers and equipment. Spray a 500 ppm available chlorine solution on the containers and equipment (See Table of Proportions). Rinse with potable water after 5 minutes. During the filling of the containers, dose water with sufficient product to provide at least 0.2 ppm chlorine residual. Use a chlorine test kit.

EMERGENCY WATER DISINFECTION AFTER MAIN BREAKS

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 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.

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 using the Most Probable Number (MPN) procedure. Samples should be taken after 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 pathogenic 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 target of residual chlorine is 0.5 ppm after 15 minutes contact time.

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. See Table of Proportions.

Filter Beds-Slime Control: Remove filter from service, drain to a depth of 1 ft. above filter sand, and add 80 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 4 to 6 hours before completely draining and backwashing filter.

COOLING TOWER AND EVAPORATIVE CONDENSER WATER

Slug Feed Method: Initial dose - When system is noticeably fouled, apply up to 104 ounces 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 achieved, add 11 ounces 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 up to 104 ounces of this product per 10,000 gallons of water in the system to obtain from 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 achieved, add 11 ounces 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 blowdown. Badly fouled systems must be cleaned before treatment is begun.

Continuous Feed Method: Initial dose - When system is noticeably fouled, apply up to 104 ounces of this product per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. **Subsequent dose** - Maintain this treatment level by starting a continuous feed of 1 ounce 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.

PULP AND PAPER MILL PROCESS WATER SYSTEMS

Slug Feed Method: Initial dose - When system is noticeably fouled, apply up to 104 ounces 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 achieved, add up to 11 ounces 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 up to 104 ounces of this product per 10,000 gallons of water in the system to obtain from 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 achieved, add 11 ounces 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 blowdown. Badly fouled systems must be cleaned before treatment is begun.

Continuous Feed Method: Initial dose - When system is noticeably fouled, apply up to 104 ounces of this product per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. **Subsequent dose** - Start a continuous feed of 1 ounce 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.

CALCIUM CARBONATE SLURRIES

Slug Feed Method: Initial dose: When system is noticeably fouled: Apply up to 102 ounces of this product to 1,000 gallons of $CaCO_3$ slurry or add sufficient product to obtain 5 to 10 ppm available chlorine. Repeat until control is achieved. **Subsequent dose:** When microbial control is evident, add 11 ounce of this product to 10,000

gallons of slurry daily, or as needed to maintain control and keep the chlorine residual at 1 ppm. See Table of Proportions.

AGRICULTURAL USES

Potato Sanitizer: Potatoes may be sanitized after cleaning and prior to storage by spraying with a 500 ppm available chlorine sanitizing solution (See Table of Proportions). Spray apply 1 gallon of sanitizing solution per ton of potatoes.

Bee Equipment Disinfection: Disinfect bee cells and bee boards with a solution containing 1 ppm available chlorine (See Table of Proportions). Immerse boards in disinfectant 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. Empty bee hives may be disinfected by spraying with a 0.1 ppm solution until all surfaces are thoroughly wet. Allow the hive to dry; do not reintroduce bees until all chlorine odor has dissipated.

Food Egg Sanitization: Thoroughly clean all eggs. Prepare a 200 ppm available chlorine sanitizing solution in warm water (See Table of Proportions). The water temperature should not exceed 130 °F. Spray the warm sanitizer so that egg surfaces are thoroughly wet. Allow the eggs to dry thoroughly 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. Prepare a 25 ppm available chlorine solution (See Table of Proportions). Submerge fruits or vegetables for 2 minutes in a wash tank containing the recirculating sanitizing solution, or spray rinse vegetables with the sanitizing solution. Rinse fruit with potable water prior to packaging.

AQUACULTURAL USES

Fish Ponds: Remove fish from ponds prior to treatment. Thoroughly mix up to 103 ounces of this product in 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 is below the detection limit of the test kit.

Fish Pond Equipment: Thoroughly clean all equipment prior to treatment. Thoroughly mix up to 2 ounces 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. f[illegible] ponds prior to treatment. Drain the pond. Thoroughly mix 6,200 ounces (48.4 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.

Live Oyster Conditioning: Thoroughly mix 5 ounces of this product to 10,000 gallons of water at 50 - 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 is 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 2 ounces 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 below detectable levels, as determined by a test kit.

FARM PREMISES DISINFECTION

Remove all animals, poultry, and feed from premises, vehicles, and enclosures to be disinfected. 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 equipment. 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; allow to remain for a period of 10 minutes. A 1000 ppm solution can be made by thoroughly mixing 11 ounces 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 closed spaces, but do not house livestock or poultry or use equipment until chlorine has dissipated. All treated feed racks, mangers, troughs, automatic feeders, fountains and water containers must be rinsed with potable water before reuse.

ROOF SHINGLES AND SIDING TREATMENT

To control algae and mildew, first remove all physical soil by brushing and hosing with clean water. Apply a 5000 ppm available chlorine solution (See Table of Proportions) and brush or spray on roof or siding. After 30 minutes, rinse by hosing with clean water.

BOAT BOTTOM TREATMENT

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 sufficient product to this water to obtain a 35 ppm available chlorine concentration. Leave boat bottom immersed for 8 to 12 hours. Repeat if necessary. Do not discharge the solution until the free chlorine level has dropped to below detectable levels, as determined by a chlorine test kit.

ARTIFICIAL SAND BEACH SANITIZER

To sanitize the sand, spray a 500 ppm available chlorine solution at frequent intervals (See Table of Proportions). Small areas can be sprinkled with a watering can.

INSTITUTIONAL BOTTLE SANITIZER

Hand Washed: Wash bottle with a detergent and rinse thoroughly with potable water. Immerse bottles in 200 ppm available chlorine solution for 2 minutes. Remove, invert in cases to drain and dry. See Table of Proportions.

Machine Washed: Use this product for chlorinating device and adjust dispensing mechanism so that the final rinse water contains greater than 50 ppm available chlorine. Test rinse water frequently to determine if this strength is maintained. Allow 2 minutes exposure rinse.

COMMERCIAL BOTTLE SANITIZATION

After cleaning with potable water and immediately before filling, sanitize precleaned bottles with a 100 ppm available chlorine solution for two minutes. Monitor rinsate to determine if available chlorine has fallen below 50 ppm. In the absence of a test kit, a starting concentration of 200 ppm should be used. Allow to drain and air dry.

COMMERCIAL OR INSTITUTIONAL LAUNDRY SANITIZER

Wet fabrics or clothes should be spun dry prior to sanitization. Prepare a 200 ppm available chlorine solution

(See Table of Proportions). 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.