

87134-3

04/04/2011

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Antimicrobials Division (7510C)
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Reg. Number:
87134-3

Date of Issuance:
APR -4 2011

Term of Issuance:

Name of Pesticide Product:
SH-12.5™

NOTICE OF PESTICIDE:
 Registration
 Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

CHL, LLC
P.O. Box 481
Leominster, MA 01453

FILE COPY

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration 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/reregistered 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 (OPP Decision No. 442624) is registered in accordance with FIFRA sec 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for re-registration of your product under FIFRA section 4.
2. Change EPA File Symbol 87134-G to EPA Registration Number 87134-3.
3. Revise the product label as follows:
 - a. On page 12, delete the word "ADDITIONAL" from the heading "ADDITIONAL AQUACULTURAL USES" for consistency with the referenced product's label.
 - b. On page 14, move the subsection 'Briquettes or Tablets' to the end of the "Pulp and Paper Mill Process Water Systems" section for consistency with the referenced product's label.
 - c. On page 15, move the subsection 'Subsequent Dose' to the end of the "Pulp and Paper Mill Process Water Systems" section for consistency with the referenced product's label.

Signature of Approving Official:
Wanda Y. Henson
Wanda Y. Henson
Acting Product Manager Team 32
Regulatory Management Branch II
Antimicrobials Division (7510P)

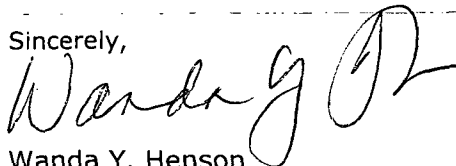
Date:
APR -4 2011

Submit one (1) copy of your final printed label prior to releasing this product for sale.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,



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

SH-12.5™

ACTIVE INGREDIENT:

Sodium Hypochlorite.....	12.50%
Other	87.50%
TOTAL.....	100%

ACCEPTED
with COMMENTS
in EPA Letter Dated:

APR - 4 2011

KEEP OUT OF REACH OF CHILDREN

Under the Federal Insecticide,
Fungicide, and Rodenticide Act as
amended, for the pesticide,
registered under EPA Reg. No. **87134-3**

DANGER

See Side Panels for Additional Precautions

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 or Clothing:** Take off contaminated clothing and shoes. Rinse skin immediately with plenty for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- If Inhaled:** 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 poison control center or doctor for treatment advice.
- If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person drink large amounts 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.

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

NOTE TO PHYSICIAN: Sodium hypochlorite is corrosive to eyes, skin and mucous membranes with chemical burns (caustic). Treatment is dilution/flushing of site with copious amounts of water with controlled removal of exposure followed by symptomatic and supportive care to maintain life functions. Consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Probable mucosal damage may contraindicate the use of gastric lavage. Careful gastric lavage with an endotracheal tube in place should be considered. Observation may be warranted.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-858-7378 for emergency medical treatment information.

EPA REG. NO. 87134- XX

EPA. EST. 87134-WY-001

**Manufactured by
CHL, LLC
P.O. Box 481
Leominster, MA 01453**

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Corrosive, causes irreversible eye damage or skin burns. Do not get in eyes, on skin or on clothing. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until strong odors have dissipated. Wear face shield or goggles and rubber gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

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 OR CHEMICAL HAZARDS

STRONG OXIDIZING AGENT: Mix only with water according to label instructions. Mixing this product with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter (e.g. urine, feces, etc.) will release chlorine gas which is irritating to eyes, lungs and mucous membranes.

STORAGE AND DISPOSAL

Store this product in a cool dry area, away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer. Do not reuse container but place in trash collection. Do not contaminate food or feed by storage, disposal or cleaning of equipment.

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.

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 insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 oz. of this product with ten (10) gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing two (2) oz. of this product with ten (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 two (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 re-used 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 insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing one (1) oz. of this product with ten (10) gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing two (2) oz. of this product with ten (10) gallons of water to provide approximately 200 ppm available chlorine by weight.

Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least two (2) minutes and allow the sanitizer to drain. If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. Do not rinse equipment with water after treatment.

Sanitizers used in automated systems may be used for general cleaning but may not be re-used 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 a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of two (2) oz. product with ten (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 two (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.

CLEAN-IN-PLACE METHOD: Thoroughly clean equipment after use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of two (2) oz. product with ten (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 ten (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.

SPRAY / FOG METHOD: Pre-clean all surfaces after use. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Prepare a 200 ppm sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of two (2) oz. product with ten (10) gallons of water. Prepare a 600 ppm solution by thoroughly mixing the product in a ratio of six (6) oz. product with ten (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 two (2) hours. Prior to using equipment, rinse all surfaces treated with a 600 ppm solution with a 200 solution.

SANITIZATION OF POROUS FOOD CONTACT SURFACES

RINSE METHOD: Prepare a 600 ppm solution by thoroughly mixing six (6) oz. of this product with ten (10) gallons of water. Clean surfaces in the normal manner. Rinse all surfaces thoroughly with the 600 ppm solution, maintaining contact for at least two (2) minutes. Prepare a 200 ppm sanitizing solution by thoroughly mixing two (2) oz. of this product with ten (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, in an immersion tank, six (6) oz. of this product with ten (10) gallons of water.

Clean equipment in the normal manner. Immerse equipment in the 600 ppm solution for at least two (2) minutes. Prepare a 200 ppm sanitizing solution by thoroughly mixing two (2) oz. of this product with ten (10) gallons of water. Prior to using equipment, immerse all surfaces in a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.

SPRAY / FOG METHOD: Pre-clean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of six (6) oz. product with ten (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 two (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 two (2) oz. of this product with ten (10) gallons of water.

SANITIZATION OF NONPOROUS NON-FOOD CONTACT SURFACES

RINSE METHOD: Prepare a sanitizing solution by thoroughly mixing two (2) oz. of this product with ten (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 two (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, two (2) oz. of this product-with ten (10) gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least two (2) minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

SPRAY/FOG METHOD: Pre-clean all surfaces after use. Prepare a 200 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of two (2) oz. product with ten (10) gallons of water. Use spray or fogging equipment, which can

resist hypochlorite solutions. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least two (2) hours.

DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES

RINSE METHOD: Prepare a disinfecting solution by thoroughly mixing two (2) oz. of this product with ten (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 ten (10) minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSSION METHOD: Prepare a disinfecting solution by thoroughly mixing, in an immersion tank, six (6) oz. of this product with ten (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 disinfecting solution for at least ten (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 six (6) oz. of this product with ten (10) gallons of water to provide approximately 600 ppm available chlorine by weight. Clean surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact, with the sanitized for at least two (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, six (6) oz. of this product with ten (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 two (2) minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

SPRAY / FOG METHOD: After cleaning, sanitize non-food contact surfaces with 600 ppm available chlorine by thoroughly mixing the product in a ratio of six (6) oz. of this product with ten (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 prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least two (2) hours.

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

PUBLIC SYSTEMS: Mix a ratio of one (1) oz. of this product to one-hundred (100) gallons of water. Begin feeding this solution with a hypochlorinator until a free available chlorine residual of at least 0.2 ppm and no more than 0.6 ppm is attained throughout the distribution system.

Check water frequently with a chlorine test kit. Bacteriological sampling must be conducted at a frequency no less than that prescribed by the National Interim Primary Drinking Water Regulations. Contact your local Health Department for further details.

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

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 one (1) oz. of this product into ten (10) gallons of water. Add five (5) to ten (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 twenty-four (24) hours. After twenty-four (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 WATER 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.

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 twenty (20) oz. of product per five (5) cu. ft. of water to obtain 500 ppm available chlorine, as determined by a suitable test kit. After twenty-four (24) hours drain, flush, and return to service. If the previous method is not suitable, spray or flush the equipment with a solution containing five (5) oz. of this product for each five (5) gallons of water (1000 ppm available chlorine). Allow to stand for two (2) to four (4) hours, flush and return to service.

FILTERS: When the sand filter needs replacement, apply eighty (80) oz. 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 the rate of eighty (80) oz. twenty (20) sq. ft. Water should stand at a depth of one (1) foot above the surface of the filter bed for four (4) to twenty-four (24) hours. When filter beds can be backwashed of mud and silt, apply eighty (80) oz. of this product per each fifty (50) sq. ft., allowing the water to stand at depth of one (1) foot above the filter sand. After thirty (30) minutes, drain water to the level of the filter. After four (4) to six (6) hours drain, and proceed with normal backwashing.

DISTRIBUTION SYSTEM: Flush repaired or replaced section with water. Establish a hypo-chlorinating station and apply sufficient product until a consistent available chlorine residual of at least ten (10) ppm remains after a twenty-four (24) hour retention time. Use a chlorine test kit.

EMERGENCY DISINFECTION AFTER FIRES

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

EMERGENCY DISINFECTION AFTER DROUGHTS

SUPPLEMENTARY WATER SUPPLIES: Gravity or mechanical hypochlorite feeders should be set up on a supplementary line to dose the water to a minimum chlorine residual of 0.2 ppm after a twenty (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 five (5) minutes. This solution is made by mixing five (5) oz. of this product for each ten (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 hypo-chlorinator. Stop water flow when a chlorine residual test of fifty (50) ppm is obtained at the low pressure end of the new main section after a twenty-four (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 fifty-two (52) to one-hundred four (104) oz. of this product per ten-thousand (10,000) gallons of water in the system to obtain from five (5) to ten (10) ppm available chlorine. Repeat until control is

achieved.

Subsequent Dose: When microbial control is evident, add eleven (11) oz. of this product per ten-thousand (10,000) gallons of water in the system daily, or as needed to maintain control and keep the chlorine residual at one (1) ppm. Badly fouled systems must be cleaned before treatment is begun.

INTERMITTENT FEED METHOD: Initial Dose: - When system is noticeably fouled, apply fifty-two (52) to one-hundred four (104) oz. of this product per ten-thousand (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 eleven (11) oz. of this product per ten thousand (10,000) gallons of water in the system to obtain a one (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 fifty-two (52) to one-hundred four (104) oz. of this product per ten-thousand (10,000) gallons of water in the system to obtain five (5) to ten (10) ppm available chlorine.

Subsequent Dose: Maintain this treatment level by starting a continuous feed of one (1) oz. of this product per one-thousand (1,000) gallons of water lost by blow-down to maintain a one (1) ppm residual. Badly fouled systems must be cleaned before treatment is begun.

BRIQUETTES OR TABLETS: Initially slug dose the system with fifty-two (52) oz. of this product per ten-thousand 10,000 gallons of water in the system. Badly fouled systems must be cleaned before treatment is begun.

Subsequent Dose: When microbial control is evident, add eleven (11) oz. of this product per ten-thousand 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.

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, of 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 fifteen (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 1000 ppm available chlorine solution at a location, which will allow complete mixing. Prepare this solution by mixing ten (10) to one hundred (100) oz. of this product with one hundred (100) gallons of water. Once control is evident, apply a 15 ppm available chlorine solution. Prepare this solution by mixing three (3) oz. of this product with one-hundred (100) gallons of water.

FILTER BEDS - SLIME CONTROL: Remove filter from service, drain to a depth of one (1) ft. above filter sand, and add eighty (80) oz. of product per twenty (20) sq/ft evenly over the surface. Wait thirty (30) minutes before draining water to a level that is even with the top of the filter. Wait for four (4) to six (6) hours before completely draining and backwashing filter.

SWIMMING POOL WATER DISINFECTION

For a new pool or spring start-up, super-chlorinate with fifty-two (52) oz. to one-hundred four (104) oz. of product for each ten-thousand (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 pool water pH to between 7.2 to 7.6. Adjust and maintain the alkalinity of the pool to between 50 to 100 ppm.

To maintain the pool, add manually or by a feeder device eleven (11) oz. of this product for each ten-thousand (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 seven (7) days, or as necessary, super-chlorinate the pool with fifty-two (52) oz. to one-hundred four (104) oz. of product for each ten-thousand (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 re-enter pool until the chlorine residual is between 1.0 to 3.0 ppm as re-entry into treated pools is prohibited above levels of 4 ppm due to risk of bodily harm.

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 twenty-four (24) hours prior to discharge.

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

SPAS, HOT-TUBS, IMMERSION TANKS, ETC.

SPAS / HOT-TUBS: Apply five (5) oz. of product per thousand (1000) gallons of water to obtain a free available chlorine concentration of 5 ppm, as determined by a suitable chlorine test kit. Adjust and maintain pool water pH to between 7.2 and 7.8. Sane oils, lotions, fragrances, cleaners, etc. may cause foaming or cloudy water as well as reduce the efficiency of the product.

To maintain the water, apply five (5) oz. of product per thousand (1000) gallons of water over surface to maintain a chlorine concentration of 5 ppm. After each use, shock treat with eight (8) oz. of this product per five-hundred (500) gallons of water to control odor and algae. During extended periods of disuse, add three (3) oz. of product daily per thousand (1000) gallons of water to maintain a 3 ppm chlorine concentration. Re-entry into treated spas is prohibited above levels of 5 ppm due to risk of bodily harm.

HUBBARD AND IMMERSION TANKS: Add five (5) oz. of this product per two-hundred (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 five (5) oz. to a bucket of water and circulate this solution through the agitator of the tank for fifteen (15) minutes and then rinse out the solution. Clean tank thoroughly and dry with clean cloths.

HYDROTHERAPY TANKS: Add one (1) oz. of this product per thousand (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. Adjust and maintain the water pH to between 7.2 and 7.6. Operate pool filter continuously. Drain pool weekly, and clean before refilling.

AGRICULTURAL USES

POST-HARVEST PROTECTION: Potatoes can be sanitized after cleaning and prior to storage by spraying with a sanitizing solution at a level of one (1) gallon of sanitizing solution per tons of potatoes.

Thoroughly mix one (1) oz. of this product to two (2) gallons of water to obtain 500 ppm available chlorine.

Disinfect leaf cutting bee cells and bee boards by immersion in a solution containing 1 ppm available chlorine for three (3) minutes. Allow cells to drain for two (2) minutes and dry for 4 to 5 hours or until no chlorine odor can be detected. This solution is made by thoroughly mixing 1 Tsp. of this product to one-hundred (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 SANITATION: Thoroughly clean all eggs. Thoroughly mix two (2) oz. of this product with ten (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 five (5) oz. of this product in two hundred (200) gallons of water to make a sanitizing solution of 25 ppm available chlorine. After draining the tank, submerge fruit or vegetables for two (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.

ADDITIONAL AQUACULTURAL USES

FISH PONDS: Remove fish from ponds prior to treatment. Thoroughly mix one-hundred three (103) oz. of this product to ten-thousand (10,000) gallons of water to obtain 10 ppm available chlorine. Add more Verox-12.5 to the water if the available chlorine level is below 1 ppm after five (5) minutes. Return fish to pond after the available chlorine level reaches zero. Thoroughly clean all equipment prior to treatment.

FISH POND EQUIPMENT: Thoroughly mix two (2) oz. of this product to ten (10) gallons of water to obtain 200 ppm available chlorine. Porous equipment should soak for one (1) hour.

LOBSTER PONDS: Remove lobsters, seaweed etc. from ponds prior to treatment. Drain the pond. Thoroughly mix forty-nine (49) gallons (6,200 oz.) of this product to ten-

thousand (10,000) chlorine. Apply so that all barrows, gates, rock and dam are treated with the 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 two (2) tidal cycles to flush the pond before returning lobsters to pond.

CONDITIONING LIVE OYSTERS: Thoroughly mix five (5) oz. of this product to ten-thousand (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 fifteen (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 two (2) oz. of product with ten (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.

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 transverse 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 ten (10) minutes. A 1000 ppm solution can be made by thoroughly mixing eleven (11) oz. of this product with ten (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 fifty-two (52) oz. to one-hundred four (104) oz. of this product per ten-thousand (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 eleven (11) oz. of this product per ten-thousand (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 fifty-two (52) oz. to one-hundred four (104) oz. of this product per ten-thousand (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 eleven (11) oz. of this product per ten-thousand (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 fifty-two (52) oz. to one-hundred four (104) oz. of this product per ten-thousand (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 one (1) oz. of this product per thousand (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 two (2) oz. of this product to ten (10) gallons of wash water to provide 200 ppm available chlorine. Wait five (5) minutes, then add soap or detergent. Immerse laundry for at least eleven (11) minutes prior starting the wash/rinse cycle.

IN WASHING SUDS: - Thoroughly mix two (2) oz. of this product to ten (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 two (2) oz. of this product with ten (10) gallons of water to yield 200 ppm available chlorine. Promptly after mixing the sanitizer, add the solution into the pre-wash 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.

BRIQUETTES OR TABLETS: Initially slug dose the system with fifty-two (52) oz. of this product per ten-thousand (10,000) gallons of water in the system. Badly fouled systems must be cleaned before treatment is begun.

Subsequent Dose: When microbial control is evident, add eleven (11) oz. of this product per ten-thousand (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.

SANITIZATION OF DIALYSIS MACHINES

Flush equipment thoroughly with water prior to using this product. Thoroughly mix six (6) oz. of this product to ten (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 fifteen (15) minutes at 200°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 multipatient hemodialysate systems. This product has been shown to be an effective disinfectant (viricide, fungicide, bactericide, pseudomonicide) when tested by AOAC and EPA test methods. This product may not 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 (RD) membranes.

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

ARTIFICIAL SAND BEACHES

To sanitize the sand, spray a 500 ppm available chlorine solution containing five (5) oz. of this product per ten (10) gal. of water at frequent intervals. Small areas can be sprinkled with a watering can.

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 five (5) oz. of this product per gallon of water and brush or spray roof or siding. After thirty (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 five-hundred (500) gallons of water for a 14 foot boat. Add eighteen (18) oz. of this product to this water to obtain a 35 ppm available chlorine concentration. Leave immersed for eight (8) to twelve (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.