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

NOTICE OF PESTICIDE:
_X_ Registration
___ Reregistration
(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
1769-380	7/23/24

Term of Issuance:
Conditional

Name of Pesticide Product:
MB-12.5

Name and Address of Registrant (include ZIP Code):

Manuela Petrisor
NCH Corporation
Electronic Transmittal: Manuela.Petrisor@tsgconsulting.com

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 (FIFRA).

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 conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

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

Signature of Approving Official:

Demson Fuller, Product Manager, Team 32
RMBI, Antimicrobials Division (7510P)

Date: 7/23/24

EPA Form 8570-6

2. You are required to comply with the data requirements described in the DCI identified below:

    a. Chemical Name GDCI-020502-1561

    You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Reevaluation Team Leader (Team 36): http://www2.epa.gov/pesticide-contacts/contacts-office-pesticide-programs-antimicrobial-division

3. Make the following label changes before you release the product for shipment:

    - Revise the EPA Registration Number to read, "EPA Reg. No. 1769-380."

4. Submit one copy of the 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 FIFRA and is subject to review by the Agency. See FIFRA section 2(p)(2). 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) lists 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, FIFRA section 12(a)(1)(B). 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 Assurance.

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 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. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 10/10/2023

If you have any questions, please contact me, Demson Fuller by phone at (202) 566-0822, or via email at fuller.demson@epa.gov.

Sincerely,

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

Enclosure: Product Label

MB-12.5

SANITIZER, DISINFECTANT

ACTIVE INGREDIENT:
Sodium Hypochlorite 12.5%
OTHER INGREDIENT 87.5%
TOTAL.....100.0%
Total available chlorine 12.0%

[Note to Reviewer: In accordance with 40 CFR 156.68(d), all first aid statements, as prescribed, will appear on the front panel of the product label.]

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. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED: • Call poison control center or doctor immediately for treatment or advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
• Have the product container or label with you when calling a poison control center or doctor, or going for treatment. • For medical emergencies, call the poison control center at 1-800-222-1222.
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.
FOR 24 HOUR EMERGENCY INFORMATION CALL CHEMTREC: 1 (800) 424-9300, or contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at http://npic.orst.edu

EPA Reg. No. 1769- TBD
EPA Est. No.

KEEP OUT OF REACH OF CHILDREN
DANGER

NET CONTENTS: _____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER: Corrosive. Causes irreversible eye damage and skin burns. Do not get in eyes, on skin or on clothing. Wear safety glasses, goggles or face shield and rubber gloves (PVC or Nitrile) when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

PERSONAL PROTECTIVE EQUIPMENT (PPE)
Applicators and other handlers must wear:

1. Goggles or face shield
2. Long-sleeved shirt and long pants
3. Waterproof gloves
4. Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

(*If the container is 5 gallons or larger the following Environmental Hazards statement will be used*.)
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 the National Pollutant Discharge Elimination Systems (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

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

DIRECTIONS FOR USE: It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

IMPORTANT! ALL SANITIZING APPLICATIONS

FOR ALL FOOD CONTACT SURFACES AND OBJECTS - Remove food particles by flushing, scraping and, when necessary, soaking. Wash thoroughly with a good detergent or compatible cleaner and rinse with potable water before application of SODIUM HYPOCHLORITE solution. Wet all surfaces thoroughly with MB-12.5 solution by immersion flooding or spraying. Contact time must be at least 2 minutes. Drain solution and air dry. Do not wash with potable water after sanitizing. MB-12.5 solutions must not be re-used for sanitizing purposes. Prepare a fresh solution daily if the old solution becomes diluted or soiled.

Dilution Conversion Chart
The DILUTION CONVERSION CHART provided below covers the MB-12.5 Sodium Hypochlorite Product. It is designed to serve as a guide and may not cover all PPM ranges or dilution as required to satisfy a particular use or need.

Desired Strength Avail.	Gallons Water	Liquid Oz. 12.5% Sodium Hypochlorite	Desired Strength Avail. Chlorine	Gallons Water	Liquid Oz. 12.5% Sodium Hypochlorite
5 PPM	100	0.5	200 PPM	10	2.0
10 PPM	100	1.0	500 PPM	10	5.0
15 PPM	100	1.5	600 PPM	10	6.0
25 PPM	100	2.5	1000 PPM	10	10.5
35 PPM	100	3.5	5000 PPM	10	51.0
50 PPM	100	5.0	10000 PPM	10	102.0
100 PPM	10	1.0			

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

$$\text{Ounce of Product} = \frac{(\text{PPM avail. Cl2})(\text{Gal.Water})(128)}{(\%\ \text{Active Ingredient})(10{,}000)}$$

Formula Definition:

Ounce of Product	= Ounces of MB-12.5 Product to Use
PPM Available Cl2	= What is Required
Dilution Gallons Water	= You Specify Quantity
128 oz./gal.	= Constant 128
(%) Percent Active Ingredient	= Sodium Hypochlorite Strength
10,000	= Constant

AGRICULTURAL USES

Post-Harvest Protection

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

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

Food Egg Sanitization

Thoroughly clean all eggs. Thoroughly mix MB-12.5 product with 10 gallons of warm water to produce a 200 ppm available chlorine solution. The sanitizer temperature must 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 must not be reused to sanitize eggs.

Fruit and Vegetable Washing

Thoroughly clean all fruits and vegetables in a wash tank. Thoroughly mix MB-12.5 in water to make a sanitizing solution of 25 ppm available chlorine. After draining the tank, submerge fruit or vegetables for 2 minutes in a second wash tank containing the recirculating sanitizing solution. Spray rinse vegetables with the sanitizing solution prior to packaging. Rinse fruit with potable water only prior to packaging.

Meat and Poultry Plants

Chlorine may be present in processing water of meat and poultry plants at concentrations up to 2 parts per million (ppm) calculated as available chlorine. Also, chlorine may be present in poultry chiller intake water, and in carcass wash water at concentrations up to 50 ppm available chlorine. Chlorine must be dispensed at a constant and uniform level and the dispensing method or system must be such that a controlled rate is maintained. Thoroughly mix 1 oz. of this product in 200 gallons of water to make a sanitizing solutions of 5 ppm available chlorine or 10 oz in 200 gallons of water for 50 ppm available chlorine.

ARTIFICIAL SAND BEACHES

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

ASPHALT OR SEALED WOOD ROOFS AND SIDINGS

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

AQUACULTURAL USES

Fish Ponds

Remove fish from ponds prior to treatment. Add appropriate amount of MB-12.5 to 10,000 gallons of water to obtain 10 ppm available chlorine. Add more MB-12.5 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 MB-12.5 with 10 gallons of water to obtain 200 ppm available chlorine. Porous equipment must soak for one hour.

Main Lobster Ponds

Remove lobsters, seaweed, etc. from ponds prior to treatment. Drain the pond. Thoroughly mix MB-12.5 to 10,000 gallons of water to obtain at least 600 ppm available chlorine. Apply so that all barrows, gates, rocks and dams 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 0 ppm. Open gates and allow 2 tidal cycles to flush the pond before returning lobsters to pond.

Conditioning Live Oysters

Thoroughly mix MB-12.5 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 MB-12.5 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.

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 must contain approximately 500 gallons of water for a 14 foot boat. Add MB-12.5 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.

COOLING TOWER / EVAPORATIVE CONDENSER WATER

Slug Feed Method

INITIAL DOSE: When system is noticeably fouled, add appropriate amount of MB-12.5 per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add appropriate amount of MB-12.5 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, add appropriate amount of MB-12.5 per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. Apply half (or 1/3, 1/4, or 1/5) of this initial dose when half (or 1/3, 1/4, or 1/5) of the water in the system has been lost by blowdown.

SUBSEQUENT DOSE: When microbial control is evident, add appropriate amount of MB-12.5 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, add appropriate amount of MB-12.5 per 10,000 gallons in the system to obtain 5 to 10 ppm available chlorine.

SUBSEQUENT DOSE: Maintain this treatment level by starting a continuous feed of 1 oz. of MB-12.5 per 1,000 gallons water lost by blowdown to maintain a 1.0 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

Cooling Tower / Evaporative Condenser Water Treatment Chart

Method	Ounce MB-12.5 / 10,000 Gallons Water
Slug Feed: To obtain 5-10 PPM	52-104
Subsequent Dose: Maintain 1 ppm residual	11
Intermittent Feed: To obtain 5-10 PPM	52-104
Subsequent Dose: Maintain 1 ppm residual	11
Continuous Feed: To obtain 5-10 PPM	52-104
Subsequent Dose: Maintain 1 ppm residual (per 1000 gal.)	1

EMERGENCY DISINFECTION AFTER DROUGHTS

Supplementary Water Supplies

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

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

Thoroughly clean all containers and equipment. Spray a 50 ppm available chlorine solution and rinse with potable water after 5 minutes. During the filling of the containers, dose with sufficient amounts of MB-12.5 to provide at least a 0.2 ppm chlorine residual. Use a chlorine test kit.

EMERGENCY DISINFECTION AFTER FIRES

Cross Connections or Emergency Connections

Hypochlorination or gravity feed equipment must 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 FLOODS

Wells

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

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 add 30 oz. of 12.5% MB-12.5 to 5 cu ft. of water to obtain 500 ppm available chlorine, as determined by a suitable test kit. After 24 hours drain, flush, and return to service. If the previous method is not suitable, spray or flush the equipment with a solution containing 1000 ppm available chlorine. Allow to stand for 2 to 4 hours, flush and return to service.

Filters

When the sand filter needs replacement, apply 104 oz. of MB-12.5 for each 150 to 200 cubic feet of sand. When the filter is severely contaminated, additional product must be distributed over the surface at the rate of 104 oz. per 20 sq. ft. Water must 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 104 oz. of MB-12.5 per each 50 sq. ft., allowing the water to stand at a depth of 1 foot above the filter sand. After 30 minutes, drain water to the level of the filter. After 4 to 6 hours, drain and proceed with normal backwashing.

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 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.

DISINFECTION OF DRINKING WATER (POTABLE)

(Public/Individual/Emergency Systems)

Public System

Mix a ratio of 1 oz MB-12.5 to 100 gallons of water to produce a 10 ppm available chlorine by weight. Begin feeding this solution with a hypochlorinator until a free available chlorine residual of at least 0.2 ppm and no more than 0.6 ppm is attained throughout the distribution system. Check water frequently with a chlorine test kit. Bacteriological sampling must be conducted at a frequency no less than that prescribed by the National 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. After covering the well, pour the sanitizing solution into the well through both the pipesleeve opening and the pipeline. Wash the exterior of the pump cylinder also with the sanitizing solution.

Start pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Consult your local Health Department for further details.

Individual Water Systems

1. DRILLED, DRIVEN AND BORED WELLS: Run pump until water is as free from turbidity as possible. Pour a 100 ppm available chlorine sanitizing solution into the well. Add 5 to 10 gallons of clean, chlorinated water to the well in order to force the sanitizer into the rock formation. Wash the exterior of pump cylinder with the sanitizer. Drop pipeline into well, start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Deep wells with high water levels may necessitate the use of special methods for introduction of the sanitizer into the well. Consult your local Health Department for further details.
2. FLOWING ARTESIAN WELLS: Artesian wells generally do not require disinfection. If analysis indicate persistent contamination, the well must 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 to 3 drops, (dependent on product strength) to 20 gallons of water. Allow the treated water to stand for 30 minutes. Properly treated water must 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.

Meat and Poultry Plant Treatment

For the treatment of drinking water and water which may be incorporated into food products or directly contact food, use the following concentrations. Chlorine may be present in the process water of meat plants at concentrations of up to 5 ppm. Chlorine may be present in the process water of poultry plants at levels up to 20 ppm. Levels are calculated in ppm of available chlorine. Use dilution conversion chart to calculate the proper ratio of sodium hypochlorite solution to water. MB-12.5 must be dispensed at a constant and uniform level to ensure that a controlled rate is maintained.

PUBLIC WATER SYSTEM

Reservoirs — Algae Control

Hypochlorinate streams feeding the reservoir. Suitable feeding points must 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 20 oz. of MB-12.5 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 104 oz. of MB-12.5 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 80 ppm available chlorine solution. The solution must be pumped or fed by gravity into the well after thorough mixing with agitation. The well must 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 21 oz. of this product for each 5 cubic feet capacity (approximately 500 ppm available chlorine). Fill to working capacity and let stand at least 4 hours. Drain and place in service. If the previous treatment is not practical, surfaces may be sprayed with a 1000 ppm available chlorine solution. After drying, flush with water and return to service.

FARM PREMISES

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

poultry or employ equipment until chlorine has been dissipated. All treated feed racks, mangers, troughs, automatic feeders, fountains and waterers must be rinsed with potable water before reuse.

PULP AND PAPER MILL PROCESS WATER SYSTEMS

Slug Feed Method

INITIAL DOSE: When system is noticeably fouled, add appropriate amount of MB-12.5 per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add appropriate amount of MB-12.5 per 10,000 gallons of water in the system daily, or as needed, to maintain control and keep the chlorined residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

Intermittent Feed Method

INITIAL DOSE: When system is noticeably fouled, add appropriate amount of MB-12.5 per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. Apply half (or 1/3, 1/4, or 1/5) of this initial dose when half (or 1/3, 1/4, or 1/5) of the water in the system has been lost by blowdown.

SUBSEQUENT DOSE: When microbial control is evident, add appropriate amount of MB-12.5 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, add appropriate amount of MB-12.5 per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine.

SUBSEQUENT DOSE: Maintain this treatment level by starting a continuous feed of 1 oz. of MB-12.5 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 Treatment Chart

Method	MB-12.5 /10,000 Gallons Water
Slug Feed To obtain 5-10 PPM	52-104
Subsequent Dose Maintain 1 ppm residual	11
Intermittent Feed To obtain 5-10 ppm	52-104
Subsequent Dose Maintain 1 ppm residual	11
Continuous Feed To obtain 5-10 ppm	52-104
Subsequent Dose Maintain 1 ppm residual	1

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 drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing required quantity of MB-12.5 with 10 gallons of water. If no test kit is available, prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight.

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

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. If no test kit is available, prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight.

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

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

Flow/Pressure Method

Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 2 minutes to 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.

Clean-in Place Method

Thoroughly clean equipment after use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 10 minutes to 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/Fog Method

Preclean all surfaces after use. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Use spray or fogging equipment which can resist sodium 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.

SANITIZATION OF POROUS FOOD CONTACT SURFACES

Rinse Method

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

Immersion Method

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

Spray/Fog Method

Preclean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of the required quantity and apply using spray or fogging equipment which can resist sodium 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.

SANITIZATION OF NONPOROUS NON-FOOD CONTACT SURFACES

Rinse Method

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

Immersion Method

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

Spray/Fog Method

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

DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES

Rinse Method

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

Immersion Method

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

SANITIZATION OF POROUS NON-FOOD CONTACT SURFACES

Rinse Method

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

Immersion Method

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

Spray/Fog Method

After cleaning, sanitize non-food contact surfaces with 600 ppm available chlorine, using spray or fogging 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 or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

SEWAGE AND WASTEWATER EFFLUENT TREATMENT

The disinfection of sewage effluent must be evaluated by determining the total number of conform bacteria and/or fecal coliform bacteria, as determined by the Most Probable Number (MPN) procedure, to ensure that 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, must be the final and primary standard and the chlorine residual must 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 must 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. Once control is evident, apply a 15 ppm available chlorine solution.

Filter Beds - Slime Control

Remove filter from service, drain to a depth of 1 ft. above filter sand, and add 100 oz. of MB-12.5 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.

SANITIZATION OF DIALYSIS MACHINES

Flush equipment thoroughly with water prior to using this product. Thoroughly mix MB-12.5 with 10 gallons of water to obtain at least 600 ppm available chlorine. Immediately use this product in the hemodialysate system allowing for a minimum contact time of 15 minutes at 20°C. Drain the system of the sanitizing solution and thoroughly rinse with water. Discard and DO NOT reuse the spent sanitizer. Rinsate must be monitored with a suitable test kit to ensure that no available chlorine remains in the system.

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

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

SPAS, HOT-TUBS, IMMERSION TANKS, ETC.

Spas/Hot-Tubs

Using Chart or Formula, calculate and approximate an amount of MB-12.5 per 1000 gallons of water to obtain a free available chlorine concentration of 5 ppm, as determined by a suitable chlorine test kit. Adjust and maintain pool water pH to between 7.2 and 7.8. Some oils, lotions, fragrances, cleansers, etc. may cause foaming or cloudy water as well as reduce the efficiency of the product. Do not reenter spa until chlorine residual drops to 5 ppm due to risk of bodily harm.
MAINTAINING THE WATER: To maintain the water, apply MB-12.5 solution over the surface to maintain a chlorine concentration of 5 ppm. *AFTER EACH USE:* Shock treat to control odor and algae, using MB-12.5 at a rate of 8 oz of 10% to 500 gallons of water.
PERIODS OF DISUSE: During periods of disuse, add MB-12.5 daily to maintain a 3 ppm chlorine concentration.

Hubbard and Immersion Tanks

Before patient use, add MB-12.5 to obtain a chlorine residual of 25 ppm, as determined by a suitable test kit. Adjust and maintain the water pH to between 7.2 and 7.6. After each use drain the tank. Add 5 ounces of MB-12.5 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 MB-12.5 to the water to obtain a chlorine residual of 1 ppm, as determined by a suitable chlorine test kit. Pool must 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.

ZEBRA MUSSEL CONTROL AGENT

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

Single Exposure

To control zebra mussels, add appropriate amount of MB-12.5 to obtain a residual chlorine concentration of 10 to 20 ppm per 10,000 gallons of water in the system. For best results, treat during breeding season and/or at the end of season for at least 30 days. The release of zebra mussels for weeks after this method of treatment is not uncommon.

Semi Continuous Exposure

To control zebra mussels, add appropriate amount of MB-12.5 for 15 - 30 minutes a day to obtain a residual chlorine concentration of 5 to10 ppm per 10,000 gallons of water in the system. For best results, initiate treatment during breeding season (June to September).

Continuous Exposure

To control zebra mussels, add appropriate amount of MB-12.5 through a continuous feed system to obtain a residual chlorine concentration of 5 to 10 ppm per 10,000 gallons of water in the system. For best results, apply during the breeding season (June to September).

Zebra Mussel Control Treatment Table

TREATMENT METHOD	(Ounce MB-12.5) /10,000 Gallons Water	
Single Dosage	100	- 200
Semi-Continuous Dosage	52	- 104
Continuous Dosage	52	- 104

SANITIZING AGENT FOR DINNERWARE AND UTENSILS

This product can be used as a sanitizing rinse of PRE-CLEANED, hand washed or machine washed dinnerware and food utensils at restaurants, hotels, and resorts. A solution of 100 ppm available chlorine may be used if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to ensure that the available chlorine does not drop below 100 ppm. If no test kit is available, prepare a sanitizing solution to provide approximately 200 ppm available chlorine by weight. For hand dishwashing, exposure to solution must be at least 1 minute or as required by local or state health departments. For machine washing, exposure time must be at least 2 minutes or a contact time specified by governing sanitary code. Check with your Health Department as requirements vary.
MB-12.5 may be used as a bleaching and destaining agent in commercial dishwashing machines. Do not use this product as a final rinse on silver or silver plate as severe tarnishing will occur.

WATER FLOODS AND PRODUCED WATER

MB-12.5 should be added to water flood system at a point of uniform mixing.

INITIAL TREATMENT: When the system is noticeably contaminated, add 0.1 to 8.0 gallons of MB-12.5 to the system per 1,000 gallons flood water (10 to 1,000 ppm chlorine). Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add 0.1 to 8.0 gallons of MB-12.5 to 1,000 gallons flood water (10 to 1,000 ppm chlorine) to the system weekly, or as needed to maintain control.

OIL FIELD APPLICATIONS

DRILLING, COMPLETION, FRAC FLUIDS AND WORKOVER FLUIDS

MB-12.5 antimicrobial should be added to a drilling fluid system at a point of uniform mixing such as the circulating mud tank.

Initial treatment: Add 0.1 to 8.0 gallons MB-12.5 per 1,000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on the severity of contamination.

Maintenance Dosage: Maintain a concentration of 12.5% MB-12.5 by adding 0.1 to 8.0 gallons of MB-12.5 per 1,000 gallons of additional fluid (10 to 1,000 ppm chlorine), or as needed, depending on the severity of contamination.

PACKER FLUIDS

MB-12.5 should be added to a packer fluid at a point of uniform mixing such as a circulating holding tank. Add 0.1 to 8.0 gallons MB-12.5 per 1,000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on the severity of contamination. Seal the treated packer fluid in the wall between the casing and production tube.

HYDROTESTING

Water used to hydrotest pipelines or vessels should contain 0.1 to 8.0 gallons MB-12.5 per 1,000 gallons of freshly prepared fluid (10 to 1,000 ppm chlorine) depending on water quality and length of time the equipment will remain idle.

PIPELINE PIGGING AND SCRAPING OPERATIONS

Add MB-12.5 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 MB-12.5 should be added to produce a concentration of 0.20 to 20 gallons MB-12.5 per 100 gallons of water (250 to 25,500 ppm chlorine), depending on the length of pipeline and severity of biofouling.

STORAGE AND DISPOSAL:

Do not contaminate water, food or feed by storage, disposal, or cleaning of equipment

PESTICIDE STORAGE: Store this product in a cool dry area away from direct sunlight and heat to avoid deterioration In case of spill, flood area with large quantities of water. Keep this product in tightly closed container when not in use. Product or rinsates that cannot be used must be diluted with water before disposal in a sanitary sewer.

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

CONTAINER HANDLING AND DISPOSAL:

For Refillable Container

Refill this container with sodium hypochlorite 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 before final disposal, empty the remaining contents into the application equipment or a mix tank. Agitate vigorously or recirculate water with the pump for 2 minutes. Dispose of rinsate as pesticide waste. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by procedures allowed by state and local authorities.

CONTAINER CLEANING - Triple rinse empty container (or equivalent) promptly after emptying. Triple rise as follows: Empty the remaining contents into application equipment or mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two or more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Product or rinseate that cannot be used must be diluted with water and disposed of in a sanitary sewer. Do not contaminate food or feed by storage, disposal or cleaning of equipment.

For Non-Refillable Containers

For containers 5 gallons

Non-refillable container. Do not reuse this container to hold materials other than pesticides or diluted pesticide rinsate. Triple rinse as follows: Fill container ¼ full with water and recap. Shake for 10 seconds. Drain for 10 seconds after the flow begins to drip. Follow Pesticide Disposal instructions for rinsate disposal. Repeat procedure two more times. Then offer for recycling or reconditioning if appropriate or puncture and dispose of in a sanitary landfill or by incineration.

For container greater than 5 gallons

Non-refillable container. Do not reuse or refill this container. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat procedure two more times. Then offer for recycling or reconditioning if appropriate or puncture and dispose of in a sanitary landfill or by incineration.

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Not for Resale
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2727 Chemsearch Blvd.
Irving, TX 75062