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VERTEX[®]

CONCENTRATE

Reg # 9616-8

PM-32

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A SODIUM HYPOCHLORITE SOLUTION FOR SANITIZATION AND ALGAE CONTROL IN SWIMMING POOLS, WATER TREATMENT, PUBLIC WATER SUPPLIES AND WASTE WATER SYSTEMS.

ACTIVE INGREDIENT:
SODIUM HYPOCHLORITE 10%
INERT INGREDIENTS 90%
100%

Hypochlorite solution containing more than 5% but less than 16% available chlorine. (EO-100/45.4)

Keep Out of Reach of Children
DANGER

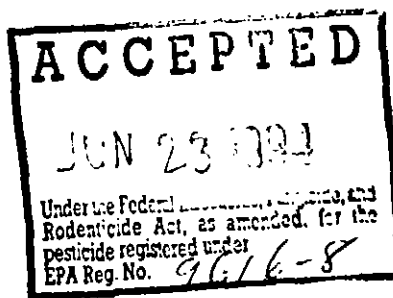
FIRST AID

EXTERNAL: IF ON SKIN, WASH WITH PLENTY OF SOAP AND WATER.
IF IN EYES, flush with water for at least 15 minutes. Get medical attention.
IF SWALLOWED, drink large quantities of water. Do NOT induce vomiting. Call a physician or poison control center immediately.

Transport upright never in passenger area. Protect rugs or upholstery.

See Back Panel for Additional Precautionary Statements

CONTENTS 1 GALLON (3.78L)



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PRECAUTIONARY STATEMENTS

HAZARDOUS TO HUMANS AND TO SOME ANIMALS: IRRITANT: Contact may cause severe skin and eye irritation or chemical burns to broken skin. Causes eye damage. Wear safety glasses or goggles and rubber gloves when handling this product. Wash after handling. Avoid breath vapors. Use in poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

PHYSICAL OR CHEMICAL HAZARDS: STRONG OXIDIZING AGENT: Mix only with water according to label directions. 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.

ENVIRONMENTAL HAZARDS: This product 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.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

STORAGE & DISPOSAL: **NOTE:** This product degrades with age. Use a chlorine test kit and increase dosage, as necessary, to obtain the required level of available chlorine. Store in a cool, dry area, away from direct sunlight or 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 and disposed in a nearby sewer. Do not reuse empty container but place in trash collection. Do not contaminate food or feed by storage, disposal, or cleaning of equipment.

SWIMMING POOL WATER DISINFECTION: Use a new pool or spring start-up; super-chlorinate 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 and 7.6. Add 1 lb. per 10,000 gal. of water of the pool to between 50 to 100 ppm. (See Table of Proportions)

To maintain the pool's chlorine level by a feeder device to yield an available chlorine residual between 0.5 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 clarity of the water frequently with appropriate test kits. Frequency of water treatment will depend upon temperature and number of swimmers. (See Table of Proportions)

Every 2 days, or as needed, super-chlorinate the pool to yield 5 to 10 ppm available chlorine by weight. Check the level of available chlorine with a test kit. Do not reenter pool until the chlorine residual is between 1.0 to 3.0 ppm. (See Table of Proportions)

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

WHITENING TUBS: While tub is still clean & clear, obtain white film of mineral 3 ppm available chlorine residual, as determined by a suitable test kit. Cover pool, prepare heater, filter and heater components for winter by following manufacturer's instructions. (See Table of Proportions)

SPAS, HOT TUBS, IMMERSION TANKS, ETC.: See instruction sheet

HURVARD AND IMMERSION TANKS, ETC.: See instruction sheet

HYDROTHERAPY TANKS: See instruction sheet

SEWAGE AND WASTE WATER EFFLUENT TREATMENT: See instruction sheet

SEWAGE AND WASTE WATER TREATMENT: See instruction sheet

DISINFECTION OF DRINKING WATER: See instruction sheet (Emergency Public Health System)

EMERGENCY DISINFECTION AT FERTILIZERS: Wells, Reservoirs, Ponds, Tanks, Ditches, Filters, Distribution Systems. See instruction sheet

EMERGENCY DISINFECTION AT FERTILIZERS & DITCHES: See instruction sheet

EMERGENCY DISINFECTION AT FERTILIZER LAKE: See instruction sheet

COOLING TOWER TREATMENT WATER: See instruction sheet

FOR THE HOME: See instruction sheet

VERTEX CONCENTRATE - TABLE OF PROPORTIONS

2-6 ppm	--	1 oz. per 2000 gallons water
1.0 ppm	--	3 oz. per 2500 gallons water
3.0 ppm	--	4 oz. per 1000 gallons water
5.0 ppm	--	6 oz. per 1000 gallons water
10.0 ppm	--	29 oz. per 2500 gallons water
50.0 ppm	--	58 oz. per 1000 gallons water
100.0 ppm	--	1 oz. per 10 gallons water
500.0 ppm	--	6 oz. per 10 gallons water

STATE AND LOCAL REGULATIONS- consult your dealer, state or local health authorities for additional information.

Manufactured By VERTEX CHEMICAL CORPORATION, Dept. II 6273

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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 (see table of proportions) to yield an available chlorine residual between 0.6 to 1.0 ppm by weight. Stabilized pools should maintain a residual of 1.0 to 1.5 ppm available chlorine. Test the ph, available chlorine residual and alkalinity of the water frequently with appropriate test kits. Frequency of water treatment will depend upon temperature and number of swimmers.

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

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

WINTERIZING POOLS - While water is still clear & clean, while filter is running, obtain a 3 ppm available chlorine residual (see table of proportions), as determined by a suitable test kit. Cover pool, prepare heater, filter and heater components for winter by following manufacturers' instructions.

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SPAS, HOT-TUBS, IMMERSION TANKS, ETC.

SPAS/HOT-TUBS: See table of proportions to obtain a free available chlorine concentration of 5 ppm, as determined by a suitable chlorine test kit. Adjust and maintain pool water ph to between 7.2 and 7.8. Some oils, lotions, fragrances, cleaners, etc., may cause foaming or cloudy water as well as reduce the efficiency of the product. To maintain the water, see table of proportions to maintain a chlorine concentration of 5 ppm.

After each use, see table of proportions and apply product to raise to 16 ppm available chlorine to control odor and algae. Do not enter spa or tub until chlorine concentration is back to 5 ppm.

During extended periods of disuse, see table of proportions and add Vertex to maintain a 3 ppm chlorine concentration.

HUBBARD & IMMERSION TANKS: See table of proportions 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. Prepare a bucket of water with 1000 ppm solution (see table of proportions) 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: See table of proportions to obtain a chlorine residual of 1 PM, 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.

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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 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. Once control is evident, apply a 15 ppm available chlorine solution. See table of proportions.

FILTER BEDS SLIME CONTROL: Remove filter from service. Drain to a depth of 1 ft. above filter sand, and add product to obtain 500 ppm evenly over the surface. (See table of proportions.) 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.

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

PUBLIC SYSTEMS: See table of proportions. Prepare a 10 ppm solution. 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 (see table of proportions) 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 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. (See table of proportions.) Add 5 to 10 gallons of clean, chlorinated water to the well in order to force the sanitizer into the rock formation. Wash the exterior of 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.

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.

EMERGENCY DISINFECTION: When boiling 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. Then add this product to make a .6 ppm solution (see table of proportions). Allow the treated water to stand for 30 minutes. Properly treated water should have a slight chlorine odor. If not, repeat dosage and allow the water to stand an additional 15 minutes. The treated water can then be made palatable by pouring it between clean containers for several times.

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PUBLIC WATER SYSTEMS

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

MAIN: 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. Use a 500 ppm available chlorine solution (see table of proportions). 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 100 oz. of this product for each 150 to 200 cubic feet of sand. The action of the product dissolving as the water passes through the bed will aid in sanitizing the new sand.

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

EXISTING EQUIPMENT: Remove equipment from service, thoroughly clean surfaces of all physical soil. Sanitize by using a solution of approximately 500 ppm available chlorine. (See table of proportions.) Fill to working capacity and let stand at least 4 hours. Drain and place in service. If the previous treatment is not practical, surfaces may be sprayed with a solution containing approximately 1000 ppm available chlorine. After drying, flush with water and return to service.

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EMERGENCY DISINFECTION AFTER FLOODS

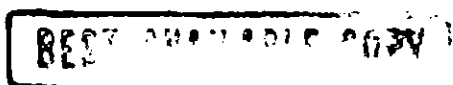
WELL: See table of proportions and thoroughly flush contaminated casing with a 500 ppm available chlorine solution. Backwash the well to increase yield and reduce turbidity, adding sufficient chlorinating solution to the backwash to produce a 10 ppm available chlorine residual as determined by a chlorine 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 see table of proportions and apply product 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 (see table of proportions). Allow to stand for 2 to 4 hours, flush and return to service.

FILTERS: When the sand filter needs replacement, apply 100 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 100 oz. per 20 sq. ft. Water should stand at a depth of 1 foot above the surface of the filter bed for 4 to 24 hours. When filter beds can be backwashed of mud and silt, apply 100 oz. of this product per each 50 sq. ft., allowing the water to stand at a depth of 1 foot above the filter sand. After 30 minutes, drain water to the level of the filter. After 4 to 6 hours, drain and proceed with normal 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 chlorine test kit



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EMERGENCY DISINFECTION AFTER FIRES

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

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 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 (see table of proportions) and rinse with potable water after 5 minutes. During the filling of the containers, dose with sufficient amounts of this product to provide at least 0.2 ppm chlorine residual. Use a chlorine test kit.

EMERGENCY DISINFECTION AFTER MAIN BREAKS

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

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COOLING TOWER/EVAPORATIVE CONDENSER WATER

SLUG FEED METHOD: Initial Dose: When system is noticeably fouled, see table of proportions and apply this product to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add this product 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, see table of proportions and apply this product 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, see table of proportions and add this product to 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, see table of proportions and apply this product to obtain 5 to 10 ppm available chlorine in system water.

Subsequent Dose: See table of proportions and maintain this treatment level by starting a continuous feed of water lost by blowdown to maintain a 1 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

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LAUNDRY SANITIZERS

Household Laundry Sanitizers

IN SOAKING SUDS - See table of proportions and provide 200 ppm available chlorine solution. Wait 5 minutes, then add soap or detergent. Immerse laundry for at least 11 minutes prior starting the wash/rinse cycle

IN WASHING SUDS - See table of proportions and add sufficient product to 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 sufficient proportion of this product with 10 gallons of water to yield 200 ppm available chlorine (see table of proportions). Promptly after mixing the sanitizer, add the solution into the prewash prior to washing fabrics/clothes in the regular wash cycle with a good detergent. Test the level of available chlorine, if solution has been allowed to stand. Add more of this product if the available chlorine level has dropped below 200 ppm.

LAUNDRY COMPOUNDS: Laundry detergents, bleaches, and sours may be used on fabric which contacts meat or poultry products, directly or indirectly, provided that the fabric is thoroughly rinsed with potable water at the end of the laundering operation.

This product can also be used in laundry compounds for uniforms or other fabric which does not come in direct contact with food products.

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