

EPA GUIDE SHEET

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Please review the EPA Registered Directions for Use for detailed information regarding applications and product concentrations:

<https://static1.squarespace.com/static/5a947ee7e17ba3336d65a9c2/t/5e7c30af5f752a1c9014023e/1585197231404/EPA+Summary+Guide.pdf>

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. CORROSIVE: Causes irreversible eye damage and skin burns. Harmful if swallowed. Avoid breathing dust and fumes. Irritating to nose and throat. Do not get in eyes, on skin or clothing. Wear protective eyewear (safety glasses or goggles). Wear protective clothing and rubber gloves 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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms.

{Used on all containers greater than or equal to 50 pounds.}[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. Contact with water slowly liberates irritating and hazardous chlorine containing gases. Decomposes at temperatures above 464°F with liberation of harmful gases. When ignited, will burn with the evolution of chlorine and equally toxic gases.

Never add water to product. Always add product to large quantities of water. Use clean, dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic material, or other chemicals may start a chemical reaction with generation of heat, liberation of hazardous gases, and possible fire and explosion.

IN CASE OF FIRE OR SMOKE: Call the fire department. Do not attempt to extinguish the fire without a self-contained breathing apparatus (SCBA). Do not let the fire burn. Flood with copious amounts of water. Do not use ABC or other dry chemical extinguishers since there is the potential for a violent reaction.

IN CASE OF CONTAMINATION OR DECOMPOSITION: Do not reseal container. Follow disposal instructions on label.

DIRECTIONS FOR USE

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

This product may be used in accordance with the directions for use as a microbiocide/microbiostat, disinfectant, sanitizer, fungicide and algaecide in the following use sites: aquatic non-food industrial, aquatic non-food residential, indoor food, indoor non-food, indoor medical, and indoor residential.

AQUATIC NON-FOOD INDUSTRIAL

RECIRCULATING WATER SYSTEMS

This product is intended for the control of bacteria, fungi and algae in the following aquatic sites: Air Washer Water Systems, Commercial/Industrial Water Cooling Systems, Evaporative Condenser Water Systems, Heat Exchange Water Systems, Lagoons (Without Human or Wildlife Use), and Industrial Scrubbing Systems.

This product may be added to the system by direct placement into the water at a point where the product will be uniformly mixed with water. The frequency of feeding and duration of the treatment will depend on the severity of the contamination. Badly fouled systems must be cleaned before treatment begins.

Intermittent or slug method

Initial Dose: When the system is noticeably fouled, add this product at the rate of 0.15 to 0.75 pounds per 1000 gallons (18 to 90 grams per 1000 liters) in the system to achieve 0.5-10 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat dosage until residual is achieved.

Subsequent Dose: When microbial control is evident, add this product at the rate of 0.03 to 0.15 pounds per 1000 gallons (3.6 to 18 grams per 1000 liters) in the system to achieve 0.5-1 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat periodically as needed to maintain control.

Continuous feed method

Initial Dose: When the system is noticeably fouled, add this product at the rate of 0.15 to 0.75 pounds per 1000 gallons (18 to 90 grams per 1000 liters) in the system to achieve 0.5-10 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat dosage until residual is achieved.

Subsequent Dose: When microbial control is evident, add this product at the rate of 0.03 to 0.15 pounds per day per 1000 gallons (3.6 to 18 grams per day per 1000 liters) in the system to maintain 0.5-1 ppm (mg/L) available chlorine, as measured by a suitable test kit.

SEWAGE SYSTEMS

This product is intended for the control of bacteria, fungi and algae in sewage systems. This product provides rapid disinfection of primary, secondary and tertiary wastewater treatment systems.

Dose Rate: Add this product at the rate of 0.03 to 0.75 pounds per 1000 gallons (3.6 to 90 grams per 1000 liters) in the system to achieve 0.2-3 ppm (mg/L) available chlorine, as measured by a suitable test kit, at the injection point in the disinfection contact chamber. Adjust the dosage to achieve disinfection and minimize the halogen concentration at the exit of the contact chamber.

AQUATIC NON-FOOD RESIDENTIAL:

SWIMMING POOL WATER SYSTEMS

This product is intended for use in controlling bacteria and algae in swimming pools. This product should be added directly to the surface of circulating water according to the directions.

Re-entry into treated swimming pools is prohibited above levels of 3 ppm chlorine.

Start up - Before using this product, make sure that the filtration system is clean and operating properly. Adjust the pH of the water to the range of 7.2-7.6 using suitable products and a reliable test kit. Adjust the alkalinity of the water to a minimum of 125 ppm (mg/L), based on the test kit reading.

Add a sufficient amount of this product directly to the surface of circulating water to raise the free available chlorine level in the water to 5-6 ppm (mg/L), based on reading from a suitable test kit. The addition of 10 ounces of this product per 10,000 gallons of water (7.5 grams per 1,000 liters) will provide approximately 5 ppm (mg/L) of available chlorine.

Shock treatment - The pool water should be superchlorinated or shocked every seven days or whenever the *combined* chlorine level is above 0.5 ppm (mg/L). *Combined chlorine* is the difference between *total* and *free* chlorine, as measured by a suitable test kit.

Add a sufficient amount of this product directly to the surface of circulating water to raise the available chlorine level to 5-6 ppm (mg/L), based on test kit readings. The addition of 10 ounces of this product per 10,000 gallons of water (7.5 grams per 1,000 liters) will provide approximately 5 ppm (mg/L) of available chlorine. If the combined chlorine reading is not below 0.5 ppm (mg/L) and the water has not been restored to its normal clarity, repeat the shock treatment described above.

Do not enter water until free available chlorine reading is below 3 ppm (mg/L), combined chlorine is below 0.5 ppm (mg/L) and the water is restored to its normal clarity.

Maintenance treatment - Add this product daily or as needed to maintain the free available chlorine level in the water at 1-3 ppm (mg/L) as indicated by a reliable test kit. The addition of 2 ounces of this product per 10,000 gallons of water (1.5 grams per 1,000 liters) will provide approximately 1 ppm (mg/L) of available chlorine. Weather and usage effect sanitizer levels. In addition, some oils, lotions, fragrances, cleaners, etc. may cause foaming or cloudy water as well as reduce the efficiency of this product. Maintain the pH at 7.2-7.6 and the alkalinity at a minimum of 125 ppm (mg/L).

When the total dissolved solid (TDS) reaches 3000 ppm (mg/L) or whenever the water becomes difficult to manage, the water should be drained and fresh water added to the pool.

Winterizing - Thoroughly clean and vacuum the pool. While the water is still clear and clean, apply 16 ounces of this product for each 10,000 gallons of water (12 grams per 1,000 liters), while the filtration system is running. This will increase the available chlorine by approximately 8 ppm (mg/L). Cover pool, prepare heater, filter and heater components for winter by following manufacturers' instructions.

AQUATIC NON-FOOD RESIDENTIAL:

SPAS, HOT-TUBS, IMMERSION AND HYDROTHERAPY TANKS

This product is intended for use in controlling bacteria in spas, hot tubs, Hubbard, immersion and hydrotherapy tanks. This product is also highly effective in controlling and destroying algae in outdoor spas and hot tubs. This product should be added directly to the surface of circulating water according to the directions.

SPA AND HOT TUB DISINFECTION

Start up - Before using this product, make sure that the filtration system is clean and operating properly. Adjust the pH of the water to the range of 7.2-7.6 and the alkalinity of the water to a minimum of 125 ppm (mg/L), using suitable products and reliable test kits. For bather safety, it is not recommended that water temperatures exceed 104°F (40°C).

Add a sufficient amount of this product directly to the surface of circulating water to raise the free chlorine level in the water to 5-6 ppm (mg/L), based on suitable test kit readings. The addition of one ounce of this product per 1,000 gallons (0.75 grams per 100 liters) of water will increase the available chlorine by 5 ppm (mg/L).

Shock treatment - After each use, the water should be superchlorinated or shocked. Add a sufficient amount of this product directly to the surface of circulating water to raise the available chlorine level to 5-6 ppm (mg/L), based on test kit readings. The addition of one ounce of this product per 1,000 gallons (0.75 grams per

100 liters) of water will increase the available chlorine by 5 ppm (mg/L). If the combined chlorine reading is not below 0.5 ppm (mg/L) and the water has not been restored to its normal clarity, repeat the shock treatment described above. *Combined chlorine* is the difference between *total* and *free* chlorine, as measured by a suitable test kit

Maintenance treatment - Add this product daily or as needed to maintain the free available chlorine level in the water at 3- 5 ppm (mg/L) as indicated by a suitable test kit. The addition of 0.5 ounce of this product per 1,000 gallons of water (0.38 grams per 100 liters) will increase the available chlorine by 2.5 ppm (mg/L). Weather and usage effect sanitizer levels. In addition, some oils, lotions, fragrances, cleaners, etc. may cause foaming or cloudy water as well as reduce the efficiency of this product. Maintain the pH at 7.2-7.6 and the alkalinity at a minimum of 125 ppm (mg/L).

When the total dissolved solid (TDS) reaches 3000 ppm (mg/L) or whenever the water becomes difficult to manage, the water should be drained and the spa/hot tub thoroughly cleaned before adding fresh water.

HUBBARD AND IMMERSION TANKS

Add 5 oz. of this product for each 1,000 gallons (3.75 grams per 100 liters) of water to obtain an available chlorine level of 25 ppm (mg/L), as measured by a suitable test kit. Adjust and maintain the pH at 7.2-7.6. After each use, drain the tank. Add 1 oz. to a bucket of water and circulate this solution through the agitator of the tank for 15 minutes and then rinse out the solution. Clean the tank thoroughly and dry with clean cloths.

HYDROTHERAPY TANKS

Add this product daily or as needed to maintain the free available chlorine in the water at 1 - 3 ppm (mg/L) as indicated by a suitable test kit. The addition of 0.5 ounce of this product per 1,000 gallons (0.38 grams per 100 liters) of water will increase the available chlorine by 2.5 ppm (mg/L). Adjust and maintain the pH at 7.2-7.6 and the alkalinity at a minimum of 75 ppm (mg/L). Operate the filtration system continuously. Drain the tank weekly and clean thoroughly before refilling.

AQUATIC NON-FOOD RESIDENTIAL:

ORNAMENTAL FOUNTAINS

This product is intended for use in controlling bacteria and algae in residential ornamental fountains and similar aquaria. This product should be added directly to the surface of circulating water according to the directions.

It should be noted that very low levels of chlorine can be highly toxic to certain fish and other aquatic species.

Start up - Before using this product, make sure that the system is clean and the circulation system is operating properly.

Add a sufficient amount of this product directly to the surface of circulating water to raise the available chlorine level to 5-6 ppm (mg/L), based on suitable test kit readings. The addition of one ounce of this product will provide about 5 ppm (mg/L) of available chlorine to 1,000 gallons of water (0.75 grams per 100 liters).

Shock treatment - The water should be superchlorinated or shocked every two weeks or whenever the *combined* chlorine level is above 0.5 ppm (mg/L). *Combined* chlorine is the difference between *total* and *free* chlorine, as measured by a suitable test kit.

Add a sufficient amount of this product directly to the surface of circulating water to raise the free chlorine level to 5-6 ppm (mg/L), based on test kit readings. The addition of one ounce of this product will provide about 5 ppm (mg/L) of available chlorine to 1,000 gallons of water (0.75 grams per 100 liters). If the combined chlorine reading is not below 0.5 ppm (mg/L) and the water has not been restored to its normal clarity, repeat the shock treatment described above.

Maintenance treatment - Add this product daily or as needed to maintain the available chlorine in the water at 1-3 ppm (mg/L) as indicated by a reliable test kit. The addition of 0.5 ounce of this product will provide about 2.5 ppm (mg/L) of available chlorine to 1,000 gallons of water (0.38 grams per 100 liters). Weather and organic debris will affect sanitizer levels and usage.

INDOOR FOOD:

This product may be used on food contact surfaces in accordance with 21CFR 178.1010 of the Federal Food, Drug and Cosmetic Act.

SOLUTION PREPARATION- Prepare a 100 ppm (mg/L) sanitizing solution by thoroughly mixing 0.2 oz. of this product with 10 gallons of water (0.15 gram per liter). Solutions containing an initial concentration of 100 ppm (mg/L) available chlorine must be tested with a suitable chlorine test kit and adjusted periodically to ensure that the available chlorine does not drop below 50 ppm (mg/L). Should the available chlorine level drop below 50 ppm (mg/L), either discard the solution or add 0.1 ounce of this product per 10 gallons of water (75 milligrams per liter) to increase the available chlorine level 50 ppm (mg/L) and maintain the 100 ppm (mg/L) solution strength.

SANITIZATION OF NON-POROUS FOOD CONTACT SURFACES

This product is recommended for use in poultry houses, egg handling equipment, dairy farm milk handling facilities/equipment, dairy farm milking equipment, household/domestic dwellings indoor food handling areas, food processing plant premises and equipment (food and non-food contact), dairies/cheese processing plant premises and equipment (food and non-food contact), meat processing plant premises and equipment (food and non-food contact), poultry processing plant premises and equipment (food and non-food contact), fish/seafood processing plant premises and equipment (food and non-food contact), eating establishments, eating establishments equipment/utensils (food contact), milk shake machines, soft serve ice cream machines.

RINSE OR SPRAY METHOD - Clean equipment surfaces in the normal manner and rinse with potable water. It may be necessary to remove gross filth and heavy soil from surfaces by a pre-scrape, pre-flush, and where necessary, a pre-soak treatment. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for 2 to 5 minutes. Do not rinse equipment with water after treatment.

The same solution may be used in the feed tanks of spray type machines providing at least one minute contact time to sanitize equipment.

IMMERSION METHOD - Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for 2 to 5 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

EGG WASHING

This product is recommended for use in commercial egg washing treatments and hatching egg washing treatments.

The eggs should be washed in a continuous operation and shall be completed as rapidly as possible. The eggs shall not be allowed to stand or soak in water. Immersion-type washers shall not be used. After washing, the eggs shall be spray rinsed with the sanitizing solution. At intervals during use, this product should be added to the circulating spray rinse solution to maintain 100 ppm (mg/L) available chlorine.

INDOOR NON-FOOD:

SANITIZATION OF NON-POROUS NON-FOOD CONTACT SURFACES

This product is recommended for use in eating establishments, food handling and serving areas (non-food contact), commercial/institutional/industrial premises/equipment, laundry (commercial).

SOLUTION PREPARATION- Prepare a 100 ppm (mg/L) sanitizing solution by thoroughly mixing 0.2 oz. of this product with 10 gallons of water (0.15 gram per liter). Solutions containing an initial concentration of 100 ppm (mg/L) available chlorine must be tested with a suitable chlorine test kit and adjusted periodically to ensure that the available chlorine does not drop below 50 ppm (mg/L). Should the available chlorine level drop below 50 ppm (mg/L), either discard the solution or add 0.1 ounce of this product per 10 gallons of water (75 milligrams per liter) to increase the available chlorine level 50 ppm (mg/L) and maintain the 100 ppm (mg/L) solution strength.

RINSE OR SPRAY METHOD - Clean equipment surfaces in the normal manner and rinse with potable water. It may be necessary to remove gross filth and heavy soil from surfaces by a pre-scrape, pre-flush, and where necessary, a pre-soak treatment. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for 2 to 5 minutes. Do not rinse equipment with water after treatment.

The same solution may be used in the feed tanks of spray type machines providing at least one minute contact time to sanitize equipment.

IMMERSION METHOD - 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 and do not soak equipment overnight.

FABRIC AND DIAPER SANITIZER

This product is recommended for stain removal and reduction of ammonia causing bacteria in institutional and commercial laundering of fabrics and diapers.

Wet fabric or diapers should be spin-dried before the sanitizer is applied. One-third (1/3) ounce of this product should be added for each 16 gallon wash load (9 grams per 60 liter wash load). The above application gives approximately 100 ppm (mg/L) available chlorine in the pre-wash cycle. Run this solution in the pre-wash, followed by the regular wash cycle with a good detergent.

INDOOR NON-FOOD:

PASTEURIZER/WARMER/CANNERY COOLING WATER SYSTEMS

This product is intended for the control of bacteria, fungi and algae in pasteurizer/warmer/cannery cooling water systems.

This product may be added to the system by direct placement into the water at a point where the product will be uniformly mixed with water. The frequency of feeding and duration of the treatment will depend on the severity of the contamination. Badly fouled systems must be cleaned before treatment begins.

Intermittent or slug method

Initial Dose: When the system is noticeably fouled, add this product at the rate of 0.15 to 0.75 pounds per 1000 gallons (18 to 90 grams per 1000 liters) in the system to achieve 0.5-10 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat dosage until residual is achieved.

Subsequent Dose: When microbial control is evident, add this product at the rate of 0.03 to 0.15 pounds per 1000 gallons (3.6 to 18 grams per 1000 liters) in the system to achieve 0.5-1 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat periodically as needed to maintain control.

Continuous feed method

Initial Dose: When the system is noticeably fouled, add this product at the rate of 0.15 to 0.75 pounds per 1000 gallons (18 to 90 grams per 1000 liters) in the system to achieve 0.5-10 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat dosage until residual is achieved.

Subsequent Dose: When microbial control is evident, add this product at the rate of 0.03 to 0.15 pounds per day per 1000 gallons (3.6 to 18 grams per day per 1000 liters) in the system to maintain 0.5-1 ppm (mg/L) available chlorine, as measured by a suitable test kit.

INDOOR MEDICAL:

This product is recommended for use as a sanitizer on hospital surgical fluid wastes.

SOLUTION PREPARATION- Prepare a 100 ppm (mg/L) sanitizing solution by thoroughly mixing 0.2 oz. of this product with 10 gallons of water (0.15 gram per liter). Solutions containing an initial concentration of 100 ppm (mg/L) available chlorine must be tested with a suitable chlorine test kit and adjusted periodically to ensure that the available chlorine does not drop below 50 ppm (mg/L). Should the available chlorine level drop below 50 ppm (mg/L), either discard the solution or add 0.1 ounce of this product per 10 gallons of water (75 milligrams per liter) to increase the available chlorine level 50 ppm (mg/L) and maintain the 100 ppm (mg/L) solution strength.

RINSE OR SPRAY METHOD - Clean equipment surfaces in the normal manner and rinse with potable water. It may be necessary to remove gross filth and heavy soil from surfaces by a pre-scrape, pre-flush, and where necessary, a pre-soak treatment. 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.

The same solution may be used in the feed tanks of spray type machines providing at least one minute contact time to sanitize equipment.

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

INDOOR RESIDENTIAL:

HARD SURFACE SANITIZATION

This product is recommended for use as a hard surface sanitizer on household/domestic dwellings indoor premises, residential floors, laundry (household and coin operated), toilet bowls (interior surfaces), bathroom premises/hard surfaces, refuse/solid waste containers (garbage cans).

SOLUTION PREPARATION -Prepare a 100 ppm (mg/L) sanitizing solution by thoroughly mixing 0.2 oz. of this product with 10 gallons of water (0.15 gram per liter). Solutions containing an initial concentration of 100 ppm (mg/L) available chlorine must be tested with a suitable chlorine test kit and adjusted periodically to ensure that the available chlorine does not drop below 50 ppm (mg/L). Should the available chlorine level drop below 50 ppm (mg/L), either discard the solution or add 0.1 ounce of this product per 10 gallons of water (75 milligrams per liter) to increase the available chlorine level 50 ppm (mg/L) and maintain the 100 ppm (mg/L) solution strength.

RINSE OR SPRAY METHOD - Clean equipment surfaces in the normal manner and rinse with potable water. It may be necessary to remove gross filth and heavy soil from surfaces by a pre-scrape, pre-flush, and where necessary, a pre-soak treatment. 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.

The same solution may be used in the feed tanks of spray type machines providing at least one minute contact time to sanitize equipment.

IMMERSION METHOD - 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 and do not soak equipment overnight.

INDOOR FOOD:

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

PUBLIC SYSTEMS: Feed 1 ounce of this product per 6000 gallons of water until a free available chlorine residual of at least 0.2 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 dissolving 1 ounce of this product into 40 gallons of water. After covering the well, pour the disinfecting solution into the well through both the pipe sleeve opening and the pipeline. Wash the exterior of the pump cylinder also with the disinfecting 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. Contact 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 disinfecting solution into the well. This solution can be made by dissolving 1 ounce of this product into 40 gallons of water. Add 5 to 10 gallons of clean, chlorinated water to the well in order to force the disinfectant into the rock formation. Wash the exterior of pump cylinder with the disinfectant. 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 disinfectant 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:

This product is recommended for disinfecting raw or pre-treated (settled, coagulated and/or filtered) water supplies intended for use as drinking water for humans and domestic animals.

The source of the water to be treated may be a river, lake, well, cistern or similar system. To obtain the desired disinfection results, the water to be treated should be clear and free of dirt and organic debris. If the source of the water is cloudy and contains dirt and organic debris, the water should be held in holding tanks, treated with coagulating agents and filtered to remove the dirt and organic debris.

Dissolve 0.1 ounce of this product in 40 gallons of water (180 milligrams per 10 liters) to obtain a concentration of 10 ppm (mg/L) of available chlorine. Let the water stand for one hour before using. A residual of 1 ppm (mg/L) of available chlorine, as measured by a reliable test kit, should be maintained in the water to ensure disinfection.

Preparation of Stock Solution- Dissolve one heaping teaspoon of this product (approximately 10 grams or 1/3 ounce) into 1 liter of water. This mixture will produce a 0.6% stock chlorine solution (6,000 mg/L). Add 20 drops of this stock solution for each liter of water to be treated. The stock solution should be prepared fresh weekly.

PUBLIC WATER SYSTEMS

RESERVOIRS: ALGAE CONTROL-Continuous chlorination is the most effective method for destroying algae; however, slug treatment can also be effective. Suitable chlorine feeding points should be selected on each stream at least 50 yards upstream from the points of entry into the reservoir. Add this product at the following rates:

Initial Dose: When the system is noticeably fouled, add this product at the rate of 1.5 to 7.5 ounces per 10,000 gallons to achieve 0.5-1.5 ppm (mg/L) available chlorine, as measured by a suitable test kit. Repeat dosage until residual is achieved.

Subsequent Dose: When control is evident, add this product at the rate of 0.5 to 2.3 ounces per 10,000 gallons to maintain 0.2-0.5 ppm (mg/L) available chlorine, as measured by a suitable test kit.

MAINS - Thoroughly flush section to be disinfected 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 chlorinator. 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 9 ounces of this product for each 10 cubic feet of moving 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 service.

NEW FILTER SAND - Apply 16 ounces 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 disinfecting the new sand.

NEW WELLS - Flush the casing with a 50 ppm available chlorine solution of water containing 1.2 ounces of this product for each 100 gallons of water. The solution should be pumped or fed by gravity into the well after thorough mixing with agitation. After 24 hours flush well until all traces of chlorine have been removed from the water. 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. Contact your local Health Department for further details.

EXISTING EQUIPMENT -Remove equipment from service, thoroughly clean surfaces of all physical soil. Disinfect by placing 9 ounces of this product for each 10 cubic feet capacity (approximately 500 ppm available chlorine). Fill to working capacity and let stand at least 4 hours. Drain and place in service. If the previous treatment is not practical, surfaces may be sprayed with a solution containing 1.2 ounces of this product for each 5 gallons of water (approximately 1000 ppm available chlorine). After drying, flush with water and return to service.

EMERGENCY DISINFECTION AFTER FLOODS:

WELLS - Thoroughly flush contaminated casing with a 500 ppm available chlorine solution. Prepare this solution by mixing 1.2 ounces of this product with 10 gallons of water. Backwash the well to increase yield and reduce turbidity, adding sufficient chlorinating solution to the backwash to produce a 10 ppm available chlorine residual, as determined by a chlorine test kit. After the turbidity has been reduced and the casing has been treated, add sufficient chlorinating solution to produce a 50 ppm available chlorine residual. After 24 hours flush well until all traces of chlorine have been removed from the water. 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. Retreat well if water samples are biologically unacceptable. Contact your local Health Department for further details.

RESERVOIRS - In case of contamination by overflowing streams, establish chlorinating 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 9 ounces of product per 10 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 1.2 ounces of this product for each 5 gallons of water (1000 ppm available chlorine). Allow to stand for 2 to 4 hours, flush and return to service.

FILTERS - When the sand filter needs replacement, apply 16 ounces of this product for each 150 to 200 cubic feet of sand. When the filter is severely contaminated, additional product should be distributed over the surface at the rate of 16 ounces per 20 sq. ft. Water should stand at a depth of 1 foot above the surface of the filter bed for 4 to 24 hours. When filter beds can be back-washed of mud and silt, apply 16 ounces of this product per each 50 sq. ft., allowing the water to stand at a depth of 1 foot above the filter sand. After 30 minutes, drain water to the level of the filter. After 4 to 6 hours drain, and proceed with normal back-washing.

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

EMERGENCY DISINFECTION AFTER FIRES:

CROSS CONNECTIONS OR EMERGENCY CONNECTIONS - Set up a chlorine feed system near the intake of the untreated water supply. Add 1.3 ounces of this product per 1,000 gallons of water until a chlorine residual of at least 0.2 ppm (as measured by a chlorine test kit) at the point where the untreated supply enters the regular distribution system.

EMERGENCY DISINFECTION AFTER DROUGHT:

SUPPLEMENTARY WATER SUPPLIES- A chlorine feed system should be set up on the supplementary water line. This product should be added at 0.7 ounces per 1,000 gallons until a minimum chlorine residual of 0.2 ppm (as measured by a chlorine test kit) is achieved. The water should be held for 20 minute before use.

WATER SHIPPED IN BY TANKS, TANK CARS, ETC. - Thoroughly clean all containers and equipment. Spray a 500 ppm available chlorine solution and rinse with potable water after 5 minutes. This solution is made by mixing 0.6 ounces of this product for each 5 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, as measured by 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 chlorinator. 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 AIRCRAFT WATER SYSTEMS:

{Carton or Pail Label}

Prior to disinfecting, empty as much water as possible from aircraft's water system using procedures defined in the manufacturer's guidelines. Prepare the disinfection solution, 200 ppm available chlorine, by mixing [one packet,] 1.5 oz. (42 grams) of this product per thirty (30) gallons of potable water. The solution may be made up in a tank, drum or water cart. Stir until granules are fully dissolved, and solution is completely mixed. Transfer solution into the aircraft's potable storage tank. After the storage tank is full open each faucet on aircraft and run water for a short time to allow disinfecting solution to disperse throughout the system. Where possible top off tank with additional disinfecting solution. Allow water system to soak for 6 to 10 minutes. Following soak time drain solution, as much as possible, from water system. Flush tank and lines with a potable water rinse and return to service.

Sampling of the aircraft's water system for total coliform must be conducted at a frequency no less than that determined by the disinfection and flushing frequency recommended by the aircraft water system manufacturer, when available, and as identified in the operations and maintenance plan in 40 CFR 141.804.

{Text for pre-packaged packet}

<p style="text-align: center;">Sani-Powder</p> <p>-</p> <p>Provides 55% Available Chlorine</p> <p style="text-align: center;">KEEP OUT OF REACH OF CHILDREN DANGER</p> <p>CORROSIVE: Causes irreversible eye damage and skin burns. Harmful if swallowed. Avoid breathing dust and fumes. Irritating to nose and throat. Do not get in eyes, on skin or clothing. Wear protective eyewear (safety glasses or goggles). Wear protective clothing and rubber gloves 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.</p> <p>.FOR EMERGENCY MEDICAL INFORMATION, 1-800-222-1222</p>	<p>See outer carton for First Aid Statements, additional Precautionary Information and Directions for Use.</p> <p>Use 1 packet, 1.5 oz. (42 grams) per 30 gallons of water to prepare a solution containing 200 ppm available chlorine.</p> <p>CONTAINER DISPOSAL: Packet is destroyed by removing the product. Dispose of completely empty packet in trash, in a sanitary landfill or by incineration.</p> <p>EPA Reg. No. 91138- EPA Est. No. 91138-TN-001</p> <p style="text-align: center;">ECA Water Systems, LLC 115 Dansworth Lane Oak Ridge, TN 37830 (865) 207-6545</p> <p>Net Wt. 1.5 oz. (42 grams)</p>
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STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Keep material dry and in a dry area. Store in original container where temperatures do not exceed 125°F (52°C) for 24 hours. Keep container tightly closed.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. 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. The preferred disposal methods are incineration or chemical treatment in accordance with Federal, State and Local regulations.

DO NOT put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction and fire. DO NOT transport wet or damp material.

{Text for bulk bags}

[CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or reconditioning if appropriate or, dispose of empty bag in a sanitary landfill or by incineration.]

{Text for fiber drum with liner}

[CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of liner in a sanitary landfill or by incineration. If drum is contaminated and cannot be reused, dispose of it in the same manner required for its liner.]

{Text for plastic container, greater than five gallons, with liner}

[CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling, if available, or dispose of liner in a sanitary landfill or by incineration. For outer container triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closure. 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 this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.]

{Text for plastic container, greater than five gallons, without liner}

[CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closure. 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 this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.]

{Text for plastic container, less than or equal to five gallons, without liner}

[CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Triple rinse Pour rinsate into application equipment or a mix tank or store rinsate for later disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.]

{Text for household or residential use products}

[CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available.]

{Text for pre-packaged packet}

[CONTAINER HANDLING: Nonrefillable container. Packet is destroyed by removing the product. Dispose of completely empty packet in trash, in a sanitary landfill or by incineration.]

{Text for carton}

[CONTAINER HANDLING: Nonrefillable container. Offer for recycling, if available, or discard in trash.]

[Batch [Lot] number]

Date: Rev.2 November 16, 2017
SAFETY DATA SHEET ECA-500

1. Identification of Substance/Mixture and the Company Undertaking

1.1 Product Identifier: SureAdditive Scavenger/ Disinfectant

1.2 Relevant identified uses of the substance or mixture and uses advised:
Water treatment

1.3 Details of the supplier of the safety data sheet:

ECA Water Systems, LLC
136 Bus Terminal Road
Oak Ridge, TN 37830

E-Mail Address: vndskk@gmail.com
US Telephone Number: +1 865-207-6545

1.4 Emergency Telephone Number: +1 865-207-6545

2. Hazards Identification

2.1 Classification of the Substance or Mixture:

CLP/GHS Classification:

Acute Inhalation Toxicity Category 2 (H310)

Skin Corrosion Category 1A (H314)

Eye Damage Category 1 (H318)

Specific Target Organ Toxicity Single Exposure Category 3 (H335)

Hazardous to the Aquatic Environment- Acute Hazard Category 1 (H400)

Hazardous to the Aquatic Environment- Chronic Hazard Category 1 (H410)

2.2 Label Elements

Danger!



Contains: Solid HOCL Blend

Hazard Phrases

H310 Fatal if inhaled

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Phrases

P260 Do not breathe dust.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area

P273 Avoid release to the environment.

P280 Wear protective gloves, eye protection and face protection

P284 In case of inadequate ventilation wear respiratory protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310 Immediately call a POISON CENTER or doctor.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin

with soap and water.
 P363 Wash contaminated clothing before reuse.
 P310 Immediately call a POISON CENTER or doctor.
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P310 Immediately call a POISON CENTER or doctor.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor.
 P391 Collect spillage.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents and container in accordance with local and national regulations.

2.3 Other Hazards:

EUH 031: Contact with acids liberate Toxic gas

3. Composition/Information on Ingredients

3.2 Mixtures:

Chemical Name	CAS-No. / EINECS-No	%	GHS Classification:
Solid HOCL Blend	Proprietary	>50	Ox. Sol. 2 (H272); Oral Tox. 4 (H302); Inhal. Tox. 2 (H330); Skin Cor.1A (H314); Eye Irrit. 2 (H319); STOT SE 3 (H335); Aqua. Acute Tox. 1 (H400); Aqua Chronic Tox. 1 (H410)
Sodium acid acetate	Proprietary	<20	Eye Dam 1 (H318)
Carbonic acid disodium salt	497-19-8 / 207-838-8	<20	Eye Irrit. 2 (H319)
Sodium Sulfate	7757-82-6 / 231-820-9	<10	Not Hazardous
Sodium Chloride	7647-14-5 / 231-598-3	<5	Not Hazardous

4. First Aid Measures

4.1 Description of First Aid Measures:

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention.

Skin Contact: Wash thoroughly with water for 15 minutes. Seek immediate medical attention.

Eye Contact: Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention.

Ingestion: Do NOT induce vomiting. If the victim is fully conscious, have them rinse mouth with water. Seek immediate medical attention. Never give anything by mouth to a person who is unconscious or drowsy.

4.2 Most Important symptoms and effects, both acute and delayed: Fatal if inhaled. Inhalation of dust may cause irritation of upper and lower airways, coughing, laryngospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure. Dermal exposures along with moisture may cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns. Repeated and prolonged skin contact may cause a dermatitis. Causes serious eye damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye. Exposure by ingestion may cause irritation, nausea, and vomiting. May cause local tissue damage to esophagus and stomach such as burning, inflammation, local ulceration, and may cause gastrointestinal bleeding.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical attention is required for all routes of exposure

Treat as a corrosive substance. This material is more irritating to the skin and eyes in the presence of water. For prolonged exposures and significant exposures, consider delayed injury to exposed tissues. There is no antidote. Cyanuric acid is readily removed from the body via the renal system, and is not bio-accumulated. Treatment is supportive care. Follow normal parameters for airway, breathing, and circulation.

5. Fire-Fighting Measures

5.1 Extinguishing Media: Flood with copious amounts of water. Do not use ABC fire extinguishers. Do not use dry chemicals, carbon dioxide, or halogenated extinguishing agents.

5.2 Special Hazards arising from the Substance or Mixture: If heated by outside source to temperatures above 240 °C (464 °F), this product will undergo decomposition with the evolution of noxious gases but no visible flame. When ignited will burn with the evolution of chlorine and equally toxic gases. Contaminated or wet product may act an oxidizer and intensify fire potential. Wet material may generate nitrogen trichloride, an explosion hazard.

5.3 Advice for Firefighters: Move container from fire area if it can be done without risk. Material which appears undamaged except for being damp on the outside, should be opened and inspected immediately. DO NOT attempt to reseal contaminated drums. Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures: Isolate the area and keep unnecessary personnel away. Stay upwind and keep out of low areas. Wear appropriate protective clothing and equipment (see section 8). Prevent contact with skin, eyes and clothing. Do not breath dust or gas.

6.2 Environmental Precautions: Prevent entry in storm sewers and waterways. Report spill as required by local and national regulations.

6.3 Methods and Material for Containment and Cleaning Up: DO NOT add water to spilled material. DO NOT use floor sweeping compounds to clean up spills. Sweep and scoop spilled material into clean, dedicated equipment. Every attempt should be made to avoid mixing spilled material with other chemicals or debris when cleaning up. DO NOT attempt to reseal contaminated drums. DO NOT transport wet or damp material. Damp material should be neutralized to a non-oxidizing state. Contact manufacturer for instructions for handling and disposal of damp material.

6.4 Reference to Other Sections: Refer to Section 13 for disposal advice.

7. Handling and Storage

7.1 Precautions for Safe Handling: Prevent eye and skin contact. Do not breath dust or gas. Avoid creation of dust. Wash exposed skin thoroughly with soap and water after use. Wear appropriate protective clothing and equipment (see section 8). Do not eat, drink, or smoke when using this product.

NEVER add water to this product. Always add product to large quantities of water. Use clean, dry utensils. Do not add the product to any dispensing device containing residuals of other products. Read and follow product use instructions.

Do not reuse empty containers. Empty containers retain product residue and may be dangerous. Follow all SDS guidelines when handling empty containers.

7.2 Conditions for Safe Storage, Including any Incompatibilities: Store and handle in accordance with all current regulations and standards. (NFPA Oxidizer Class 1). Store in original container and in a dry area where temperatures do not exceed 52 °C (125 °F) for 24 hours. Do not allow water to get in container. If liner is present, tie after each use. Keep container tightly closed and properly labeled. Store locked up, away from incompatible materials: acids, ammonia, bases, floor sweeping compounds, calcium hypochlorite, reducing agents, and organic solvents and compounds.

7.3 Specific end use(s): Waste water treatment.

8. Exposure Controls / Personal Protection

Chemical Name	Exposure limit(s)
Solid HOCL Blend -United Kingdom -Germany -France -European Union	None established None established None established None established
Sodium acid acetate -United Kingdom -Germany -France -European Union	None established None established None established None established
Carbonic acid disodium salt -United Kingdom -Germany -France -European Union	None established None established None established None established
Sodium Sulfate -United Kingdom -Germany -France -European Union	None established None established None established None established
Sodium Chloride -United Kingdom -Germany -France -European Union	None established None established None established None established

Note: If not listed above, refer to local regulations for specific country exposure limits.

8.2 Exposure Controls:

Engineering Controls: Use only in well-ventilated areas. Provide local exhaust ventilation where dust may be generated. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Respiratory Protection: Wear an approved respirator (mask) with appropriate eye protection. A full face piece respirator provides both eye and respiratory protection. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with all applicable regulations; and good Industrial Hygiene practice.

Hand Protection: Wear appropriate chemical resistant gloves.

Skin Protection: Wear protective clothing to minimize skin contact. When potential for contact with material exists, wear disposable coveralls suitable for dust exposure. Contaminated clothing should be removed and laundered before reuse.

Eye Protection: Wear chemical safety goggles.

9. Physical and Chemical Properties

9.1 Information on basic Physical and Chemical Properties

Appearance:	White, Compact solid and granular particles
Odor:	Slight chlorine

Odor Threshold:	Not determined
pH:	6.7 (When 1.72 grams is dissolved in 1 gallons of water)
Melting/Freezing Point:	Not applicable
Boiling Point:	Not applicable
Flash Point:	Not applicable
Evaporation Rate: (n-butylacetate =1)	Not applicable
% Volatile by Volume:	Not applicable
Lower Flammability Limit: Upper Flammability Limit:	Not applicable
Vapor Pressure:	Not applicable
Vapor Density(Air=1):	Not applicable
Solubility:	Soluble in water
Autoignition Temperature:	Not determined
Decomposition Temperature:	225-250°C (437-482°F)
Viscosity:	Not applicable
Explosive Properties:	Wet material may generate nitrogen trichloride, an explosion hazard.
Oxidizing Properties:	Oxidizing Solid
Specific Gravity (H₂O= 1):	1.59

10. Stability and Reactivity

10.1 Reactivity: Not reactive under normal temperatures and pressures.

10.2 Chemical Stability: Stable at normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions: None expected.

10.4 Conditions to Avoid: Incompatible materials.

10.5 Incompatible Materials: Do not get water inside container. Wet material may generate nitrogen trichloride, an explosion hazard. Avoid contact with easily oxidizable organic material. Contact with acids liberates toxic gas.

10.6 Hazardous Decomposition Products: chlorine, nitrogen, nitrogen trichloride, cyanogen chloride, oxides of carbon, and phosgene.

11. Toxicological Information

11.1 Information on Toxicological Effects:

Potential Health Effects:

Acute Toxicity Values:

Product ATE: LD50 Oral 2025 mg/kg.
LD50 Dermal >2000 mg/kg
LC50 Inhalation 0.3 mg/L (Dust / mist)

Solid HOCL Blend:

LD50 Oral Rat: 1823 mg/kg
LD50 Skin Rat: >5000 mg/kg
LC50 Inhalation Rat: >0.27 - <1.17 mg/L/4 hr.

Sodium acid acetate:

LD50 Oral Rat: >5000 mg/kg
LD50 Skin Rat: >5000 mg/kg

Carbonic acid disodium salt:

LD50 Oral Rat: 2800 mg/kg
LD50 Skin Rabbit >2000 mg/kg
LC50 Inhalation Guinea pig: 0.8 mg/L/2 hr.

Sodium Sulfate: Not acutely toxic

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Sodium Chloride: Not acutely toxic

Skin corrosion / irritation: Dermal exposures along with moisture may cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns. Repeated and prolonged skin contact may cause a dermatitis.

Serious eye damage / irritation: Causes serious eye damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye.

Inhalation: Fatal if inhaled. Inhalation of dust may cause irritation of upper and lower airways, coughing, laryngeospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure.

Ingestion: Exposure by ingestion may cause irritation, nausea, and vomiting. May cause local tissue damage to esophagus and stomach such as burning, inflammation, local ulceration, and may cause gastrointestinal bleeding.

Respiratory or skin sensitization: Product does not contain skin or respiratory sensitizers.

Germ cell mutagenicity: No data available

Carcinogenicity: None of the other components at 0.1% or greater are listed as a carcinogen or potential carcinogen by IARC, or EU CLP.

Reproductive Toxicity: No adverse effects on reproduction are known.

Specific Target Organ Toxicity:

Single Exposure: None expected

Repeat Exposure: None expected

Aspiration: Not an aspiration hazard.

12. Ecological Information

12.1 Aquatic Toxicity: Very toxic to aquatic life.

Solid HOCL Blend:

LC50: Oncorhynchus mykiss 0.13-0.36 mg/L/96 hr.

EC50: Daphnia magna: 0.196 mg/L/48 hr.

Sodium acid acetate:

LC50: Fish > 5,000 mg/L/ 96 hr.

EC50: Aquatic Invertebrates > 50 mg /L/48 hr.

Carbonic acid disodium salt:

LC50: Bluegill fish 320 mg/L/96 hr.

EC50: Daphnia magna: 265 mg/L/48 hr

Sodium Sulfate: Non-hazardous to the aquatic environment.

Sodium Chloride: Non-hazardous to the aquatic environment.

12.2 Persistence and Degradability:

Solid HOCL Blend: This material is believed not to persist in the environment. Free available chlorine is rapidly consumed by reaction with organic and inorganic materials to produce chloride ion. The stable degradation products are chloride ion and cyanuric acid.

12.3 Bioaccumulative Potential:

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Solid HOCL Blend: This material hydrolyses in water liberating free available chlorine and cyanuric acid. These products are not bioaccumulative.

12.4 Mobility in Soil: No data for product.

12.5 Results of PBT and vPvB Assessment: Components do not meet requirements for assessment.

12.6 Other Adverse Effects: None known.

13. Disposal Considerations

13.1 Waste Treatment Methods: Dispose of contents/container in accordance with all local and national regulations.

14. Transport Information

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
EU ADR/RID	UN3077	Environmentally Hazardous Substances solid, n.o.s. (HOCL Blend)	9	III	Marine Pollutant
IMDG	UN3077	Environmentally Hazardous Substances solid, n.o.s. (HOCL Blend)	9	III	Marine Pollutant
IATA/ICAO	UN3077	Environmentally Hazardous Substances solid, n.o.s. (HOCL Blend)	9	III	Marine Pollutant

14.6 Special Precautions for User: Not applicable

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

15. Regulatory Information

15.1 Safety, Health and Environment Regulations/Legislation Specific for the Substance or Mixture:

INTERNATIONAL INVENTORIES

EU Chemical Inventory (EINECS): All components are listed.

15.2 Chemical Safety Assessment: Does not meet requirements.

16. Other Information

GHS Phrases for Reference (See Section 2 and 3):

Aqua. Acute Tox. 1 – Hazardous to the Aquatic Environment: Acute Hazard Category 1
Aqua. Chronic Tox. 1 - Hazardous to the Aquatic Environment: Chronic Hazard Category 1
Eye Irrit. 2 – Eye Irritation Category 2
Inhal. Tox. 2 – Acute Toxicity (Inhalation) Category 2
Oral Tox. 4 – Acute Toxicity (Oral) Category 2
Ox. Sol. 2 – Oxidizing Solid Category 2
Skin Cor. 1A - Skin Corrosive Category 1A
STOT SE 3 – Specific Target Organ Toxicity Single Exposure Category 3

H272 May intensify fire: oxidizer.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

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H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

DATE OF CURRENT REVISION: 31 August 2016

REVISION SUMMARY: New EU GHS SDS.

DATE OF PREVIOUS REVISION: N/A

General Disclaimer:

The information presented in this Data sheet is correct to the best of our knowledge, information and belief at the data of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

OSHA GHS SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier: ECA-500 Solution (Ag and Food Processing Sanitizer)

EPA Registration Number: Solution of EPA registered product 91138-1 (ECA-500 in water)

Recommended use: Sanitizer

Restrictions on use: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Manufacturer: ECA Water Systems, LLC
115 Dansworth Lane
Oak Ridge, TN 37830

Telephone number: 1 865-207-6545

Emergency phone number: 1 865-207-6545 (9 AM – 5 PM, M-F)

2. HAZARD(S) IDENTIFICATION

Classification:

Physical	Health
Not Hazardous	Not Hazardous

OSHA/GHS Labeling: None.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No	Concentration
Water	7732-18-5	>99%
Hypochlorous acid (hydrolyzed from Sodium Dichloroisocyanurate Dihydrate)	7790-92-3	<1.0%

4. FIRST-AID MEASURES

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, seek medical attention.

Skin Contact: Wash thoroughly with water. Seek medical attention if irritation develops.

Eye Contact: Rinse cautiously with water. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if irritation develops.

Ingestion: If large amounts are ingested, seek medical attention.

Most Important symptoms and effects, both acute and delayed: May cause mild eye and skin irritation.

Indication of any immediate medical attention and special treatment needed: Immediate medical attention should not be required.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use media suitable to for surrounding materials.

Specific hazards arising from the chemical: None expected.

Special protective equipment and precautions for fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Keep unnecessary personnel away. Wear appropriate protective clothing and equipment (see section 8). Avoid contact with eyes.

Environmental precautions: Avoid entry in storm sewers and waterways. Report spill as required by local and national regulations.

Methods and materials for containment and cleaning up: Collect spilled liquid with and absorbent material and place in a suitable container for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid eye contact. Avoid prolonged skin contact. Avoid breathing mist or spray. Wash exposed skin with soap and water after use.

This product is a hydrolyzed solution of EPA registered product ECA-500 (Registration number 91138-1) Refer to ECA-500 EPA approved label and SDS for additional information for product use.

Conditions for safe storage, including any incompatibilities: Store and handle in accordance with all current regulations and standards. Read and follow product label instructions. Stable for up to 30 days after making. Discard after 30 days and make fresh solution.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Water	None Established
Hypochlorous acid	None Established

Appropriate Engineering Controls: Use in well-ventilated areas. Provide mechanical ventilation where excessive exposure concentrations may be generated.

Respiratory Protection: None required for normal use. If exposures are excessive, wear an approved respirator (mask). Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with all applicable regulations; and good Industrial Hygiene practice.

Hand Protection: None required for normal use. Wear appropriate chemical resistant gloves for prolonged skin contact.

Skin Protection: None required for normal use.

Eye Protection: Follow facility requirements.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear liquid
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Odor:	Very slight chlorine
Odor Threshold:	Not determined
pH:	5-7
Melting/Freezing Point:	~0°C (~32°F)
Boiling Point:	~100°C (~212°F)
Flash Point:	Not applicable
Evaporation Rate: (n-butylacetate =1)	Not determined
% Volatile by Volume:	>99
Lower Flammability Limit: Upper Flammability Limit:	Not applicable
Vapor Pressure:	Not determined
Vapor Density(Air=1):	Not determined
Solubility:	Soluble in water
Autoignition Temperature:	Not determined
Decomposition Temperature:	Not determined
Viscosity:	Water like
Explosive Properties:	None
Oxidizing Properties:	Not determined
Specific Gravity (H₂O= 1):	1.00-1.08
Concentration	0-10000 ppm

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal temperatures and pressures.

Chemical Stability: Stable at normal temperatures and pressures.

Possibility of Hazardous Reactions: None expected.

Conditions to Avoid: None expected.

Incompatible Materials: Acids, reducing agents, ammonia, and urea.

Hazardous Decomposition Products: Chlorine and carbon dioxide

11. TOXICOLOGICAL INFORMATION

Acute effects of exposure:

Inhalation: May cause mild irritation.

Ingestion: May cause gastrointestinal upset.

Skin contact: Repeated and prolonged skin contact may cause mild irritation. Not a skin sensitizer.

Eye contact: May cause mild irritation.

Chronic effects: None known

Carcinogenicity: None of the components are listed as a carcinogen or potential carcinogen by IARC, NTP or OSHA

Germ cell mutagenicity: Not mutagenic.

Reproductive Toxicity: No adverse effects on reproduction are known.

Numerical measures of toxicity:

Hypochlorous acid: Not acutely toxic

12. ECOLOGICAL INFORMATION

Ecotoxicity: Intended for use as a sanitizer.

Persistence and degradability: This material is biodegradable.

Bioaccumulative potential: This material is not bioaccumulative.

Mobility in soil: No data available.

Other adverse effects: This product is a hydrolyzed solution of EPA registered product ECA-500 (Registration number 91138-1) Refer to ECA-500 EPA approved label and SDS for additional information.

13. DISPOSAL CONSIDERATIONS

Pesticide Disposal: 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 Hazardous Waste representative at the nearest EPA Regional Office for guidance. **This product is a hydrolyzed solution of EPA registered product ECA-500 (Registration number 91138-1) Refer to ECA-500 EPA approved label and SDS for additional information.**

14. TRANSPORT INFORMATION

This product is not regulated for transport.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable.

Transported in packaged form only.

Special precautions: None known

15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

FIFRA Labeling: This product is a hydrolyzed solution of EPA registered product ECA-500 (Registration number 91138-1) Refer to ECA-500 EPA approved label and SDS for additional information.

Safety, health, and environmental regulations specific for the product in question.

CERCLA: Not regulated.

SARA Hazard Category (311/312): Classified as per Section 2 of this SDS

SARA 313: Not regulated

EPA TSCA Inventory: This product is a pesticide and not subject to TSCA. Not subject to export notification.

CANADA:

Canadian CEPA: All components of this product are listed on either the DSL or the NDSL.

16. OTHER INFORMATION

SDS Revision History: New SDS

Date of preparation: May 12, 2020

Date of previous revision: New SDS him

NOTICE

This above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. ECA Water Systems, LLC shall not be held liable for any damage resulting from handling or from contact with the above product. This information relates only to the product designated herein and does not relate to its use in combination with any other material or process.