AG SANITIZER 12.5%

ACTIVE INGREDIENT – Sodium Hypochlorite	12.5%
INERT INGREDIENTS	87.5%
TOTAL	100.0%

KEEP OUT OF REACH OF CHILDREN

DANGER

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. • Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 – 20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER	
Have the product container or label with you when you call a poison control center or doctor, or when going for treatment.	
NOTE TO PHYSICIAN	
Probable mucosal damage may contraindicate the use of gastric lavage.	

See other precautions on this label.

Pioneer Americas, Inc.
Houston, Texas 77002

EPA REG. NO 61667-4
EPA EST NO. 61667-CA-1, CA-2, LA-1, NV-1, WA-2, 72423-CA-1, 56088-NV-1, 962-CA-1, 11138-CA-1, 70271-CA-1, 10897-CA-1, CA-2, 550-WA-2, 71207-CAN-1, CAN-2, CAN-3

NET CONTENTS - XXX GALLONS

MASTER LABEL

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive, may cause severe skin and eye irritation or chemical burns to broken skin. Causes eye damage. May be fatal if swallowed. Avoid breathing vapors. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling this product. Wash after handling. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public 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 discharges. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL AND CHEMICAL HAZARDS

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

DIRECTIONS FOR USE

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

Note - This product degrades with age. Use a chlorine test kit and increase dosage, as necessary, to obtain the required level of available chlorine.

For additional uses for this product see the collateral labeling. For a copy of the complete usage instructions, contact Pioneer or your Pioneer distributor or dealer.

FRUIT AND VEGETABLE WASHING

All fruits and vegetables should be cleaned by thoroughly washing in an appropriate cleaning solution. Remove all soils and other residues prior to treating with this product. After washing, transfer the fruit and vegetables to a separate tank containing the sanitizing solution.

Apply this product at the recommended concentration of available chlorine. See the following table for recommended usage concentrations for the fruit or vegetable being processed. To prepare a 100 ppm available chlorine solution, add 0.75 gallon of this product to 1,000 gallons of water. The use of a calcium carbonate buffer to control pH is recommended. Maintain the pH of the use solution between 6.0 and 8.0 with a dilute solution of hydrochloric acid. Rinse fruit and vegetables with potable water after treatment.

For citrus quarantine, use at 200 ppm at pH 6.0 to 7.5. Apply for two minutes using a suitable spray or dip tank treatment.

CHLORINE DOSAGE IN FRUIT AND VEGETABLE TREATMENT

Available Chlorine Required in Treatment Water

COMMODITY	TREATMENT METHOD	AVAILABLE CHLORINE TO APPLY (ppm)	COMMENTS
Apples	Dump Tank Flume Spray	100 – 500 30 – 50 100 – 200	Submerge the apples for a minimum of 45 seconds. Do not exceed 90 seconds contact time in dump tank or flume. Spray until thoroughly wet.
Artichokes	Spray	100 –150	Spray until thoroughly wet.
Asparagus	Spray Hydrocooler	100 – 150 125 – 150	Spray until thoroughly wet. Hydrocool for 20 - 30 minutes.
Brussels Sprouts	Spray	100 – 150	Spray until thoroughly wet.
Cabbage (Chopped)	Spray	80 – 100	Spray until thoroughly wet. After treatment, the adhering moisture must be removed by centrifuging.
Carrots	Dump Tank Flume Spray	100 – 200 100 – 200 50 – 100	Remove the carrots from dump tank or flume after 1 - 5 minutes contact time. Spray until thoroughly wet.
Cauliflower	Spray	300 – 400	Spray until thoroughly wet.
Celery	Spray	100 – 110	Spray until thoroughly wet.
Cherries	Spray	75 – 100	Spray until thoroughly wet.

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Cucumbers	Spray	300-350	Spray until thoroughly wet.
Garlic	Spray Tank	75 – 100 75 – 150	Spray until thoroughly wet. Remove from tank after 2 - 5 minutes contact.
Grapefruits	Spray Drench	100 – 150 40 – 75	Spray until thoroughly wet. Drench for 3 - 5 minutes. For citrus quarantine treatment, use 200 ppm of available chlorine at pH 6.0 - 7. 5 in drench tank.
Lemons	Spray Drench Dump Tank	100 – 150 40 – 75 30 – 50	Spray until thoroughly wet. Drench for 3 - 5 minutes Remove from tank after 2 - 3 minutes contact time.
Melons (all varieties)	Hydrocooler Spray	100 – 150 100 – 150	Hydrocool for 20 - 30 minutes. Spray until thoroughly wet.
Mushrooms	Spray	100 – 120	After treatment with the chlorinated water, mushrooms must be treated with 0.2% sodium bisulfite (anti-oxidant) to prevent browning.
Onion (dry)	Spray Tank	75 – 120 75 – 120	Spray until thoroughly wet. Remove from tank after 2 - 3 minutes contact time.
Onions (green)	Spray	75 – 120	Spray until thoroughly wet.
Oranges	Drench Spray	20 – 30 20 – 30	Drench for 3 - 5 minutes. Spray until thoroughly wet.
Nectarines	Hydrocooler Spray	30 – 75 50 – 100	Hydrocool for 20 - 30 minutes. Spray until thoroughly wet.
Peaches	Hydrocooler Spray	30 – 75 50 – 100	Hydrocool for 20 - 30 minutes. Spray until thoroughly wet.
Pears	Dump Tank	200 – 300	Remove from tank after 2 - 3 minutes contact time.

Peppers	Spray	300 – 400	Spray until thoroughly wet.
Plums	Hydrocooler Spray	30 – 75 50 – 100	Hydrocool for 20 - 30 minutes. Spray until thoroughly wet.
Potatoes	Dump Tank Flume Spray	65 – 125	Remove from tank and flume after 2 - 5 minutes contact time. Spray until thoroughly wet.
Potatoes (white)	Spray	65 – 125	This concentration of chlorine should be used only if bleaching of potatoes is desirable. Spray until thoroughly wet on cleaned potatoes.
Radishes	Spray Tank	100 – 150 10 – 25	Remove from tank after 1 - 1 1/5 minutes contact time. Spray until thoroughly wet.
Spinach	Spray	75 – 150	Spray until thoroughly wet.
Stone Fruit	Hydrocooler	30 – 75	Hydrocool for 20 - 30 minutes.
Tomatoes	Tank Spray	300 – 350 100 – 150	Remove after 2 - 3 minutes of contact time in the tank. Spray until thoroughly wet.
Yams	Tank	100 – 200	Remove after 2 - 3 minutes of contact time the tank.

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SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES

RINSE METHOD - A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 oz. of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 2 oz. of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight.

Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to re-establish a 200 ppm residual. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Sanitizers used in automated systems may be used for general cleaning but may not be re-used for sanitizing purposes.

IMMERSION METHOD - A solution of 100 ppm available chlorine may be used as the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 oz. of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 2 oz. of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight.

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

Sanitizers used in automated systems may be used for general cleaning but may not be re-used for sanitizing purposes.

FLOW/PRESSURE METHOD - Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 2 oz. product with 10 gallons of water. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and

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hold under pressure for at least 2 minutes to insure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine.

CLEAN-IN-PLACE METHOD -Thoroughly clean equipment after use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 2 oz. of product with 10 gallons of water. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 10 minutes to insure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine.

SPRAY/FOG METHOD - Pre-clean all surfaces after use. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Prepare a 200 ppm sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 2 oz. product with 10 gallons of water. Prepare a 600 ppm solution by thoroughly mixing the product in a ratio of 6 oz. product with 10 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces previously treated with a 600 ppm solution with a 200 ppm solution.

SANITIZATION OF POROUS FOOD CONTACT SURFACES

RINSE METHOD - Prepare a sanitizing solution by thoroughly mixing 6 oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSION METHOD - Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 6 oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least two minutes and allow the sanitizer to drain. Rinse equipment with water after treatment.

SPRAY/FOG METHOD - Pre-clean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in the ratio of 6 oz. product with 10 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces

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with a 200 ppm available chlorine solution. Prepare a 200 ppm sanitizing solution by thoroughly mixing 2 oz. of this product with 10 gallons of water.

SANITIZATION OF NONPOROUS NON-FOOD CONTACT SURFACES

RINSE METHOD - Prepare a sanitizing solution by thoroughly mixing 2 oz. of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

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

SPRAY/FOG METHOD - Pre-clean all surfaces after use. Prepare a 200 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 2 oz. product with 10 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

DISINFECTION OF NONPORPOUS NON-FOOD CONTACT SURFACES

RINSE METHOD - Prepare a disinfecting solution by thoroughly mixing 6 oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the disinfecting solution, maintaining contact with the solution for at least 10 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSION METHOD - Prepare a disinfecting solution by thoroughly mixing, in an immersion tank, 6 oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the disinfecting solution for at least 10 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

SANITIZATION OF POROUS NON-FOOD CONTACT SURFACES

RINSE METHOD - Prepare a sanitizing solution by thoroughly mixing 6 oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly

with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSION METHOD - Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 6 oz. of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

SPRAY/FOG METHOD - After cleaning, sanitize non-food contact surfaces with 600 ppm available chlorine by thoroughly mixing the product in a ratio of 6 oz. of this product with 10 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

FARM PREMISES

Remove all animals, poultry, and feed from premises, vehicles, and enclosures. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes, and other facilities occupied or traversed by animals or poultry. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean all surfaces with soap or detergent and rinse with water. To disinfect, saturate all surfaces with a solution of at least 1000 ppm available chlorine for a period of 10 minutes. A 1000 ppm solution can be made by thoroughly mixing 11 oz. of this product with 10 gallons of water. Immerse all halters, ropes and other types of equipment used in handling and restraining animals or poultry, as well as the cleaned forks, shovels, and scrapers used for removing litter and manure. Ventilate building, cars, boats, and other closed spaces. Do not house livestock or poultry or employ equipment until chlorine has been dissipated. All treated feed racks, mangers, troughs, automatic feeders, fountains and waterers must be rinsed with potable water before reuse.

DRIP IRRIGATION

This product when used properly will control bacterial and algae growth in the lines and emitters of a drip irrigation system, and thereby help provide a uniform distribution of water.

CALIBRATION - If the irrigation water has high levels of nutrients causing bacterial, algae, or other bio-fouling that reduces system performance, continuous chlorination may be necessary. The recommended level of free residual chlorine for continuous feed is 1 to 2 ppm, measured at the end of the farthest lateral using a good quality test kit for available chlorine. The available chlorine level should be checked periodically.

Periodic shock treatments at a higher available chlorine rate of up to 20 ppm free residual may be appropriate where bacteria and/or algae clogging and build-up are not managed by maintaining a continuous residual. The frequency of the chlorine shock application depends upon the frequency and extent of bio-clogging.

The rate of sanitizer injection into the irrigation water flow required to supply the desired available chlorine dosage in ppm can be estimated using the following equation:

$$I = (0.006) \times (\text{ppm desired}) \times (\text{system flow rate in gpm}) / (\text{bleach strength})$$

where I is the injection rate in gallons per hour.

For example:

To obtain 5 ppm available chlorine at a water flow rate of 30 gallons per minute while injecting 12.5% sodium hypochlorite solution, you should inject:

$I = (0.006) \times (5) \times (30) / 12.5 = 0.072$ gallons per hour of 12.5% sodium hypochlorite solution.

NOTE: This calculation, when applied to clean water which is free of amine nitrogen and organic nutrients, will give a result close to the actual product injection rate required. In actual practice, however, contaminants in the water may consume sanitizer such that the available chlorine concentration is less than expected from the calculation. To correctly establish the product dose setting required, it is necessary to measure the available chlorine at the end of the treated increment in the field and adjust the sanitizer dose setting until the desired available chlorine concentration is obtained. Only experience can establish the actual injector settings required to provide the desired level of available chlorine at the end of the farthest lateral.

Injection should be started during irrigation, near the end of the irrigation sequence, but early enough to establish the desired available chlorine concentration throughout the system being treated. Apply the sanitizer upstream of the filter to help keep the filter clean. Determine the level of available chlorine as described in the "Calibration" section, above, using a chlorine test kit. Allow sufficient time to achieve a steady reading.

DO NOT apply sanitizer when fertilizers, herbicides, and insecticides are being injected since they will consume the available chlorine and may produce toxic reaction products.

SENSITIVE PLANT SPECIES PRECAUTIONS - Certain plants, including various species of trees, flowers, shrubs, agronomic crops, fruits and vegetables are adversely affected by chlorinated irrigation. The use of this product can impact the growth, appearance and health of the plants.

Begonias, geraniums and other ornamental plant species are known to be sensitive to continuous chlorination at levels of 1-2 ppm free chlorine. Plant species such as tomato,

lettuce, broccoli, and petunia are sensitive to periodic chlorination levels of 10-20 ppm free chlorine.

If uncertain of a plant's tolerance, consult an agronomist or a support agency such as a University Extension Service or your local agent of the U.S. Department of Agriculture.

OTHER AGRICULTURAL USES

BEE CELLS AND BEE BOARDS - Disinfect leaf-cutting bee cells and bee boards by immersion in a solution containing 1 ppm available chlorine for 3 minutes. Allow cells to drain for 2 minutes and dry for 4 to 5 hours or until no chlorine odor can be detected. This solution is made by thoroughly mixing 1 Tsp. of this product to 100 gallons of water. The bee domicile is disinfected by spraying with a 0.1 ppm solution until all surfaces are thoroughly wet. Allow the domicile to dry until all chlorine odor has dissipated.

FOOD EGG SANITIZATION - Thoroughly clean all eggs. Thoroughly mix 2 oz. of this product with 10 gallons of warm water to produce a 200 ppm available chlorine solution. The sanitizer temperature should not exceed 130 F. Spray the warm sanitizer so that the eggs are thoroughly wetted. Allow the eggs to thoroughly dry before casing or breaking. Do not apply a potable water rinse. The solution should not be re-used to sanitize eggs.

AQUACULTURAL USES

FISHPONDS - Remove fish from ponds prior to treatment. Thoroughly mix 103 oz. of this product to 10,000 gallons of water to obtain 10 ppm available chlorine. Add more product to the water if the available chlorine level is below 1 ppm after 5 minutes. Return fish to pond after the available chlorine level reaches zero.

FISH POND EQUIPMENT - Thoroughly clean all equipment prior to treatment. Thoroughly mix 2 oz. of this product to 10 gallons of water to obtain 200 ppm available chlorine. Porous equipment should soak for one hour.

MAINE LOBSTER PONDS – Remove lobsters, seaweed etc. from ponds prior to treatment. Drain the pond. Thoroughly mix 6,200 oz. of this product to 10,000 gallons of water to obtain at least 600 ppm available chlorine. Apply so that all barrows, gates, rock and dam are treated with product. Permit high tide to fill the pond and then close gates. Allow water to stand for 2 to 3 days until the available chlorine level reaches zero. Open gates and allow two tidal cycles to flush the pond before returning lobsters to pond.

CONDITIONING LIVE OYSTERS - Thoroughly mix 5 oz. of this product to 10,000 gallons of water at 50° to 70° F to obtain 0.5 ppm available chlorine. Expose oysters to this solution for at least 15 minutes, monitoring the available chlorine level so that it

does not fall below 0.05 ppm. Repeat entire process if the available chlorine level drops below 0.05 ppm or the temperature falls below 50° F.

CONTROL OF SCAVENGERS IN FISH HATCHERY PONDS - Prepare a solution containing 200 ppm of available chlorine by mixing 2 oz. of product with 10 gallons of water. Pour into drained pond potholes. Repeat if necessary. Do not put desirable fish back into refilled ponds until chlorine residual has dropped to 0 ppm, as determined by a test kit.

STORAGE AND DISPOSAL

Store this product in a cool dry area, away from direct sunlight and heat to avoid deterioration. In case of spills, flood areas with large quantities of water. If container required a deposit, return it to Pioneer or its distributor for a refund. If container is a "no deposit" container, then triple rinse and discard. Product or rinsate, which can not be used, should be diluted with water and discarded in a sanitary sewer. Do not contaminate food or feed by storage, disposal or cleaning of equipment.