Selectrocide® A12 [A1, A5] Processed Foods

Technical Bulletin 2016

Antimicrobial Food Additive
Reduces Microbial Contamination

Generates Chlorine Dioxide to Control Food-Spoilage and Pathogenic Microorganisms on Processed Fruits and Vegetables and During Poultry Processing

To activate: See "Directions for Use" on package label

Use the following volumes of potable water to achieve the desired concentrations of chlorine dioxide inside a closed container:

For this concentration of chlorine dioxide	Immerse *Selectrocide*® A1 in this amount of clean, potable water for at least thirty (30) minutes	Immerse *Selectrocide*® A5 in this amount of clean, potable water for at least six (6) hours	Immerse *Selectrocide*® A12 in this amount of clean, potable water for at least ten (10) hours
500 ppm	0.2 liters	9.5 liters	24 liters
500 ppm	0.05 gallons	2.5 gallons	6.3 gallons
10 ppm	10 liters	475 liters	1200 liters
10 ppm	2.5 gallons	125 gallons	315 gallons
5 ppm	20 liters	945 liters	2400 liters
5 ppm	5.5 gallons	250 gallons	635 gallons
3 ppm	33 liters	1570 liters	4000 liters
3 ppm	9 gallons	415 gallons	1055 gallons

Do not remove *Selectrocide*®A12 envelope from container of water prior to 2 hours.
[A1, 30 minutes; A5, 10 hours]
Discard the spent A12 [A1, A5] envelope (follow disposal instructions on package label), and mix solution gently prior to use.
Do not reuse A12 [A1, A5] envelope.
Check concentration of solution using *Selective Micro® Chlorine Dioxide Test Strips*.
(See box below for instructions if check indicates concentration lower than desired)
Record activation date and concentration on stick-on label and affix to storage container.
See package label "Directions for Use" for storing unused solution; use solution within 15 days of activation.

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Technical Bulletin: A-Series 2009-02A (revised 2-19)

DURING USE (DILUTING, APPLYING, OR WORKING WITH ACTIVATED PRODUCT):

1. Always work in well-ventilated area and avoid inhaling fumes of activated solution.
2. Wear protective gloves if hands will come in contact with activated solution.
3. Respiratory protection is not required under the limited exposure conditions of most normal use patterns. However, wear a NIOSH/MSHA-approved respirator under the following conditions:
   a. when applying activated solution with a high-pressure sprayer
   b. when working with the activated solution for an extended period of time in a closed facility or in a poorly-ventilated area
   c. when normal workshift duties entail uninterrupted periods of applying the activated solution with mop, sponge, or sprayer
   d. when opening vessel containing stock activated solution (at 500 ppm)
   e. if OSHA inhalation exposure limits are reached or exceeded (see MSDS).
4. Do not use product in a manner inconsistent with the label.

IF TEST STRIPS INDICATE CONCENTRATION (PPM) LOWER THAN DESIRED:

1. Check expiration date on Test Strips container. If expired, then recheck using fresh Test Strip from a container that has not reached its expiration date.
2. If the original container has not expired OR if the recheck indicates a lower-than-desired concentration, THEN DO ONE OF THE FOLLOWING:

   2a. If the application solution was prepared directly to the end-concentration (not diluted from a higher concentration), discard the solution and activate a fresh (unused) *Selectrocide*®A12 [A1, A5]. Recheck concentration after waiting the prescribed time to activation.

   OR

   2b. If the application solution was prepared by diluting a solution of higher concentration, add small amounts of the higher-concentration solution to the application solution–about 10% of the volume of the application solution at a time–until the Selective Micro®Chlorine Dioxide Test Strip indicates the desired concentration. Stir or mix the solution gently after each addition. Use a fresh (unused) Test Strip for each test.

RECOMMENDED SPECIFICATIONS FOR CONTAINERS USED WITH *SELECTIVE MICRO* PRODUCTS

For Use in Generating or Storing Activated Solutions

- The container should be–or be comparable to–a UN-approved, liquid-resealable containment incorporating a gasket-sealing surface and locking mechanism.
- Construction should be of dark or opaque/UV-blocking (preferred) oxidation-resistant plastic or glass. Some materials recommended include:
  - High Density Polyethylene (HDPE)
  - Polypropylene (PP)
  - Polyethylene Terephthalate (PET)(PETE)
  - Polyvinyl Chloride (PVC)
  - Polycarbonate (PC)
  - Glass (UV-blocking preferred)
  - Gasket materials; silicone, viton or EPDM

  Users without containers comparable to the above may contact Selective Micro Technologies for recommendations or to purchase containers for their applications.

Use *Selective Micro® Chlorine Dioxide Test Strips* to verify initial concentrations and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water. Spray or dip processed fruits and vegetables, processed mushrooms, fungi and truffles, red meat, red meat parts and organs, pork and seafood ensuring visible wetness for at least one (1) minute. See Technical Bulletin for dilution directions for 3, 5, and 10 ppm and for other directions and application specifics.

APPLICATIONS FOR FRESH-CUT FRUIT AND VEGETABLES

This product may be used to reduce spoilage and pathogenic microorganisms on cut or processed fruits and vegetables in food processing facilities, such as during flume and washing operations, and in other commercial food preparation areas. Depending on decontamination needs/contamination levels, use at concentrations up to 10 ppm to produce the desired microbial reductions on processed fruits and vegetables.

1. Activate *Selectrocide*®A12 [A1, A5] according to "Directions for Use" on package label.
2. Dilute directly to desired application concentration (up to 10 ppm) in accordance with the instructions in table on page 1 of this technical bulletin

   OR

   Prepare a 500 ppm solution according to table 1 and then use a dilution device appropriate to the end concentration desired:
   - For 10 ppm, use a 1:50 dilution device (one part 500 ppm solution to 49 parts water)
   - For 5 ppm, use a 1:100 dilution device (one part 500 ppm solution to 99 parts water)
   - For 3 ppm, first dilute the 500 ppm solution to 300 ppm by adding 2 parts water to 3 parts 500 ppm solution; then use a 1:100 dilution device (one part 300 ppm solution to 99 parts water)
3. Spray or dip processed fruits and vegetables, ensuring visible wetness for at least one (1) minute, and follow by canning, blanching, or cooking, or consumed as fresh cut fruits or vegetables. Potable water rinse is not required, but may be applied if desired. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
4. Use *Selective Micro® Chlorine Dioxide Test Strips* to verify initial concentrations and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water.
5. Dispose of *Selectrocide*®A package and spent envelope according to instructions on package label.

APPLICATIONS FOR POULTRY PROCESSING

This product may be used to reduce spoilage and pathogenic microorganisms on poultry carcasses. Depending on decontamination needs/contamination levels, use at concentrations up to 10 ppm for one (1) minute to produce the desired microbial reductions on poultry carcasses.

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2. Dilute directly to desired application concentration (up to 10 ppm) in accordance with the instructions in table on page 1 of this technical bulletin

   OR

   Prepare a 500 ppm solution according to table 1 and then use a dilution device appropriate to the end concentration desired:
   - For 10 ppm, use a 1:50 dilution device (one part 500 ppm solution to 49 parts water)
   - For 5 ppm, use a 1:100 dilution device (one part 500 ppm solution to 99 parts water)
   - For 3 ppm, first dilute the 500 ppm solution to 300 ppm by adding 2 parts water to 3 parts 500 ppm solution; then use a 1:100 dilution device (one part 300 ppm solution to 99 parts water)
3. Spray or dip processed poultry, ensuring visible wetness for at least one (1) minute. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
4. Use Selective Micro® Chlorine Dioxide Test Strips to verify initial concentrations and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water.
5. Dispose of the *Selectrocide*®A package and spent envelope according to instructions on package label.

APPLICATIONS FOR FUNGI, MUSHROOMS, AND TRUFFLES

This product may be used to reduce spoilage and pathogenic microorganisms on fungi, mushrooms, and truffles. Depending on the decontamination needs/contamination levels, use at concentrations up to 10 ppm for one (1) minute to produce the desired microbial reductions on processed mushrooms, fungi, and truffles.

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   OR

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   - For 10 ppm, use a 1:50 dilution device (one part 500 ppm solution to 49 parts water)
   - For 5 ppm, use a 1:100 dilution device (one part 500 ppm solution to 99 parts water)
   - For 3 ppm, first dilute the 500 ppm solution to 300 ppm by adding 2 parts water to 3 parts 500 ppm solution; then use a 1:100 dilution device (one part 300 ppm solution to 99 parts water)
3. Spray or dip processed fungi, mushrooms, or truffles, ensuring visible wetness for at least one (1) minute, and follow by canning, blanching, or cooking, or consumed as fresh fungi, mushrooms, or truffles. Potable water rinse is not required, but may be applied if desired. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
4. Use Selective Micro® Chlorine Dioxide Test Strips to verify initial concentrations and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water.
5. Dispose of *Selectrocide*®A package and spent envelope according to instructions on package label.

APPLICATIONS FOR MEAT AND PORK PROCESSING

This product may be used to reduce spoilage and pathogenic microorganisms on red meat (including meat parts and organs), processed, comminuted, or formed meat products, and pork. Depending on the decontamination needs/contamination levels, use at concentrations up to 10 ppm for one (1) minute to produce the desired microbial reductions on red meat (including meat parts and organs), processed, comminuted, or formed meat products, and pork.

1. Activate *Selectrocide*®A12 [A1, A5] according to "Directions for Use" on package label.
2. Dilute directly to desired application concentration (up to 10 ppm) in accordance with the instructions in table on page 1 of this technical bulletin.

   OR

   Prepare a 500 ppm solution according to table 1 and then use a dilution device appropriate to the end concentration desired:
   - For 10 ppm, use a 1:50 dilution device (one part 500 ppm solution to 49 parts water)
   - For 5 ppm, use a 1:100 dilution device (one part 500 ppm solution to 99 parts water)
   - For 3 ppm, first dilute the 500 ppm solution to 300 ppm by adding 2 parts water to 3 parts 500 ppm solution; then use a 1:100 dilution device (one part 300 ppm solution to 99 parts water)
3. Spray or dip processed red meat (including meat parts and organs), processed, comminuted, or formed meat products, or pork ensuring visible wetness for at least one (1) minute, and follow by potable water rinse or by blanching, cooking, or canning. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
4. Use Selective Micro® Chlorine Dioxide Test Strips to verify initial concentrations and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water.
5. Dispose of *Selectrocide*®A package and spent envelope according to instructions on package label.

APPLICATIONS FOR SEAFOOD PRODUCTS

This product may be used to reduce spoilage and pathogenic microorganisms on seafood. Depending on the decontamination needs/contamination levels, use at concentrations up to 10 ppm for one (1) minute to produce the desired microbial reductions on seafood.

1. Activate *Selectrocide*®A12 [A1, A5] according to "Directions for Use" on package label.
2. Dilute directly to desired application concentration (up to 10 ppm) in accordance with the instructions in table on page 1 of this technical bulletin.

   OR

   Prepare a 500 ppm solution according to table 1 and then use a dilution device appropriate to the end concentration desired:
   - For 10 ppm, use a 1:50 dilution device (one part 500 ppm solution to 49 parts water)
   - For 5 ppm, use a 1:100 dilution device (one part 500 ppm solution to 99 parts water)
   - For 3 ppm, first dilute the 500 ppm solution to 300 ppm by adding 2 parts water to 3 parts 500 ppm solution; then use a 1:100 dilution device (one part 300 ppm solution to 99 parts water)
3. Spray or dip seafood or Use product as an agent used in water and ice that are used to rinse, wash, thaw, transport, or store seafood ensuring visible wetness for at least one (1) minute, and follow by potable water rinse or by blanching, cooking, or canning. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
4. Use Selective Micro® Chlorine Dioxide Test Strips to verify initial concentrations and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water.
5. Dispose of *Selectrocide*®A package and spent envelope according to instructions on package label.

APPLICATIONS FOR RAW AGRICULTURAL COMMODITITES

This product may be used to reduce spoilage and pathogenic microorganisms on fruits and vegetables that are raw agricultural commodities. It can be used in packing facilities, or processing facilities where raw agricultral commodities are handled. Depending on decontamination need/contamination levels, use at concentrations up to 10 ppm to produce the desired microbial reduction on fruits and vegetables.

1. Activate Selectrocide® A12 [A1, A5] according to "Directions for Use" on package label.
2. Dilute directly to desired application concentration (up to 10 ppm) in accordance with the instructions in table one page 1 of this techincal bulletin

   OR

   Prepare a 500 ppm solution according to table 1 and then use a dilution device appropriate to the end concentration desired:
   - For 10 ppm, use a 1:50 dilution device (one part 500 ppm solution to 49 parts water)
   - For 5 ppm, use a 1:100 dilution device (one part 500 ppm solution to 99 parts water)
   - For 3 ppm, first dilute the 500 ppm solution to 300 ppm by adding 2 parts water to 3 parts 500 ppm solution; then use a 1:100 dilution device (one part 300 ppm solution to 99 parts water)
3. Spray or dip fruits and vegetables, ensuring visible wetness for at least one (1) minute, and follow by packing. Potable water rinse is not reqruired, but may be applied if desired. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
4. Use Selective Micro® Chlorine Dioxide Test Strips to verify initial concentration and ensure residual chlorine dioxide concentrations of no greater than 3 ppm in the water.
5. Dispose of Selectrocide® A package and spent envelope according to instructions on package label.

APPLICATIONS FOR CHLORINE DIOXIDE FUMIGATION

Consult with SMT protocol engineer to develop fumigation application. ClO2 fumigation can be used on Fruits and vegetables.

Rev: 2-5-19