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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

EPA United States Environmental Protection Agency **Office of Pesticide Programs**

January 17, 2008

Michael T. Novak
Keller and Heckman, LLP
1001 G Street, NW
Suite 500 West
Washington, DC 20001

Subject: Selective Micro Technologies, LLC
Selectrocide 2L500
EPA Registration No. 74986-4
Application Dated: September 21, 2007
Receipt Date: September 21, 2007

Dear Mr. Novak:

The Agency accepted an amendment with conditions for this product on August 13, 2007. This submission is in response to those conditions.

The following amendment, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted with conditions.

Conditions

1. The activated solution's precautionary language has been removed from the label until such time as data has been submitted and accepted by the Agency.

2. Remove the following statement from every page of the Technical Bulletin: Selective Micro Technologies believes the information contained on this Technical Bulletin is accurate. "The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance."

- The Technical bulletin information must be accurate.
- The procedures are based on the label claims. Label changes must correspond with the Technical Bulletin.
- Your label has a disclaimer -"It is a violation of Federal Law to use this product in a manner inconsistent with the labeling." This means that instructions in your technical bulletin must be all-inclusive or be in violation.

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3. On Page 1 of the Technical Bulletin there are instructions "See box below for instructions if check indicates concentration lower than desired." However, the box does not appear until the next page. You must move the statement to the next page or revise the statement.

4. On Pages 4 and 5 of the Technical Bulletin specify "glazed tile floors" under the Hard, Non-Porous, Non-Food Contact Surfaces directions for use section.

5. Move the heading "As a dip to control and suppress bacteria . . ." above the directions for this use site.

General Comments

A stamped copy of the labeling accepted with conditions is enclosed. Submit one copy of your final printed labeling before distributing or selling the product bearing the revised labeling.

If you have any questions about these comments, please feel free to contact Wanda Henson at (703) 308-6435.

Sincerely,

Emily Mitchell

Emily H. Mitchell
Product Manager 32
Regulatory Management Branch II
Antimicrobials Division (7510C)

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Selectrocide®
–2L500–

DISINFECTANT/SANITIZER/TUBERCULOCIDE/VIRUCIDE FUNGICIDE/ALGAECIDE/SLIMICIDE/DEODORIZER

PRODUCES TWO LITERS OF 500 PPM CHLORINE DIOXIDE SOLUTION WHEN ACTIVATED

When used as directed, this chlorine dioxide-generating product is proven effective as: a disinfectant against *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Salmonella enterica*, methicillin-resistant S. *aureus* (MRSA), vancomycin-resistant *Enterococcus faecalis*, *Mycobacterium bovis* (TB), *Trichophyton mentagrophytes* (athlete's foot), *Listeria monocytogenes*, and *Candida albicans*; a virucide against *Corona virus*, *Feline Calicivirus*, *Hepatitis A*, *Human Immunodeficiency Virus Type 1 (HIV-1)*, *Poliovirus*-1, *Rotavirus*, *Influenza-A virus*, *Rhinovirus type 37*, *Canine Parvovirus*, *Adenovirus type 5*, *Herpes Simplex-2*, *Vaccinia*, and *Norovirus* (*feline calici* used as testing surrogate); a sanitizer against *E. coli* (and *E. coli O157:H7*), *S. aureus*, *Salmonella typhimurium* (MDRS), *Klebsiella pneumonia*, and *Listeria monocytogenes*; a fungicide against *Penicillium digitatum*, *Botrytis Sp*, and *Fusarium solani*; and an algaecide (*Phormidium boneri*). See Technical Bulletin for ATCC designation numbers.

ACCEPTED
with COMMENTS
EPA Letter Dated:
JAN 17 2008

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 74986-4

KEEP OUT OF REACH OF CHILDREN

DANGER

(See back panel for other cautions)

Active Ingredient:
Sodium Chlorite:.....30.5%
Other Ingredients:..... 69.5%
Total:.....100.0%

Amount of Chlorine Dioxide generated = 0.05%

FIRST AID
If in Eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If Swallowed: Call poison control center or doctor immediately for treatment 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.
If Inhaled: Remove victim to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for treatment advice. Get medical attention.

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

EPA Registration No. 74986-4 EPA Establishment No. 071441-OH-004

Manufactured for:

Selective Micro Technologies 5 Cherry Hill Dr., Danvers, MA 01923
www.selectivemicro.com

Net Weight of contents.....0.44 ounces (12.34 grams)

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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS

DANGER: DRY INGREDIENTS: CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE AND CAUSES SKIN BURNS. HARMFUL IF SWALLOWED. WEAR PROTECTIVE EYEWEAR (GOGGLES, FACE SHIELD OR SAFETY GLASSES) WHEN HANDLING DRY INGREDIENTS. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING AND BEFORE EATING, DRINKING OR USING TOBACCO. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE.

ACTIVATED SOLUTION: HARMFUL IF SWALLOWED. DO NOT GET IN THE EYES OR ON CLOTHING. AVOID CONTACT WITH SKIN. AVOID BREATHING VAPOR FROM CONTAINER SPOUT. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.

PHYSICAL OR CHEMICAL HAZARDS

DRY SODIUM CHLORITE IS INCOMPATIBLE WITH ACIDS, REDUCING AGENTS, COMBUSTIBLE MATERIALS, SULFUR-CONTAINING RUBBER, SOLVENTS AND PAINTS. KEEP ACTIVATED SOLUTION FROM LIGHT AND HEAT. CHLORINE DIOXIDE GAS MAY CONCENTRATE IN OPEN SPACE OF POUCH. ALWAYS OPEN ACTIVATED POUCH, AND DILUTE ACTIVATED SOLUTION, IN WELL-VENTILATED AREA.

NOTE: For use in the institutional or commercial applications discussed below and in the accompanying Technical Bulletin. Not for use in households or where young children may be present. Cap is not child-resistant.

DIRECTIONS FOR USE: IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH THE LABELING.

1. Fill the pouch with tap water (2 liters) to generate the chlorine dioxide solution.
2. **WAIT AT LEAST 6 HOURS BEFORE USE TO ENSURE SOLUTION REACHES FULL STRENGTH.**
3. Shake gently before use. Direct spout away from face when opening, work in well-ventilated area, and avoid inhaling fumes. Wear protective gloves if hands will come in contact with activated solution during dilution or application.
4. See Technical Bulletin for recommendations regarding dilutions and contact times for specific applications. Before use, verify concentration using *Selective Micro® Chlorine Dioxide Test Strips* to ensure appropriate concentration (see Technical Bulletin for directions if *Test Strips* indicate lower-than-desired concentration).
5. Activate prior to expiration date stamped on pouch. If solution in pouch will not be used up within 48 hours of activation, transfer unused solution to a dark, oxidation-resistant closed or sealed container; store dilutions of solution in a sealed container of the same type (see Tech Bulletin for container details). Store original or diluted solutions in cool place out of direct sunlight (do not store in refrigerator dedicated to food storage). Record activation date and concentration on stick-on label shipped with pouches, and affix to pouch or storage container. Use solution and/or subsequent dilutions within 15 days of activating pouch.

STORAGE AND DISPOSAL

DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE AND DISPOSAL. STORE IN COOL, DRY, VENTILATED AREA. STORE BELOW 50° C (122° F). KEEP PRODUCT OUT OF DIRECT SUNLIGHT. STORE SEPARATELY FROM WATER AND ACIDS. IF PACKAGE RUPTURES AND CONTENTS SPILL, DO NOT PERMIT CONTACT OF CONTENTS WITH ORGANIC MATERIALS (FOR EXAMPLE: CLOTHING OR COMBUSTIBLE MATERIALS) OR ACIDS. PESTICIDE WASTES ARE TOXIC. IMPROPER DISPOSAL OF EXCESS DRY PESTICIDE IS A VIOLATION OF FEDERAL LAW. IF THIS PRODUCT CANNOT BE USED 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. COMPLETELY EMPTY ACTIVATED SOLUTION IN POUCH INTO APPLICATION EQUIPMENT. THEN DISPOSE OF EMPTY POUCH IN A SANITARY LANDFILL OR BY INCINERATION, OR, IF ALLOWED BY STATE AND LOCAL AUTHORITIES, BY BURNING. IF BURNED, STAY OUT OF SMOKE.

WARRANTY STATEMENT: The Company warrants the product to be free from defects in material and workmanship. THE COMPANY MAKES NO WARRANTY THAT THE GOODS SHALL BE MERCHANTABLE. THE COMPANY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, EXCEPT SUCH AS IS EXPRESSLY SET FORTH HEREIN. The Company shall not be liable for any incidental or consequential damages for any breach of warranty. The Company's liability for any breach of warranty shall be limited to the purchase price of the product.

When used as directed, on hard, non-porous surfaces (e.g., stainless steel, brass, glass, vinyl, PVC, polypropylene), this product is an effective sanitizer, disinfectant, tuberculocide, virucide, fungicide, algaecide, general-purpose antimicrobial and cleaner for use in a wide range of applications, including but not limited to: hospitals; medical & veterinary facilities; pharmaceutical production facilities, including equipment (e.g., ultracentrifuges); wineries, breweries, and beverage / bottling plants; laboratories and other clinical settings; potable and non-potable water systems and attendant equipment & tubing; restaurants and food processing plants; and greenhouses/horticultural settings. Heavily soiled surfaces must be pre-cleaned prior to treatment. Apply by mop, sponge, or sprayer, ensuring visible wetness for times specified for these applications, or apply through immersion or clean-in-place application. Wear a NIOSH/MHSA-approved respirator appropriate for chlorine dioxide when using a high-pressurized sprayer and under other circumstances detailed in the Technical Bulletin.

General Dilution Instructions: All dilutions begin with a stock solution at a nominal concentration of 500 ppm, except when the product is activated directly to the application concentration (see technical bulletin). Except where otherwise directed, or for other use concentrations (see technical bulletin), use the following dilution instructions to achieve the use concentration indicated:

To Achieve Use Concentration of:	Use Dilution Device or Sprayer With a Dilution Ratio of:	
100 ppm	1:5	(one part 500 ppm solution to 4 parts water)
50 ppm	1:10	(one part 500 ppm solution to 9 parts water
20 ppm	1:25	(one part 500 ppm solution to 24 parts water)
5 ppm	1:100	(one part 500 ppm solution to 99 parts water)
0.25 ppm	1:2,000	(one part 500 ppm solution to 1,999 parts water)

SANITIZER FOR HARD, NON-POROUS, FOOD-CONTACT SURFACES. Effective food contact surface sanitizer at 5 ppm against *E. coli* and *E coli O157:H7, Salmonella typhimurium (MDRS),* and *Staphylococcus aureus* with an exposure time of 1 minute. Product may be used on previously cleaned food preparation surfaces; fountain drink and beverage dispensers; glassware, plates and eating utensils; food processing equipment, including beer processing equipment and lines, and food conveyor belts. Dilute to 5 ppm as table above specifies. See Technical Bulletin for alternative dilution instructions and application specifics.

SANITIZER FOR HARD, NON-POROUS, NON-FOOD-CONTACT SURFACES. Effective non-food contact surface sanitizer at 20 ppm against *Staphylococcus aureus, Klebsiella pneumonia* and *Listeria monocytogenes* with an exposure time of 5 minutes. Product may be used on non-food contact surfaces, including floors, walls, furnishings, and equipment. Dilute to 20 ppm as table above specifies. See Technical Bulletin for alternative dilution instructions and application specifics.

DISINFECTANT OR VIRUCIDE FOR HARD, NON-POROUS SURFACES: Product may be used at 100 ppm with an exposure time of 10 minutes to disinfect hard surfaces in medical or veterinary clinics that may be contaminated with *Staphylococcus aureus, Salmonella enterica, Pseudomonas aeruginosa,* methicillin-resistant *S. aureus (MRSA),* vancomycin-resistant *Enterococcus faecalis, Mycobacterium bovis* (TB) and *Trichophyton mentagrophytes* (athlete's foot), *Listeria monocytogenes, Candida albicans, Corona virus, Feline Calicivirus, Hepatitis A, Human Immunodeficiency Virus Type 1 (HIV-1), Poliovirus-1, Rotavirus, Influenza-A virus, Rhinovirus type 37, Canine Parvovirus, Adenovirus type 5, Herpes Simplex-2, Vaccinia,* and *Norovirus.* This product may be used as a disinfectant or virucide on general environmental surfaces. Dilute to 100 ppm as table above specifies. See Technical Bulletin for alternative dilution instructions and application specifics.

SPECIAL INSTRUCTIONS FOR CLEANING AND DECONTAMINATING SURFACES AND OBJECTS PREVIOUSLY SOILED WITH BLOOD BODY FLUIDS POTENTIALLY CONTAINING HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1).

- Wear protective barriers such as disposable latex gloves, gowns, masks, and eye coverings when handling items soiled with blood or body fluids.

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- Blood and other body fluids must be thoroughly cleaned from surfaces and objects before application of 2L500 solution.
- Blood, other body fluids, and contaminated cleaning materials should be autoclaved and disposed of according to local regulations for infectious waste disposal.

DISINFECTANT FOR CLEAN-IN-PLACE APPLICATIONS FOR POTABLE WATER SYSTEMS: Product may be used to disinfect lines (contaminated with *Staphylococcus aureus, Salmonella enterica, Pseudomonas aeruginosa,* methicillin-resistant *S. aureus*, vancomycin-resistant *Enterococcus faecalis*, and *Candida albicans)* used in fountain drink or other beverage preparation, storage, transfer and dispensing. Dilute as table above specifies to either 100 ppm solution for a 10-minute exposure time or to 50 ppm solution for a 20-minute exposure time. See Technical Bulletin for alternative dilution instructions and application specifics.

ANTIMICROBIAL AND GENERAL CLEANING APPLICATIONS FOR POTABLE WATER SYSTEMS: This product will reduce microbial populations in the potable water holding tanks and lines of recreational vehicles (RV) and boats, in marine and RV wastewater tanks and lines; and fountain drink or other beverage preparation, storage, transfer and dispensing lines and equipment. In addition, it will clean, eliminate odors, and remove organic matter. These uses must be followed by a potable water rinse. For 50 ppm, use one activated pouch (2 liters) for every 50 gallons of capacity, rounding to the next higher number of pouches (for example, use two pouches to treat a 100-gallon tank; for two 80-gallon tanks–total capacity of 160 gallons–use four pouches). See Technical Bulletin for preparation directions and other dilution and application specifics.

ANTIMICROBIAL APPLICATIONS FOR NON-POTABLE WATER SYSTEMS IN HORTICULTURAL SETTINGS: This product may be used to reduce microbial populations in non-potable water used with cut flowers to minimize microbial transfer from water to flower, thereby maintaining freshness and extending shelf-life of cut flowers. Dilute to 5 ppm as table above specifies. See Technical Bulletin for detailed directions and dilution and application specifics.

GENERAL DISINFECTANT, SANITIZER, ALGAECIDE AND FUNGICIDE FOR HORTICULTURAL AND GREENHOUSE APPLICATIONS: For horticultural applications, this product may be used to disinfect (100 ppm/10 minutes or 50 ppm/20 minutes) and sanitize (20 ppm/5 minutes) hard, non-porous surfaces; to treat, control, and prevent fungi (5 ppm/1 hour) (*Penicillium digitatum, Botrytis Sp, Fusarium solani & oxysporum f. sp. Basilicum (Fob), and Pythium irregulare & aphanidermatum*), bacteria (*Erwinia chrysanthemi*), algae (*Phormidium boneri)*, and attendant slimes, rusts, leaf spot and mildews; and to remove slimes (50 ppm/12 hours-overnight) & inhibit reemergence (0.25 ppm/continuous treatment) in irrigation and other non-potable water systems. Concentrations and contact times are application-specific; dilute to use concentrations as table above specifies. See Technical Bulletin for detailed directions and other dilution and application specifics.

FRUIT AND VEGETABLE WASH TO EXTEND FRESHNESS AND SHELF-LIFE. This product may be used at 5 ppm for 1 minute to reduce spoilage microorganisms on raw agricultural commodities (RACs) in food processing facilities. Spray or dip RACs, and follow with a potable water rinse or by canning, blanching, or cooking. Dilute to 5 ppm as table above specifies. See Technical Bulletin for detailed directions and other dilution and application specifics.

ANTIMICROBIAL APPLICATIONS TO CONTROL THE BUILDUP OF MICROBES IN PROCESS WATERS FOR FRUIT AND VEGETABLE RINSE AND ASSOCIATED TANKS, FLUMES, AND LINES. This product will inhibit the build-up of microbes in water used in the processing of fruits and vegetables. Target residual concentrations of chlorine dioxide between 0.25 ppm and 5.0 ppm are recommended to control microbial buildup. Dilute to 0.25 ppm or 5 ppm as table above specifies, or follow directions in Technical Bulletin. Inject chlorine dioxide continuously or intermittently to the system to maintain desired concentration. The frequency and volume of replenishment will vary with the degree of contamination in the fruits and vegetables being processed, target concentration, and process design. See Technical Bulletin for preparation directions and other dilution and application specifics.

ANTIMICROBIAL TREATMENT FOR POULTRY DRINKING WATER. This product may be used at up to 5 ppm to control microorganisms in drinking water intended for poultry. Dilute to 5 ppm as specified above, or use directly in system with automatic, on-demand

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injection system metered to produce end concentration at up to 5 ppm. Application particulars will depend upon metering system, frequency of replenishment, and capacity of drinking container. See Technical Bulletin for activation instructions and other dilution and application specifics.

SANITIZING FINAL RINSE OF PRE-CLEANED OR NEW RETURNABLE OR NON-RETURNABLE CONTAINERS. This product may be used as a final sanitizing rinse for plastic, glass or metal returnable and non-returnable bottles, cans, caps, kegs, and beverage containers. Beginning with a 500 ppm solution, use a device with a 6:100 dilution ratio (six parts solution to 94 parts water) to produce an end application concentration of 30 ppm. Alternatively, activate directly to the end concentration of 30 ppm using directions in the Technical Bulletin. Rinse bottles, cans, or other containers with the use solution, ensuring visible wetness. Allow to drain dry. See Technical Bulletin for preparation directions and other dilution and application specifics.

ANTIMICROBIAL AND GENERAL CLEANING USES FOR NON-POTABLE WATER APPLICATIONS INVOLVING RECIRCULATING WATER SYSTEMS (E.G., COOLING TOWERS, PAPER MILLS, AND DECORATIVE OR ORNAMENTAL FOUNTAINS): This product will help remove, control and inhibit reemergence of slimes, algae, fungi, and other organic buildups in recirculating water systems. For initial or remedial treatment in cases of visually-obvious build-up of slime, algae, or organic matter: beginning with a 500 ppm solution, for each 1,000 gallons or cooling or fountain water, add 10 gallons of the 500 ppm solution to achieve a residual concentration of chlorine dioxide of approximately 5 ppm. Circulate water in normal system operation. Repeat daily until desired results are achieved. For continuous or periodic treatment: beginning with a 500 ppm solution, for each 1,000 gallons of cooling or fountain water, add one gallon of the 500 ppm solution to achieve a residual concentration of chlorine dioxide of approximately 0.5 ppm. Circulate water in normal system operation. See Technical Bulletin for activation instructions and other dilution and application specifics.

ANTIMICROBIAL APPLICATIONS FOR WATER-BASED CUTTING FLUIDS/OILS: This product will help remove, control and inhibit reemergence of slimes, odor-causing bacteria, and other organic growth in water-based cutting oils and attendant systems. The chlorine dioxide can be used for batch treatments, continuous operation, or shock (for heavily contaminated systems) for small-volume systems. Beginning with a 500 ppm solution, for each 100 gallons of cutting oil in the system, add between 0.2 and 2 gallons of the 500 ppm solution, depending on the amount of contamination and frequency of treatment. See Technical Bulletin for dilution and application specifics.

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Selective Micro Technologies®

Selectrocide®
-2L500-

Technical Bulletin

Disinfectant/Sanitizer/Tuberculocide/Virucide
Fungicide/Algaecide/Slimicide/Deodorizer

EPA Registration No. 74986-4 EPA Establishment No. 071441-OH-004

Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label. One pouch, activated as directed, contains two (2) liters of chlorine dioxide solution at a concentration of 500 ppm. Shake pouch gently before use, and prepare diluted solutions using the table below.

Dilution Instructions For: *Selectrocide*®2L500

TO PREPARE A FINAL SOLUTION OF THIS CONCENTRATION	DO ANY ONE OF THE FOLLOWING: (1) Add One (1) Part Activated Solution to This Many Parts Water	(2) Use Contents of an Activated Pouch of with a Dilution Device set at:	(3) Add **Entire Contents** (2 liters) of the Activated Pouch to This Much Water:	(4) Add The Indicated Volume of Activated *Selectrocide®2L500* Solution To Each Liter, Gallon, or Quart of Water: 1 Liter	1 Gallon	1 Quart
0.25 ppm	1,999	1:2,000	1,050 gallons (3,998 liters)	0.5 ml	.07 fl oz	.02 fl oz
5 ppm	99	1:100	52 gallons (198 liters)	11 ml	1.3 fl oz	0.4 fl oz
20 ppm	24	1:25	12.5 gallons (48 liters)	42 ml	5.4 fl oz	1.4 fl oz
50 ppm	9	1:10	4.75 gallons (18 liters)	112 ml	14.3 fl oz	3.6 fl oz
100 ppm	4	1:5	2.1 gallons (8 liters)	250 ml	32.0 fl oz	8.0 fl oz

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.
Use solution within 15 days of activation.
Storage: Store unused solution according to "Directions for Use" on pouch label.
Transfer unused solution from pouch to approved storage container within 48 hours of activation.
After use, dispose of pouches according to disposal instructions on pouch label.

Selective Micro Technologies www.selectivemicro.com
5 Cherry Hill Drive, Danvers, MA 01923, Phone 978 223-4040, FAX 978 223-4044

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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. **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 a 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*®2L500. 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.

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ATCC (OR OTHER) DESIGNATIONS FOR PATHOGENIC ORGANISMS
LISTED ON THE LABELS OF REGISTERED SELECTROCIDE PRODUCTS

Pseudomonas aeruginosa	ATCC 15442
Staphylococcus aureus	ATCC 6538
Salmonella enterica (choleraesuis)	ATCC 10708
Methicillin-resistant *Staphlococcus aureus* (MRSA)	ATCC 33592
Vancomycin-resistant *Enterococcus faecalis* (VRE)	ATCC 51299
Mycobacterium bovis (TB)	BCG (Organon Teknika Corporation)
Trichophyton mentagrophytes	ATCC 9533
Listeria monocytogenes	ATCC 19111
Candida albicans	ATCC 10231
Coronavirus	ATCC VR-740, Strain 229E
Feline Calicivirus	ATCC VR-782, Strain F-9
Hepatitis A	Strain HM-175
Human Immunodeficiency Virus type 1 (*HIV-1*)	Strain HTLV-III_B
Poliovirus-1	ATCC VR-1000, Strain Brunhilde
Rotavirus	Strain WA
Influenza-A virus	ATCC VR-544, Strain Hong Kong
Rhinovirus type 37	ATCC VR-1147, Strain 151-1
Canine Parvovirus	ATCC VR-2017, Strain Cornell
Adenovirus type 5	ATCC VR-5, Strain Adenoid 75
Herpes Simplex-2	ATCC VR-734, Strain G
Vaccinia	ATCC VR-119, Strain WR
Norovirus (feline calici surrogate)	ATCC VR-782, Strain F-9
Escherichia Coli	ATCC 11229
Escherichia coli O157:H7	ATCC 43895
Salmonella typhimurium (MDRS)	Cl 01005 (University of Maryland)
Klebsiella pneumonia	*ATCC 4352*

GENERAL USES

A. SANITIZER

FOR HARD, NON-POROUS FOOD CONTACT SURFACES

As a sanitizer for stainless steel and other hard, non-porous food contact surfaces such as tanks, transfer lines and other food processing equipment in food processing plants such as poultry, fish & meat and in restaurants, dairies, beverage and bottling plants, breweries, wineries and commissaries:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Remove all gross food particles and soil prior to sanitizing using a pre-flush, pre-scrape or pre-soak treatment.
3. Clean tank, line or surface thoroughly using a suitable detergent and rinse with clean, potable water before sanitizing.
4. Prepare a 5 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:100 dilution device (one part activated solution to 99 parts water).
5. To apply: spray, mop, sponge or swab surfaces **OR** fill, flush, immerse or circulate in tanks, lines, and equipment, ensuring the target surfaces remain visibly wet for at least one minute. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
6. After sanitizing, allow surfaces or equipment to air dry. Do not reuse solution. Do not rinse sanitized surface.
7. Dispose of pouch according to instructions on pouch label.

FOR HARD, NON-POROUS, NON-FOOD CONTACT SURFACES

As a sanitizer for non-porous, non-food contact surfaces and equipment such as sealed concrete and sealed, finished wood, backsplashes, counter tops, stainless steel or hard-surface equipment, tile floors, walls, and ceilings:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Clean all surfaces thoroughly with a suitable detergent and rinse with water prior to sanitizing.
3. Prepare a 20 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:25 dilution device (one part activated solution to 24 parts water).
4. To apply: spray, mop or sponge the 20 ppm solution onto the surfaces to be sanitized, ensuring the target surfaces remain visibly wet for at least five minutes. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
5. After sanitizing, allow surfaces or equipment to air dry. Do not reuse solution. Do not rinse sanitized surfaces.
6. Dispose of pouch according to instructions on pouch label.

B. DISINFECTANT

To disinfect stainless steel and other hard, non-porous surfaces such as tanks, transfer lines and other food processing equipment in food processing plants such as poultry, fish & meat and in restaurants, dairies, beverage and bottling plants, breweries, wineries and commissaries and to disinfect walls, floors and ceilings

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Remove all gross food particles and soil prior to disinfecting using a pre-flush, pre-scrape or pre-soak treatment.
3. Clean tank, line or surface thoroughly using a suitable detergent and rinse with clean, potable water before disinfecting.
4. Prepare a 100 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:5 dilution device (one part activated solution to four parts water).
5. To apply: spray, mop, sponge or swab surfaces **OR** fill, flush, immerse or circulate in tanks, lines, and equipment, ensuring the target surfaces remain visibly wet for at least ten (10) minutes. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
6. After disinfecting allow surfaces or equipment to air dry. Do not reuse solution. Do not rinse disinfected surfaces.
7. Dispose of pouch according to instructions on pouch label.

DISINFECTANT USES IN MEDICAL AND DENTAL OFFICES, LABORATORIES, HOSPITALS, CLINICS, MORGUES AND INSTITUTIONS

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 blood stream 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.

A. To disinfect non-porous, hard surfaces such as stainless steel or hard-surface equipment, tile floors, walls, ceilings, stainless steel cold rooms and walk-in incubators:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Clean all surfaces thoroughly with a suitable detergent and rinse with water prior to disinfection.
3. Prepare a 100 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:5 dilution device (one part activated solution to four parts water).
4. Spray, mop or sponge the 100 ppm solution onto surfaces to be disinfected. All surfaces must remain visibly wet for at least ten (10) minutes. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
5. After disinfecting, allow surfaces or equipment to air dry. Do not reuse solution. Do not rinse disinfected surfaces.
6. Dispose of pouch according to instructions on pouch label.

B. To disinfect equipment tops, bench tops, biological hoods, incubators, stainless steel equipment and instruments:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Clean all surfaces thoroughly with a suitable detergent and rinse with water prior to disinfection.
3. Prepare a 100 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:5 dilution device (one part activated solution to four parts water).
4. Spray, mop or sponge the 100 ppm solution onto surfaces to be disinfected. All surfaces must remain visibly wet for at least ten (10) minutes. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
5. After disinfecting, allow surfaces or equipment to air dry. Do not reuse solution. Do not rinse disinfected surfaces.
6. Dispose of pouch according to instructions on pouch label.

C. To disinfect commercial animal confinement facilities such as poultry houses, swine pens, calf barns and kennels:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Remove all animals and feed from facility to be disinfected.
3. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other structures occupied or traversed by animals.
4. Empty all troughs, racks and other feeding and watering appliances.
5. Prepare a 100 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:5 dilution device (one part activated solution to four parts water).

FOR GENERAL APPLICATION WITH SPRAYER:

6. With soap or detergent, thoroughly clean all surfaces and rinse with water.
7. Using a commercial sprayer, saturate all surfaces with the solution maintaining visible wetness for a period of at least ten (10) minutes. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
8. After treatment, ventilate buildings, coops or other enclosed spaces before reentering. Do not house poultry or employ equipment until treatment has been absorbed, set, or dried.

AS A DISINFECTING SOAK:

6. With soap or detergent, thoroughly clean halters, ropes or other types of equipment used in handling and restraining animals and forks, shovels and scrapers used in removing litter and manure. Rinse with water.
7. Fill container or vat with 100 ppm solution, and immerse items for a period of at least ten (10) minutes.
8. Discard solution in sanitary drain or as ordinary non-hazardous waste. Do not reuse solution.

9. Thoroughly scrub treated feed racks, troughs, automatic feeders, fountains and waterers with soap or detergent and rinse with potable water before reuse.
10. Dispose of pouch according to instructions on pouch label.

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DISINFECTANT FOR BEVERAGE AND WATER SYSTEMS AND LINES

To disinfect lines, holding tanks and other equipment used in fountain drink or other beverage preparation, storage, transfer and dispensing operations or to disinfect the lines and storage tanks of potable water storage systems aboard aircraft, boats and RVs (clean-in-place applications):

Prior to disinfecting, clean tanks and flush thoroughly with clean, potable water

FOR A TEN (10) MINUTE OR LONGER DISINFECTION

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Prepare a 100 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:5 dilution device (one part activated solution to four parts water) **OR** add the entire contents of one *Selectrocide*®2L500 pouch for each 8 liters (2.0 gallons) of water added to the tank.
3. **Fill tank completely with 100 ppm solution**. Run solution through transfer lines and appliances until green solution appears at the outlets. Top-off tank with solution. Circulate or let stand in tank and lines for at least ten (10) minutes.
4. Drain tanks and lines. Rinse with potable water.
5. Dispose of pouch(es) according to instructions on pouch label.

FOR A TWENTY (20) MINUTE OR LONGER DISINFECTION

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Prepare a 50 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 pouch with a 1:10 dilution device (one part activated solution to nine parts water) **OR** add the entire contents of one *Selectrocide*®2L500 pouch for each 18 liters (4.75 gallons) of water added to the tank.
3. **Fill tank completely with 50 ppm solution**. Run solution through transfer lines and appliances until green solution appears at the outlets. Top-off tank with solution. Circulate or let stand in tank and lines for at least twenty (20) minutes.
4. Drain tanks and lines. Rinse with potable water.
5. Dispose of pouch(es) according to instructions on pouch label.

ANTIMICROBIAL AND GENERAL CLEANING APPLICATIONS FOR WATER LINES AND TANKS IN POTABLE WATER SYSTEMS

This product will reduce microbial populations in the potable water holding tanks and lines of recreational vehicles (RV) and boats; in marine and RV wastewater tanks and lines; and fountain drink or other beverage preparation, storage, transfer and dispensing lines and equipment, and in coolers, thermoses, plastic water bottles, and other water-storing and dispensing systems used for picnics, camping, and other recreational activities. In addition, it will clean, eliminate odors, and remove organic matter. These uses must be followed by a potable water rinse.

1. Determine the number of pouches of *Selectrocide*®2L500 necessary to clean the drinking water system. Use one pouch for every 50 gallons, or fraction thereof, of capacity. *Example:* Two 80-gallon tanks = 160 gallon capacity. Therefore, to clean two 80-gallon tanks requires using four *Selectrocide 2L500* pouches.
2. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
3. Drain all water tanks completely. Then, refill tanks with water to approximately 10% of their capacity (for example, a 100-gallon tank should be filled with 10 gallons of water.)
4. Add one pouch of *Selectrocide*®2L500 for every 50 gallons of capacity according to the table below (see instruction 1 above). **Do not add additional water. Do not refill tank**

FOR TANKS OF THIS OVERALL SIZE		USE THIS NUMBER OF ACTIVATED POUCHES	IN THIS MUCH WATER
More than:	**Less Than:**		
5 gallons	50 gallons	1	20 liters/5 gallons
50 gallons	100 gallons	2	40 liters/10 gallons
100 gallons	150 gallons	3	60 liters/15 gallons
150 gallons	200 gallons	4	80 liters/21 gallons
200 gallons	250 gallons	5	100 liters/26 gallons
250 gallons	300 gallons	6	120 liters/31 gallons
300 gallons	350 gallons	7	140 liters/36 gallons
350 gallons	400 gallons	8	160 liters/42 gallons

5. Circulate the diluted *Selectrocide*®2L500 solution through all lines and between tanks using the system's pumps.
6. Run approximately 6 ounces of the *Selectrocide*®2L500 solution through each outlet (faucet, shower etc.) and let the solution stand in the tanks and lines **OVERNIGHT**.
7. The next day, flush the *Selectrocide*®2L500 solution through all faucets and outlets until the tanks are empty.
8. Refill the tanks with rinse water to approximately 10% of their capacity (10 gallons per 100 gallons capacity).
9. Circulate the water and flush rinse water through all faucets and outlets until tanks are empty.
10. Tanks are now cleaned and can be refilled for use or left empty for storage.
11. Dispose of pouch(es) according to instructions on pouch label.

HORTICULTURAL DISINFECTANT, SANITIZER, ALGAECIDE, FUNGICIDE AND SLIME REMOVER/INHIBITER

Treats/Controls/Inhibits: Algae (*Phormidium boneri*) and Fungi (*Penicillium digitatum, Botrytis sp., Fusarium solani, Pythium aphanidermatum, Pythium irregulare, Fusarium oxysporum f. sp. basilicum (Fob)*)

This product, when used as directed:

(1) disinfects non-porous hard surfaces, pots, flats, flower buckets and cutting tools;
(2) sanitizes non-porous hard surfaces, racks, stands, work areas, benches and cutting tools;
(3) removes or inhibits (under continuous treatment) re-establishment of slime in irrigation/transfer lines and systems;
(4) treats, controls and prevents build-ups of soil-borne plant diseases and other algae, fungi and attendant slimes on: soils used to grow nursery stocks, bedding plants, flowering plants and ornamentals; on cut flowers and other cuttings, seedlings and seeds; and on and within greenhouse equipment and structures such as irrigation/transfer lines and systems, pots, floors, ventilation ducts and equipment, storage rooms, growing tables, evaporative coolers, plastics, benches and flower pots; and
(5) controls bacterial counts, maintains freshness, and extends shelf life for cut flowers.

NOTE: Do not use at concentrations higher than those recommended for each application. When applied directly to plants, seeds, cuttings or flowers as directed, *Selectrocide*®2L500 does not cause adverse cosmetic effects, as testing has demonstrated. However, testing has not been performed on EVERY plant species, and users are advised to spot-test *Selectrocide*®2L500 before applying it widely.

Active solution may be irritating if breathed. If applying solution inside greenhouse or enclosed area using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide: after treatment, ventilate greenhouse before reentering.

A. To disinfect non-porous hard surfaces, including stainless steel, glazed tile, sealed concrete and sealed, finished wood used in horticultural applications:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Pre-clean all surfaces prior to application of disinfectant solution. Sweep and remove all plant debris. Use power sprayer to wash all surfaces to remove loose dirt.
3. Prepare solutions in indicated concentrations and ensure surfaces are wetted and remain visibly wet for the times noted below in the instructions associated with the desired application. Dispose of pouch according to instructions on pouch label.

FOR WORK AREAS, BENCHES AND EVAPORATIVE COOLERS

4. Prepare a 100 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 solution with a 1:5 dilution device (one part activated solution to four parts water).
5. Spray or swab work area and bench surfaces before each work period and again after each planting is completed to help control the transfer of diseases. Spray or swab evaporative cooler surfaces, ensuring visible wetness for at least ten (10) minutes. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.

FOR POTS, FLATS, FLOWER BUCKETS AND CUTTING TOOLS

FOR A TEN (10) MINUTE OR LONGER DISINFECTION

4. Prepare a 100 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 solution with a 1:5 dilution device (one part activated solution to four parts water).
5. Brush or wash used pots and flats, and then soak in the 100 ppm solution for at least ten (10) minutes before reuse to help control transfer of diseases. Soak tools with 100 ppm solution for at least ten (10) minutes to help control the transfer of disease.
6. Discard solution in sanitary drain or as ordinary non-hazardous waste. Do not reuse solution.

At end of workday, dry and oil tools.

FOR A TWENTY (20) MINUTE OR LONGER DISINFECTION

4. Prepare a 50 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 solution with a 1:10 dilution device (one part activated solution to nine parts water).
5. Brush or wash used pots and flats and then soak in the 50 ppm solution for at least twenty (20) minutes before reuse to help control transfer of diseases. Soak tools with 50 ppm solution for at least twenty (20) minutes to help control the transfer of disease.
6. Discard solution in sanitary drain or as ordinary non-hazardous waste. Do not reuse solution.

At end of workday, dry and oil tools.

B. To sanitize work area non-porous (non-food contact) hard surfaces, hard-surface benches, pots, flats, flower buckets and cutting tools:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Pre-clean all surfaces prior to application of sanitizing solution. Sweep and remove all plant debris. Use power sprayer to wash all surfaces to remove loose dirt.
3. Prepare a 20 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 solution with a 1:25 dilution device (one part activated solution to 24 parts water).
4. Brush or wash used pots and flats then swab or soak in the 20 ppm solution for at least five (5) minutes before reuse to help control transfer of diseases. Spray, swab or soak tools with 20 ppm solution for at least five (5) minutes to help control the transfer of disease. Spray or swab work area and bench surfaces before each work period and again after each planting is completed to help control the transfer of diseases. If applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide. If soaking, discard solution in sanitary drain or as ordinary non-hazardous waste; do not reuse solution.
5. Dispose of pouch according to instructions on pouch label.

At end of workday, dry and oil tools

C. As a dip to control and suppress bacteria (*Erwinia chrysanthemi*), algae (such as *Phormidium boneri)* and fungi (such as *Penicillium digitatum, Botrytis sp.,* and *Fusarium solani)* on rooted and unrooted cuttings and cut flowers:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on pouch label.
2. Prepare a 5 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selectrocide*®2L500 solution with a 1:100 dilution device (one part activated solution to 99 parts water).
3. Briefly dip cuttings or cut flowers and ensure they remain visibly wet with solution for at least one minute.
4. Dispose of pouch according to instructions on pouch label.

D. As a dip or drench to control and suppress bacteria (*Erwinia chrysanthemi*), algae *(Phormidium boneri)* and fungi *(Penicillium digitatum, Botrytis sp., Fusarium solani, Pythium aphanidermatum, Pythium irregulare, Fusarium oxysporum f. sp. Basilicum (Fob))* in seed-bed soil and planting cubes:

1. Activate *Selective Micro®Clean-Alpha* according to "Directions for Use" on the pouch label.
2. Prepare a 5 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selective Micro®Clean-Alpha* solution with a 1:100 dilution device (one part activated solution to 99 parts water).
3. Immerse or drench seed-bed soil or planting cubes and allow to remain visibly wet with solution for ten (10) minutes.
4. Dispose of pouch according to instructions on pouch label.

Soil or planting cubes can be seeded or planted immediately after treatment.

E. For removing slime and retarding its reemergence; for antimicrobial applications involving algae *(Phormidium boneri)* and fungi *(Penicillium digitatum, Botrytis sp., Fusarium solani, Pythium aphanidermatum, Pythium irregulare, Fusarium oxysporum f. sp. Basilicum (Fob))*; and for continuous treatment to inhibit their re-establishment in irrigation systems, flood floors, flooded benches, misting systems, humidification systems, recycled water systems and capillary mats:

1. Activate S*electrocide®*2L500 according to "Directions for Use" on pouch label.
2. Pre-clean all surfaces prior to application of disinfectant solution. Sweep and remove all plant debris. Use power sprayer to wash all surfaces to remove loose dirt.
3. Prepare solutions in indicated concentrations and ensure surfaces are wetted and remain visibly wet for the times or are applied continuously as noted below. Dispose of pouch according to instructions on pouch label.

AS AN INITIAL OR REMEDIAL TREATMENT TO DISINFECT WATER HOLDING TANKS AND LINES (CLEAN-IN-PLACE APPLICATION)

4. Flush tank thoroughly with clean water.
5. Prepare a 50 ppm solution in accordance with the directions above **OR** use the undiluted contents of the activated S*electrocide®*2L500 solution with a 1:10 dilution device (one part activated solution to nine parts water).
6. Fill tank completely. Run solution through irrigation/transfer lines and appliances until green solution appears at the outlets. Top-off tank with solution. Circulate or let stand in tank and lines for at least twenty (20) minutes.
7. Drain tanks and lines, flush with clean water, and resume normal operation.

AS AN INITIAL OR REMEDIAL TREATMENT TO DISINFECT AND REMOVE SLIME, ALGAE AND FUNGI FROM WATER HOLDING TANKS AND IRRIGATION/TRANSFER LINES (CLEAN-IN-PLACE APPLICATION)

4. Flush tank thoroughly with clean water.
5. Prepare a 50 ppm solution in accordance with the directions above **OR** use the undiluted contents of the activated S*electrocide®*2L500 solution with a 1:10 dilution device (one part activated solution to nine parts water).
6. Fill tank completely. Run solution through irrigation/transfer lines and appliances until green solution appears at the outlets. Top-off tank with solution. Circulate or let stand in tank and lines overnight (12 hours).
7. Drain tanks and lines, flush with clean water, and resume normal operation.

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FOR CONTINUOUS TREATMENT TO INHIBIT THE RE-ESTABLISHMENT OF SLIME, ALGAE, AND FUNGI

4. Dilute the 500 ppm solution to 0.25 ppm using a 1:2,000 dilution device **OR** by adding one part 500 ppm solution to 1,999 parts water.
5. Use the 0.25 ppm solution to operate the water system following normal application procedures.

NOTE: Use ultra low-range *Selective Micro®Chlorine Dioxide Test Strips* to verify concentration at downstream production points. Organic loads vary across water supplies, and will influence injection level necessary to ensure 0.25 ppm concentrations at emitter hoses, mist nozzles, and drip tubes.

F. As an algaecide and fungicide for treating, preventing, suppressing and controlling horticultural diseases in commercial greenhouses, garden centers and nurseries:

1. Activate *Selectrocide®*2L500 according to "Directions for Use" on pouch label.
2. Pre-clean all non-plant surfaces prior to application of solution. Sweep and remove all plant debris. Use power sprayer to wash all surfaces to remove loose dirt.
3. Prepare solutions in indicated concentrations and ensure all plant surfaces are wetted and remain visibly wet for the times noted below. Dispose of pouch according to instructions on pouch label.

AS AN INITIAL OR REMEDIAL TREATMENT TO KILL ALGAE AND FUNGI ON SURFACES, EQUIPMENT, GREENHOUSE STRUCTURES, GLAZING, PLASTIC, BENCHES, WALKWAYS, FLOORS, WALLS, FAN BLADES, VENTILATION DUCTS, WATERING SYSTEMS, COOLERS AND STORAGE ROOMS:

4. Prepare a 5 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selectrocide®*2L500 solution with a 1:100 dilution device (one part activated solution to 99 parts water).
5. Apply solution with mop, sponge or sprayer. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide.
6. Visibly wet all surfaces and ensure the surfaces remain visibly wet for at least one hour.

Note: Heavy growths of algae or fungi may require scrubbing to remove dead growth.

AS A WEEKLY PREVENTATIVE TREATMENT TO KILL, CONTROL AND SUPPRESS FUNGI AND CONTROL AND SUPPRESS ALGAE ON SURFACES, EQUIPMENT, GREENHOUSE STRUCTURES, GLAZING, PLASTIC, BENCHES, WALKWAYS, FLOORS, WALLS, FAN BLADES, VENTILATION DUCTS, WATERING SYSTEMS, COOLERS AND STORAGE ROOMS:

4. Prepare a 5 ppm solution in accordance with the instructions above OR use the undiluted 500 ppm with a 1:100 dilution device (one part activated solution to 99 parts water).
5. Apply solution with mop, sponge or sprayer. When applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide. Visibly wet all surfaces and ensure the surfaces remain visibly wet for at least one hour (kill/cidal) and at least one minute (suppression).

G. As a dip to control and suppress bacteria (*Erwinia chrysanthemi*) on cuttings and cut flowers:

1. Activate *Selective Micro®Clean-Alpha* according to "Directions for Use" on pouch label.
2. Prepare a 5 ppm solution in accordance with the instructions above **OR** use the undiluted contents of the activated *Selective Micro®Clean-Alpha* pouch with a 1:100 dilution device (one part 500 ppm solution to 99 parts water).
3. Briefly dip cuttings or cut flowers and ensure they remain visibly wet with solution for at least one minute.
4. Dispose of pouch according to instructions on pouch label.

H. To maintain freshness and extend shelf-life for cut flowers:

1. Activate *Selectrocide®*2L500 according to "Directions for Use" on pouch label.
2. Prepare a 5 ppm solution in accordance with instructions above **OR** use the undiluted contents of the activated *Selectrocide®*2L500 pouch with a 1:100 dilution device (one part 500 ppm solution to 99 parts water).
3. Unbundle the flowers to preclude bunching, and place in vase on display or in cold storage in the 5 ppm solution of chlorine dioxide. Solution may include 2% sucrose.
4. Refresh solution every 24 hours.
5. Dispose of pouch according to instructions on pouch label.

TO EXTEND SHELF-LIFE AND FRESHNESS OF FRUITS AND VEGETABLES IN FOOD PROCESSING FACILITIES

THIS PRODUCT WILL REDUCE CONCENTRATIONS OF SPOILAGE MICROBES ON RAW AGRICULTURAL COMMODITIES (RACS) INTENDED FOR COMMERCIAL FOOD PROCESSING.

1. Activate *Selectrocide®*2L500 according to "Directions for Use" on the pouch label.
2. Wash and thoroughly rinse fruits and vegetables with clean, potable water.
3. Prepare a 5 ppm solution of activated *Selectrocide®*2L500 **OR** use the 500 ppm solution with a 1:100 dilution device (one part 500 ppm solution to 99 parts water).
4. Apply to fruits and vegetables by: either immersing/dipping in a tank of 5 ppm solution for one minute OR using an application-specific sprayer (the industry standard fan or cone spray nozzle pattern) to cover all surfaces evenly with a 5 ppm spray. Replenish immersion solution at the rate of depletion; verify 5 ppm concentration using *Selective Micro®Chlorine Dioxide Test Strips*. Empty and wash immersion tanks with every shift change.
5. Follow application to fruits and vegetables with a potable water rinse or canning, blanching, or cooking.
6. Dispose of pouch according to instructions on pouch label.

Selective Micro Technologies

ANTIMICROBIAL APPLICATIONS TO CONTROL THE BUILDUP OF MICROBES IN PROCESS WATERS FOR FRUITS AND VEGETABLES AND ASSOCIATED TANKS, FLUMES, AND LINES

This product will inhibit microbial growth in water used to process fruits and vegetables. Appropriate for small-volume applications only; use *Selectrocide*® G-Series products for normal- and large-volume process water applications.

NOTE:
1. **Replacement and replenishment intervals will vary with microbial challenge presented by fruits and vegetables treated. Selective Micro Technologies recommends a beginning concentration of 5 ppm, with adjustments to ensure a residual concentration between 0.25 and 5 ppm depending on microbial challenge and operation-unique factors.**
2. **Apply chlorine dioxide solution continuously or intermittently to achieve a residual concentration level between 0.25 – 5.0 ppm.**
3. **Regularly confirm concentration of process water using *Selective Micro*®*Chlorine Dioxide Test Strips* or other measurement means (e.g., Oxidation Reduction Potential [ORP] metering).**

1. At regular intervals or before beginning a shift, clean tanks, flumes, and lines using normal procedures, and follow with potable water rinse. [In conditions of severe microbial accumulation (or when slime is visible), it is advisable to treat the thoroughly cleaned system with an antimicrobial treatment before returning the system to normal operation. See *Selectrocide*®'s "Antimicrobial and General Cleaning Applications for Water Lines and Tanks in Potable Water Systems" for recommendations on cleaning tanks that are contaminated severely.]
2. Determine the number of *Selectrocide*®*2L500* pouches necessary based on the capacity of the tank or system, anticipated replenishment/replacement cycle based on expected microbial loads, and specific application method—once-through or recycled. The optimal concentration necessary to ensure a residual concentration of between 0.25 and 5.0 ppm will vary across operations.

   For "once-through" process designs, generate *Selectrocide*®2L500 directly to the desired end-concentration in the system's operating tank (recommended) OR generate stock 500 ppm external to the tank and meter the stock solution in adequate volume to raise the volumes of process water to the desired concentration via mechanical injection (recommended) or by batch-loading.

   For "recycle" process designs, generate stock 500 ppm solution external to the tank and inject activated solution in sufficient volume to raise the process water to the desired concentration via mechanical injection (recommended) or by batch-loading.

Consult pages 1-2 of this Technical Bulletin for dilution instructions, or scale to application using the table below, which presents, as a starting point, the total volume of stock 5 ppm solution generated using multiple pouches of *Selectrocide*®*2L500.* Because the volume of 5 ppm solution achievable using the 2L500 is small, this product will be useful only for the smallest-volume applications. Use *Selectrocide*® G-Series products for normal- and large-volume process water applications.

Selective Micro Technologies®

VOLUME OF 5 PPM SOLUTION USING
SELECTROCIDE®2L500 POUCHES

Number of Selectrocide®2L500 Pouches	Volume of Water Specified To Generate 500 ppm Stock Solution	Volume of 5 ppm Solution Created Using a Single Selectrocide® Pouch	
	Liters	Liters	Gallons*
1	2	200	55
2	4	400	105
3	6	600	160
4	8	800	210
5	10	1,000	265

*rounded to nearest 5 gallons

3. Activate *Selectrocide*®2L500 according to "Directions for Use" on package label.
4. Prepare a 5 ppm solution of activated *Selectrocide* ®2L500 directly in accordance with instructions above OR prepare a 500 ppm solution with any of the G-series products and use a 1:100 dilution device (one part 500 ppm solution to 99 parts water) to achieve target concentration of 5 ppm.
5. Verify concentration of process solution using *Selective Micro®Chlorine Dioxide Test Strips* or other appropriate means. Adjust concentration by adding additional water if the concentration is above 5 ppm or by adding additional concentrate if below 5 ppm (or below desired concentration between 0.25 and 5.0 ppm).
6. Cover or enclose containers holding solution, and operate normally.
7. Check concentration at regular intervals using test strips or other means to ensure target concentration is maintained. Replenish solution as necessary to maintain target concentration.
8. At desired intervals, drain system, clean as necessary, and refill with freshly-activated solution.
9. Dispose of pouch according to instructions on pouch label.

ANTIMICROBIAL TREATMENT FOR POULTRY DRINKING WATER

This product will help control microorganisms in drinking water intended for poultry.

A. For systems that use automatic, on-demand metering/injection systems designed primarily for poultry (i.e., systems employing nipples or drip wells as the final water delivery device/method, usually situated in enclosed or protected structures):

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on product label.
2. If activation vessel is different from feeder tank, transfer stock solution (500 ppm) to feeder tank. To maintain concentration, ensure that feeder tank is covered.
3. Operate system according to standard operating protocol, using a 1:100 injection device (one part solution to 99 parts water).

4. Confirm concentrations of stock solution (500 ppm) and end-use solution (up to 5 ppm) using *Selective Micro®Chlorine Dioxide Test Strips*.
5. Dispose of pouch according to instructions on pouch label.

Note: Clean and remove accumulations of organic matter in delivery lines on a regular basis. (See, for example, label and technical bulletin instructions for this product under the heading "Antimicrobial and General Cleaning Applications for Potable Water Systems")

B. For trough-based systems.

Use products from the *Selectrocide® G-Series* for these large-volume applications.

SANITIZING FINAL RINSE OF PRE-CLEANED OR NEW RETURNABLE OR NON-RETURNABLE CONTAINERS

This product may be used as a final sanitizing rinse for plastic, glass or metal returnable and non-returnable bottles, cans, caps, kegs, and beverage containers.

1. Activate Selectrocide®2L500 according to "Directions for Use" on pouch label.
2. Wash bottles, cans or containers with detergent or cleaning solution and rinse with potable water.
3. Starting with the 500 ppm solution, use a 6:100 dilution device (six parts 500 ppm solution to 94 parts water) to achieve an application concentration of 30 ppm. The table below presents the number of 2L500 pouches necessary to product the associated volume of 30 ppm application solution.

VOLUME OF 30 PPM SOLUTION USING SELECTROCIDE®2L500 POUCHES

Number of Selectrocide®2L500 Pouches	Volume of Water Specified To Generate 500 ppm Stock Solution	Volume of 30 ppm Solution Created Using a Single Selectrocide® Pouch	
	Liters	Liters*	Gallons*
1	2	33	8.8
2	4	67	17.6
3	6	100	26.4
4	8	133	35.2
5	10	167	44.0

*rounded to nearest liter or tenths of gallon

4. To apply: rinse interior and exterior surfaces with the 30 ppm solutions by spraying, sponging, swabbing, or swirling, or immersing in a manner that ensures the target surfaces become visibly wet for a contact time of 30 seconds (including drying time). (If applying these solutions using a high-pressure sprayer, wear a NIOSH/MSHA-approved respirator appropriate for chlorine dioxide).

5. Allow to drain dry.

NOTE: Use products from the *Selectrocide® G-Series* for larger-volume applications.

ANTIMICROBIAL AND GENERAL CLEANING USES FOR NON-POTABLE WATER APPLICATIONS INVOLVING RECIRCULATING WATER SYSTEMS (E.G., COOLING TOWERS, PAPER MILLS, AND DECORATIVE OR ORNAMENTAL FOUNTAINS)

This product will help remove, control and inhibit reemergence of slimes, algae, fungi, and other organic buildups in recirculating cooling water systems, including cooling towers and decorative or ornamental fountains. It can be used as a periodic treatment or during continuous operations in antimicrobial applications involving algae, fungi or bacteria.

1. Activate *Selectrocide®*2L500 according to "Directions for Use" on package label.
2. Prepare a 500 ppm solution of activated *Selectrocide®*2L500 in accordance with label instructions.
3. Where possible, pre-clean surfaces prior to application. Flush tanks or water system with clean water.
4. Apply/add the 500-ppm solution to the tank water or water stream at a point in the system or in a manner which minimizes turbulence and exposure to the air.
5. Dispose of pouch according to instructions on pouch label.

AS AN INITIAL OR REMEDIAL TREATMENT FOR RECIRCULATING COOLING WATER SYSTEMS, WATER HOLDING TANKS AND DECORATIVE AND ORNAMENTAL FOUNTAINS

6. For each 55 gallons of cooling or fountain water add the contents of a single pouch of activated *Selectrocide®2L500* solution (2 liters at 500 ppm) to achieve a 5 ppm residual chlorine dioxide level. Circulate water in normal operation of the system.
7. Check residual chlorine dioxide concentration using *Selective Micro®Chlorine Dioxide Test Strips*. If residual chlorine dioxide concentration is below 5 ppm, add additional 500 ppm solution until solution reaches 5 ppm; verify with *Test Strips*.
8. Repeat daily until desired results are achieved.

FOR CONTINUOUS TREATMENT TO INHIBIT THE RE-ESTABLISHMENT OF SLIME, ALGAE, OR FUNGI

6. For each 550 gallons of cooling or fountain water add the contents of a single pouch of activated *Selectrocide®2L500* solution (2 liters at 500 ppm) to achieve a residual chlorine dioxide concentration of approximately 0.5 ppm. Circulate water in normal operation of the system.
7. Check residual chlorine dioxide concentration using *Selective Micro®Chlorine Dioxide Test Strips*. If residual chlorine dioxide concentration falls below 0.1 ppm, add more 500 ppm solution (about 1 gallon of the 500 ppm solution for each 1,000 gallons of cooling or fountain water) to increase the residual chlorine dioxide concentration to about 0.5 ppm. Verify concentration with *Test Strips*.

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INSTRUCTIONS WHEN USING A DOSING PUMP AS AN INITIAL OR REMEDIAL TREATMENT FOR RECIRCULATING COOLING WATER SYSTEMS, WATER HOLDING TANKS AND DECORATIVE AND ORNAMENTAL FOUNTAINS

6. For each 55 gallons of cooling or fountain water add the contents of a single pouch of activated *Selectrocide®2L500* solution (2 liters at 500 ppm) to achieve a 5 ppm residual chlorine dioxide level. Circulate water in normal operation of the system.
7. Check residual chlorine dioxide concentration using *Selective Micro®Chlorine Dioxide Test Strips*. If residual chlorine dioxide concentration is below 5 ppm, add additional 500 ppm solution until solution reaches 5 ppm; verify with *Test Strips*.
8. Repeat daily until desired results are achieved.

INSTRUCTIONS WHEN USING A DOSING PUMP FOR CONTINUOUS TREATMENT TO INHIBIT THE RE-ESTABLISHMENT OF SLIME, ALGAE, OR FUNGI

6. Set the dosing pump to achieve a continuous concentration of chlorine dioxide between 0.25 ppm and 0.5 ppm. In order to maintain this concentration and the appropriate dosing, consider the volume of water in the system, half-life (makeup/blowdown rate), evaporative rate and windage loss of the system.
7. Check residual chlorine dioxide concentration using *Selective Micro®Chlorine Dioxide Test Strips* If residual chlorine dioxide concentration falls below 0.25 ppm, increase the dosage rate.

FOR PERIODIC TREATMENT TO INHIBIT THE RE-ESTABLISHMENT OF SLIME, ALGAE, OR FUNGI

6. For each 550 gallons of cooling or fountain water add the contents of a single pouch of activated *Selectrocide®2L500* solution (2 liters at 500 ppm) to achieve approximately 0.5 ppm residual chlorine dioxide concentration. Circulate water in normal operation of the system. Check residual chlorine dioxide concentration using *Selective Micro®Chlorine Dioxide Test Strips*.
7. Repeat weekly or on first indications of increased slime, algae or fungi.

ANTIMICROBIAL APPLICATIONS TO CONTROL SLIME AND ODOR-CAUSING BACTERIA AND TO REDUCE AND RETARD MICROBIOLOGICAL GROWTH IN WATER- BASED CUTTING OILS AND ATTENDANT SYSTEMS

This product will help remove, control and inhibit reemergence of slimes, odor-causing bacteria, and other microbiological/organic growth in water-based cutting oils and attendant systems. The chlorine dioxide can be generated externally to the system (and added) or directly in the cutting oil for batch treatments, continuous operation, or shock (for heavily contaminated systems).

CAUTION: Chlorine dioxide may not be compatible with some water-based cutting oils. Check with the manufacturer, Selective Micro technical support, and/or conduct a trial if compatibility is in question.
NOTE: this product is suitable for smaller-volume systems. Use products from the Selectrocide G-series for systems with large volume requirements or for heavily contaminated systems.

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GENERATING SELECTROCIDE® TO ADD TO THE CUTTING OIL:

1. Activate *Selectrocide*®2L500 according to "Directions for Use" on package label.
2. Prepare a 500 ppm solution of activated *Selectrocide*®2L500 in accordance with label instructions.
3. Dispose of pouch according to instructions on pouch label.

FOR BATCH TREATMENT

4. Add 4 gallons (15 liters, or 7 ½ pouches) of the 500 ppm solution for each 1,000 gallons in a fresh system (resulting in chlorine dioxide at a concentration of approximately 2 ppm). Repeat weekly or upon the first indication of increased odors, slimes or bacterial contamination.

FOR CONTINUOUS TREATMENT

4. Each day, add 2 gallons (7.57 liters, or about 4 pouches) of the 500 ppm solution for each 1,000 gallons in a system (resulting in chlorine dioxide at a concentration of approximately 1 ppm).

FOR HEAVILY CONTAMINATED SYSTEMS

Use products from the *Selectrocide® G-Series* for these large-volume applications.

DISINFECTION, SANITIZING, ANTIMICROBIAL AND GENERAL CLEANING APPLICATIONS FOR WINERIES

This product will disinfect, sanitize, and clean winemaking equipment and environmental surfaces in wineries. It is effective against microbes and spoilage organisms on all non-porous surfaces including: picking bins, crushers, transfer lines/hoses/pipes, tanks, drains, pumps, presses, de-stemmers, sealed concrete floors and walls, steel cutting boards/surfaces, sumps, valves and tri-clover fittings, pruning shears, and steel wine barrels.

NOTE: 1. For applications not covered below or elsewhere in this Technical Bulletin, or to discuss other winery-specific application issues, contact Selective Micro Technologies' service personnel.

2. This product does not produce Trichloroanisol (TCA) or precursor Trichlorophenol (TCP) by chemical reaction in red wine or in cooperage oak, and therefore does not contribute to the off odors associated with the former.

A. Disinfecting and sanitizing applications for winery equipment and environmental surfaces (including all non-porous materials and surfaces, such as transfer hoses and pipes, and other items listed above):

1. Activate *Selectrocide®*2L500 according to "Directions for Use" on package label.

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2. Disinfecting Applications. For disinfecting applications, prepare a 100 ppm solution of activated *Selectrocide*®2L500 directly in accordance with instructions above OR prepare a 500 ppm solution of *Selectrocide*®2L500 and use a 1:5 dilution device (one part 500 ppm solution to 4 parts water).
   Sanitizing Applications on hard, food-contact surfaces. For sanitizing applications on hard, food-contact surfaces, prepare a 5 ppm solution of activated *Selectrocide*®2L500 directly in accordance with instructions above OR prepare a 500 ppm solution of *Selectrocide*®2L500 and use a 1:100 dilution device (one part 500 ppm solution to 99 parts water).
   Sanitizing Applications on hard, non-food-contact surfaces. For sanitizing applications on hard, non-food-contact surfaces, prepare a 20 ppm solution of activated *Selectrocide*®2L500 directly in accordance with instructions above OR prepare a 500 ppm solution of *Selectrocide*®2L500and use a 1:25 dilution device (one part 500 ppm solution to 24 parts water).
3. Apply to target surfaces with mop, sponge, or spray **OR** fill, flush, immerse or circulate in tanks, lines and equipment, ensuring surfaces remain circulate or spray until visibly wet for the following contact times:
   — Disinfection (100 ppm): 10 minutes
   — Sanitizing hard food-contact surfaces (5 ppm): 1 minute
   — Sanitizing hard non-food contact surfaces (20 ppm): 5 minutes
4. Dispose of pouch according to instructions on pouch label.

B. For sanitizing and cleaning tanks and associated connections, pipes, and hoses:

Use products from the *Selectrocide*® *G-Series* for these large-volume applications.