



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

July 17, 2023

Glen Rosini  
Senior Regulatory Advisor for Steptoe & Johnson LLC  
Representing: Evonik Active Oxygens, LLC  
Electronic Transmittal: [grosini@steptoe.com](mailto:grosini@steptoe.com)

Subject: PRIA Label Amendment – Amend label to remove the sanitization of hatching eggs claim  
Product Name: CERTAINTY  
EPA Registration Number: 65402-12  
Received Date: January 23, 2023  
Action Case Number: 00426828

Dear Glen:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

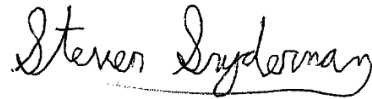
A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. Pursuant to 40 CFR 156.10(a)(6), you must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the Agency. See FIFRA section 2(p)(2). If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process, FIFRA section 12(a)(1)(B). Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Assurance.

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Zebora Johnson by phone at (202) 566-0730 or via email at [johnson.zebora@epa.gov](mailto:johnson.zebora@epa.gov).

Sincerely,

A handwritten signature in black ink that reads "Steven Snyderman". The signature is written in a cursive style with a horizontal line underneath the name.

Steven Snyderman, Product Manager 33  
Regulatory Management Branch II  
Antimicrobials Division (7510M)  
Office of Pesticide Programs

Enclosure: Accepted Label

# CERTAINTY®

**ACCEPTED**

07/17/2023

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 65402-12

ABN: Clarity 22  
EPA Registration No. 65402-12  
EPA Est. No. 65402-NY-001

**ACTIVE INGREDIENTS:**

Peroxyacetic Acid ..... 22%  
Hydrogen Peroxide ..... 10%

**OTHER INGREDIENTS:**..... 68%

**TOTAL:** ..... 100%

**KEEP OUT OF REACH OF CHILDREN  
DANGER – POISON**



[Note to Reviewer: In accordance with 40 CFR 156.68(d), all first aid statements, as prescribed, will appear on the front panel of the product label.]

*Note to the reviewer: Bracketed statements will only be present on split-label products with agriculture uses.*

*[Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)]*

 and  are trademarks of Evonik Active Oxygens, LLC



Manufactured by:  
Evonik Active Oxygens, LLC  
a subsidiary of Evonik Corporation  
2 Turner Place  
Piscataway, NJ 08854

**Net Contents:** \_\_\_\_\_

**CERTAINTY®** is for use in aseptic food processing on food packaging materials to achieve commercial sterility.

**CERTAINTY®** is for use as an antimicrobial rinse for non-public health pathogens of Pre-cleaned or New/Returnable or Non-Returnable Containers. Not for Use in CA. **CERTAINTY®** is for institutional/industrial sanitizing of previously cleaned non-porous food contact surfaces in:

- Dairies, Wineries, Breweries and Beverage Plants
- Meat and Poultry Processing/Packaging Plants
- Milk and Dairy Products Processing/Packaging Plants
- Seafood and Produce Processing/Packaging Plants
- Food Processing/Packaging Plants
- Egg Processing/Packaging Equipment Surfaces

**CERTAINTY®** is for Institutional/ industrial sanitizing of previously cleaned non-porous food contact surfaces such as:

- Commercial Food Processing Utensils
- Plastic, Glass and Metal Bottles (rinse)

**CERTAINTY®** is for use as a coarse spray for surfaces to be sanitized.

**CERTAINTY®** is for sanitizing surfaces such as packinghouse conveyers and harvesting equipment and containers. It is effective against plant pathogens: *Xanthomonas campestris (axonopodis)* pathogens citrumelo (citrus canker surrogate).

**CERTAINTY®** is for sanitization of shell eggs.

**CERTAINTY®** is for use in the disinfection of hard surfaces.

**CERTAINTY®** can be used for reducing pathogenic foodborne bacteria in processing waters for fruits and vegetables.

**CERTAINTY®** is for use as a dip or spray wash, or fog to control the growth of non-public health microorganisms that may cause decay and/or spoilage on raw, post-harvest and fresh cut, fruits and vegetables.

**CERTAINTY®** is for use in process water that contacts raw, post-harvest, fresh-cut and processed fruits and vegetables.

**CERTAINTY®** may be used to clean poultry, swine, livestock water systems when the system is not in use.

**CERTAINTY®** may be used to clean poultry, swine, livestock watering operating systems (when animals are present).

**CERTAINTY®** may be used for the control of algal and slime forming bacterial growth in livestock water.

**CERTAINTY®** is for use in agricultural water and irrigation systems.

**CERTAINTY®** is for use in oilfield and gas-field well operations. Not for Use in CA.

## Precautionary Statements Hazards to Humans and Domestic Animals

### DANGER - POISON

Corrosive. Fatal if swallowed or absorbed through skin. Causes irreversible eye damage and skin burns. May be fatal if inhaled. Do not get in eyes, on skin, or on clothing. Do not breathe vapor or spray mist. Do not enter an enclosed area without proper respiratory protection, or when uncoupling of product transfer hoses. Wear protective eyewear, rubber gloves, coveralls over long-sleeved shirt and long pants, socks, chemical resistant footwear, and a NIOSH approved respirator with an organic vapor (OV) cartridge with a NIOSH approval number prefix TC-23C when handling. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

### Physical or Chemical Hazards

Strong oxidizing agent. Mix only with water. At temperatures exceeding 156°F (69°C), decomposition of CERTAINTY® could occur, releasing oxygen. The oxygen released could initiate or promote combustion of other materials.

*Note to the reviewer: The following bracketed statements will only be present on split-label products with agriculture uses.*

#### [Personal Protective Equipment (PPE)]

Handlers who may be exposed to the undiluted product through mixing, loading, application, or other tasks must wear: coveralls over long-sleeved shirt and long pants, rubber gloves, chemical resistant footwear plus socks, and protective eyewear (goggles or face shield).

Handlers who may be exposed to the diluted product during application or other tasks must wear: long-sleeved shirt, long pants, socks, and shoes.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### User Safety Recommendations

Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.]

### Environmental Hazards

This pesticide is toxic to birds, mammals, fish and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Any solution released from the system should be diluted with water and tested for residuals to ensure that there is less than 3 ppm peroxyggen remaining.

### First Aid

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

- 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 a poison control center or doctor.
  - Do not give anything by mouth to an unconscious person.
- If on skin or clothing**
- Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15-20 minutes.

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- If in eyes**
- Call a poison control center or doctor for treatment advice.
  - 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 inhaled**
- Move person to fresh air.
  - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible.
  - Call a poison control center or doctor for further treatment advice.

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

### EMERGENCY TELEPHONE NUMBERS (24 HOURS)

**MEDICAL: COLLECT 303-389-1409**

**TRANSPORTATION: 800-424-9300**

**OTHER: COLLECT 716-879-0400**

### DIRECTIONS FOR USE

**It is a violation of Federal law to use this product in a manner inconsistent with its labeling. [Do not apply this product in a way that will contact workers or persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.]**

*Note to the reviewer: The following bracketed statements will only be present on split-label products with agriculture uses.*

#### [Agricultural Use Requirements]

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE), restricted entry interval, and notification to workers. The requirements in this box only apply to the uses of this product that are covered by the Worker Protection Standard.

A Restricted-Entry-Interval of zero (0) hours is required for CERTAINTY® in agricultural or horticultural uses.

Keep unprotected persons out of treated areas until sprays have dried.

#### [Non-Agricultural Use Requirements]

The requirements in this box apply to uses of the product that are **not** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried.]

### Aseptic Food Processing Operations

This product may be used to achieve commercial sterility of food packaging prior to fill and of equipment used in aseptic food processing applications.

### Food Packaging Materials

Apply CERTAINTY® on the exterior and interior of food containers and closure systems (caps, seals, etc.). Apply 4200 ppm peroxyacetic acid (13 fluid ounces of CERTAINTY®/5 gallons of sterile deionized water) at a

minimum temperature of 149°F (65°C). The solution must remain in contact with the packaging surface for a minimum of 20 seconds. Rinse containers with sterile water prior to filling with processed food; in lieu of a rinse, films may be mechanically stripped of excess sanitizing solution.

This product may be used on food packaging as an aseptic packaging antimicrobial rinse in food packaging processing operation that has a scheduled process accepted by FDA. The aseptic food processing operation must comply with all applicable FDA regulations, including but not limited to 21 CFR parts 108, 110, 113, and/or 114. Use in an aseptic food processing operation includes testing required for the process validation.

#### Food Processing Equipment

This product may be used to achieve commercial sterility of non-porous food manufacturing, packaging and filling equipment.

CERTAINTY® may be used as a manufacturing, filling (including rotary fillers) and packaging equipment.

1. Remove gross soil particles from equipment surfaces.
2. Clean surfaces thoroughly.
3. Rinse thoroughly with potable water.
4. Apply 4200 ppm peroxyacetic acid (13 fluid ounces of CERTAINTY® /5 gallons of sterile deionized water) at a minimum temperature of 149°F (65°C). Use immersion, coarse spray or circulation techniques to apply CERTAINTY®.
5. Allow contact time of at least 20 seconds.
6. Allow to drain dry.
7. A final rinse with sterile water is required.

This product may be used on equipment used in aseptic packaging antimicrobial rinse in food processing operation that has a scheduled process accepted by FDA. The aseptic food processing operation must comply with all applicable FDA regulations, including but not limited to 21 CFR Parts 108, 110, 113, and/or 114. Use in an aseptic food processing operation includes testing required for the process validation.

#### Antimicrobial Rinse of Pre-cleaned or New Returnable or Non-Returnable Containers (Not for Use in CA)

To reduce the number of nonpathogenic beverage spoilage organisms: *Byssoschlamys fulva*, *Pediococcus damnosus*, *Lactobacillus buchnei*, and *Saccharomyces cerevisiae*, use 0.69 to 7.10 fluid ounces of product per 5 gallons of water. This provides 265 to 2700 ppm peroxyacetic acid and 121 to 1227 ppm hydrogen peroxide. After applying the antimicrobial rinse, allow containers to drain thoroughly. Optional rinse with sterile or potable water.

CERTAINTY® may be mixed with the non-foaming agent, Peradigm™ and applied at room temperature or at a minimum of 77°F (25°C). (Approved for Use in CA)

1. Mix a minimum of 0.33 fluid ounce CERTAINTY® with Peradigm in 4.5 gallons of water.
2. Add a maximum of 43 fluid ounces of Peradigm to the dilute solution and bring total volume to 5 gallons. This provides 125 ppm peroxyacetic acid and 58 ppm hydrogen peroxide.
3. Apply solution, allowing a minimum contact time of 30 seconds.
4. Rinse with sterile or potable water (optional).

#### Sanitization of Non-Porous Food Contact Surfaces

For use in circulation cleaning and institutional/industrial sanitizing of previously cleaned non-porous food contact surfaces and equipment, such as pipelines, tanks, vats, fillers, evaporators, pasteurizers, and aseptic equipment in:

- Dairies, Wineries, Breweries and Beverage Plants
- Meat and Poultry Processing/Packaging Plants
- Milk and Dairy Products Processing/Packing Plants
- Seafood and Produce Processing/Packing Plants
- Food Processing/Packing Plants
- Egg Processing/Packing Equipment Surfaces, and
- Final Sanitizing Bottle Rinse

#### Pathogenic Organisms

CERTAINTY® is an effective sanitizer against *Staphylococcus aureus*, *Escherichia coli*, *Listeria monocytogenes* and *Salmonella typhimurium*.

Clean equipment immediately after use:

1. Remove gross particulate matter with a warm water flush.
2. Wash equipment with detergent or cleaning solution.
3. Rinse equipment with potable water.
4. Prepare CERTAINTY® solution by adding 0.23 to 0.32 fluid ounces to 5 gallons potable water. This provides 85 to 123 ppm peroxyacetic acid and 40 to 56 ppm of hydrogen peroxide.
5. If sanitizing against *Listeria monocytogenes* use 0.29 to 0.32 fluid ounces (109 to 123 ppm peroxyacetic acid and 50 to 56 ppm hydrogen peroxide) of product to 5 gallons of potable water.
6. Fill closed systems with diluted sanitizer solution for a contact time of one (1) minute.
7. For open or not completely closed systems, use a coarse spray, mop/wipe or flood technique to apply the solution to the surface for a contact time of one (1) minute.
8. Allow surfaces to drain thoroughly before resuming operation.

#### Non-Pathogenic Spoilage Organisms

CERTAINTY® is an effective sanitizer against non-pathogenic spoilage organisms: yeasts, molds.

Clean equipment immediately after use:

1. Remove gross particulate matter with a warm water flush.
2. Wash equipment with detergent or cleaning solution.
3. Rinse equipment with potable water.
4. To control non-pathogenic organisms, a rate of 1.31 fluid ounces to 5 gallons potable water may be used. This will provide 500 ppm peroxyacetic acid and 228 ppm hydrogen peroxide.
5. Fill closed systems with diluted sanitizer solution for a contact time of one (1) minute or more.
6. For open or not completely closed systems, use a coarse spray, mop/wipe or flood technique to apply the solution to the surface for a contact time of one (1) minute or more.
7. Allow surfaces to drain thoroughly before resuming operation.

#### Sanitizing Hard, Non-Porous, Non-Edible Outside Surfaces of Airtight, Sealed Packages Containing Food or Non-Food Products

CERTAINTY® may be used as a final sanitizing rinse for hard, non-porous non-edible outside surfaces of airtight, sealed packages containing food or non-food products at a dilution of 0.23 to 1.31 fluid ounces per 5 gallons of potable water. This provides 85-500 ppm peroxyacetic acid. The treated hard, nonporous non-edible packaging, such as food wraps and meat casings must be removed and discarded before packaged food products are further processed or consumed. All surfaces must be exposed to the sanitizing solution for at least one (1) minute. Drain thoroughly. No rinse necessary. This is not to be used on porous surfaces.

#### Sanitizing Food Processing Utensils

CERTAINTY® is an effective sanitizer against *Staphylococcus aureus*, *Escherichia coli*, *Listeria monocytogenes* and *Salmonella typhimurium* in commercial food processing facilities. This product is not for use in cafeteria settings.

1. Scrape/prewash utensils whenever possible.
2. Wash all items with a detergent.
3. Rinse thoroughly with potable water.
4. Prepare CERTAINTY® solution as follows:  
Add 0.23 to 0.32 fluid ounces of the product to 5 gallons of potable water. This will provide 85 to 123 ppm peroxyacetic acid and 40 to 56 ppm of hydrogen peroxide.
5. Immerse all items for at least one (1) minute or for a longer contact time if specified by the local governing sanitizing code.
6. If sanitizing against *Listeria monocytogenes* use 0.29 to 0.32 fluid ounces (109 to 123 ppm peroxyacetic acid and 50 to 56 ppm hydrogen peroxide) of product to 5 gallons of potable water.
7. Place all sanitized items on a rack or drainboard to drain adequately. Air dry if items will not be reused immediately.

### Final Sanitizing Bottle Rinse

CERTAINTY® may be used as a final sanitizing rinse for plastic, glass or metal returnable and non-returnable bottles/cans.

1. Wash bottles with detergent or cleaning solution and rinse with potable water.
2. Rinse bottles/cans with a solution prepared by mixing 0.23 to 0.32 fluid ounces of CERTAINTY® to 5 gallons of potable water. This provides 85 to 123 ppm peroxyacetic acid and 40 to 56 ppm of hydrogen peroxide. Allow to drain dry.

### Sanitization of Shell Eggs

To sanitize clean shell eggs intended for food or food products:

1. Prepare a dilute solution by adding 0.23 to 0.32 fluid ounces of CERTAINTY® to 5 gallons of potable water. This provides 85 to 123 ppm peroxyacetic acid and 40 to 56 ppm of hydrogen peroxide.
2. The dilute solution must be equal to or warmer than the eggs, but not to exceed 130F.
3. Apply dilute solution as eggs are gathered as a vapor, coarse spray or flood. Wet eggs thoroughly.
4. Allow to drain.
5. Eggs should be reasonably dry before casing or breaking.
6. The solution must **not** be reused for sanitizing eggs.

This product can be used in Federally Inspected Meat and Poultry facilities as a sanitizer.

### Sanitization of Conveyors, Peelers, Slicers, and Saws for Meat, Poultry, Seafood, Fruits, and Vegetables

CERTAINTY® is an effective sanitizer against *Staphylococcus aureus*, *Escherichia coli*, *Salmonella typhimurium*, and *Listeria monocytogenes*. For use in the washing, rinsing and sanitizing of conveyor equipment, peelers, collators, slicers, saws etc.

1. Remove all products from equipment unless treating only the return portion of a conveyor.
2. Prepare CERTAINTY® solution by adding 0.23 to 0.32 fluid ounces to 5 gallons of potable water. This provides 85 to 123 ppm peroxyacetic acid and 40 to 56 ppm of hydrogen peroxide.
3. Apply sanitizer solution to the return portion of the conveyor or to the equipment using a coarse spray or other means of wetting the surfaces. Control the volume of solution so as to permit maximum drainage and to prevent puddles. The conveyor surface may still be damp when food contact occurs.
4. If sanitizing against *Listeria monocytogenes* use 0.29 to 0.32 fluid ounces (109 to 123 ppm peroxyacetic acid and 50 to 56 ppm hydrogen peroxide) of product to 5 gallons of potable water.
5. Allow equipment to drain adequately before reusing; a dry surface is not required.

### Surfaces Treated to Control the Spread of Citrus Canker

CERTAINTY® can be used to control the spread of citrus canker between inanimate surfaces and inanimate surfaces to plants. This product is for sanitizing surfaces such as packinghouse conveyers and harvesting equipment and containers. This product is not for treatment of infected plants.

### Packinghouse Sanitization

CERTAINTY® is an effective sanitizer against microorganisms: *Xanthomonas campestris (axonopodis)* pathovars citrumelo (citrus canker surrogate) and *Aspergillus versicolor*, as well as *Staphylococcus aureus*, *Escherichia coli*, and *Salmonella typhimurium*.

1. Remove gross contamination with a cleaner or other suitable detergent and rinse with potable water.
2. Use CERTAINTY® at a dilution of 2.3 fluid ounces per 50 gallons of water (85 ppm peroxyacetic acid and 40 ppm hydrogen peroxide) as a general sanitizing coarse spray to reduce bacterial and fungal contamination of walls, floors, conveyers and harvesting containers.
3. Allow sanitizer to contact surface for at least one (1) minute.
4. Allow to air dry, do not rinse.

### Field Equipment Sanitization

CERTAINTY® may be used to sanitize harvest equipment such as pickers, trailers, trucks (including truck body parts and tires), bins, packing crates, ladders, power tools, hand tools, gloves, rubber boots, pruning shears or other equipment that may transfer *Xanthomonas campestris (axonopodis)* pathovars citrumelo (citrus canker surrogate). This product can also be used to sanitize surfaces contaminated with *E. coli*, *Salmonella typhimurium*, and *S. aureus*. CERTAINTY® may be used to sanitize harvest equipment used in the aquaculture industry such as nets, seines, trailers, trucks (including truck body parts and tires), or other non-porous equipment that may be a source of microbial contaminants.

1. Before sanitization, move the field equipment into an area with an impervious surface and with controlled drainage. Ensure that no sanitization solution will be released into the environment.
2. Remove gross contamination with a cleaner or other suitable detergent and rinse with water.
3. Use CERTAINTY® at a dilution of 2.3 to 3.6 fluid ounces per 50 gallons of water (85 to 135 ppm peroxyacetic acid and 40 to 63 ppm hydrogen peroxide) as a general sanitizing coarse spray.
4. Allow sanitizer to contact surface for at least one (1) minute.
5. Allow to air dry, do not rinse.

### Surface Disinfection

CERTAINTY® is an effective one-step cleaner and disinfectant against gram positive and negative bacteria (vegetative forms): *Staphylococcus aureus*, *Salmonella enterica*, *Pseudomonas aeruginosa* and viruses: Norovirus and *Legionella pneumophila*. It is effective in hard water (up to 400 ppm as calcium carbonate equivalent), and in the presence of moderate organic soil. It may be used to clean, disinfect, and deodorize inanimate surfaces, such as:

- Floors, walls, and other non-porous surfaces such as tables, chairs, counter tops, garbage cans/bins, sinks, shelves, racks, carts, refrigerators, coolers, glazed tile, linoleum, vinyl, sealed asphalt, glazed porcelain, plastic (such as polypropylene and polyethylene), stainless steel or glass.
- Areas of use in-poultry premises, trucks, hatcheries, and live stock quarters.
- Fish culture tanks and raceways when water is drained and fish are not present. Rinse surfaces with potable water before reintroducing fish.

To Control Bacteria listed above: Prepare CERTAINTY® disinfecting solution by adding 0.78 to 6.84 fluid ounces of the product to 5 gallons of potable water. This will provide 300 to 2600 ppm peroxyacetic acid and 136 to 1183 ppm hydrogen peroxide. For visibly soiled surfaces, remove filth from surfaces to be disinfected by cleaning with a detergent or suitable cleaning product. Rinse with clean water. To disinfect, apply CERTAINTY® by wiping, mopping, or as a coarse spray. Allow to soak for at least 10 minutes, then air dry.

To Control Norovirus: Prepare CERTAINTY® disinfecting solution by adding 2.09 fluid ounces of the product to 5 gallons of potable water. This will provide 800 ppm peroxyacetic acid and 364 ppm hydrogen peroxide. For visibly soiled surfaces, remove filth from surfaces to be disinfected by cleaning with a detergent or suitable cleaning product. Rinse with clean water. To disinfect, apply CERTAINTY® by wiping, mopping, or as a coarse spray. Allow to soak for at least 5 minutes, then air dry.

To Control Legionella pneumophila for hard, non-porous surfaces: Prepare CERTAINTY® disinfecting solution by adding 0.78 fluid ounces of the product to 5 gallons of potable water. This will provide 300 ppm peroxyacetic acid and 136 ppm hydrogen peroxide. For visibly soiled surfaces, remove filth from surfaces to be disinfected by cleaning with a

detergent or suitable cleaning product. Rinse with clean water. To disinfect, apply CERTAINTY® by wiping, mopping, or as a coarse spray. Allow to soak for at least 10 minutes, then air dry.

### For Reducing Pathogenic Foodborne Bacteria in Processing Waters for Fruits and Vegetables

CERTAINTY® can be used for reducing (in 90 seconds) 99.9% of pathogenic food borne bacteria (*Escherichia coli*, *Salmonella enterica*, and *Listeria monocytogenes*) in processing waters for fruits and vegetables.

1. Ensure the solution is thoroughly mixed.
2. Add CERTAINTY® at a dilution of 0.38 fluid ounce per 16 gallons of water. This provides approximately 45 ppm peroxyacetic acid and 21 ppm hydrogen peroxide.
3. Allow the solution to circulate at least 45 seconds before adding or treating raw, fresh-cut or processed fruits and vegetables.
4. Add concentrate as needed to maintain a minimum product concentration of 45 ppm peroxyacetic acid.
5. Prepare fresh process water daily. Do not reuse water that is badly fouled.

### For Treatment of Processing Waters to Control Growth of Non-Public Health Microorganisms that Can Cause Spoilage of Fresh-Cut, Post-Harvest or Processed Fruits and Vegetables (Not for Use in CA)

1. Ensure the solution is thoroughly mixed.
2. Add CERTAINTY® at a dilution of 0.5 to 4.16 fluid ounces per 16 gallons of water. This provides 5 to 500 ppm peroxyacetic acid and 2.7 to 227 ppm hydrogen peroxide. Add this product to no more than 500 ppm residual peroxyacetic acid to the use solution in accordance with Food Contact Notification 1950.
3. Allow the solution to circulate at least 45 seconds before adding or treating raw, fresh-cut or processed fruits and vegetables.
4. Add concentrate as needed to maintain a concentration of at least 5 ppm peroxyacetic acid and 2.5 ppm hydrogen peroxide.
5. Prepare fresh process water daily. Do not reuse water that is badly fouled.

### Sodium Acid Sulfate Food Grade may be used for pH adjustment of processing water treated with CERTAINTY®

1. Add sodium acid sulfate at 0.25% to 2.0% by weight directly to processing water at the start of processing. For example, add 0.25 lb of sodium acid sulfate to 100 lbs processing water for a 0.25% solution up to 2 lb sodium acid sulfate to 100 lbs of water for a 2% solution.
2. Ensure the solution is thoroughly mixed. Measure concentration by titration to achieve desired pH.
3. Additional sodium acid sulfate may be required depending on the volume of make-up water added.

### For Treatment of Processed Fruit and Vegetable Surfaces and Process Water to Control Growth of Non-Public Health Microorganisms that Can Cause Spoilage (Not for Use in CA)

1. Add CERTAINTY® at a dilution of 6.51 fluid ounces per 25 gallons of water. Ensure that the solution is thoroughly mixed. This provides 500 ppm of peroxyacetic acid and 227 ppm of hydrogen peroxide. Add this product to no more than 500 ppm residual peroxyacetic acid to the use solution in accordance with Food Contact Notification 1950.
2. Apply the prepared solution as a spray or dip. Allow a minimum contact time of 45 seconds. No rinse following application is required. This use complies with the requirements of FCN 1950. A potable water rinse is not required following application of the diluted solution.

### Sodium Acid Sulfate Food Grade may be used for pH adjustment of processing water treated with CERTAINTY®

1. Add sodium acid sulfate at 0.25% to 2.0% by weight directly to processing water at the start of processing. For example, add 0.25 lb of sodium acid sulfate to 100 lbs processing water for a 0.25% solution up to 2 lb sodium acid sulfate to 100 lbs of water for a 2% solution.

2. Ensure the solution is thoroughly mixed. Measure concentration by titration to achieve desired pH.
3. Additional sodium acid sulfate may be required depending on the volume of make-up water added.

### For Treatment of Raw, Unprocessed Fruit and Vegetable Surfaces (Not approved for CA)

CERTAINTY® can be applied as a dip or spray to control the growth of non-public health microorganisms: *Xanthomonas campestris (axonopodis)* pathovars citrumelo (citrus canker surrogate) and *Aspergillus versicolor*, blue mold (*Penicillium* species), green mold (*Penicillium* species) and stem-end rot (*Geotrichium*) that may cause decay and/or spoilage on raw, post-harvest fruits and vegetables during the washing process. This product can be applied during physical cleaning processes, including at the roller spreader, washer manifold, dip tank, on the brushes or elsewhere in the washing process prior to, simultaneously with or after detergent wash.

1. Prepare treatment solution by adding 0.71 to 4.2 fluid ounces per 16 gallons of potable water. This will provide 85-500 ppm peroxyacetic acid and 35-225 ppm hydrogen peroxide.
2. Apply the diluted sanitizer solution using a coarse spray directed at the fruits or vegetables, or by soaking the fruits or vegetables in the solution. Allow a contact time of at least 45 seconds.
3. The treated produce can be drain dried without a potable water rinse.
4. Prepare fresh process water daily. Do not reuse water that is badly fouled.

CERTAINTY® can be used on the following raw and post-harvest fruits and vegetables

#### Fruits

- Citrus fruits: citrus citron, citrus hybrids, grapefruit, kumquat, lemon, lime, mandarine (tangerine), orange, and pummelo
- Pome fruits: apple, crabapple, mayhaw, pear, and quince
- Stone fruits: apricot, cherry, nectarine, peach, plum, and prune
- Berries group: blackberry, blueberry, currant, cranberry, grape, honeysuckle, kiwifruit, serviceberry, raspberry, and strawberry

#### Vegetables

- Root & tuber vegetables: artichoke (Chinese and Jerusalem), beet, carrot, chicory, ginger, ginseng, horseradish, parsley, potato, radish, rutabaga, salsify, sweet potato, and yam
- Leaves of root and tuber vegetables: beet, carrot, celeriac, chicory, radish, rutabaga, sweet potato, turnip and yam
- Bulb vegetables: chive, garlic, leek, onion, and shallot
- Leafy vegetables: arugula, celery, endive, fennel, lettuce, parsley, radicchio, rhubarb, spinach, and swiss chard
- *Brassica* leafy vegetables: broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, and mustard greens
- Legumes: bean, chickpea, guar, lentil, pea, and soybean
- Fruiting vegetables: eggplant, pepper, tomatillo, and tomato
- Cucurbits: citron melon, cucumber, gourd, *Momordica* spp., muskmelon, pumpkin, and squash, and watermelon

Sprouts and seeds of: Fruits and Vegetables that are listed on this label including citrus fruits, pome fruits, stone fruits, berries group, root & tuber vegetables, bulb vegetables, leafy vegetables, *Brassica* leafy vegetables, legumes, and fruiting vegetables.

#### Other

- Tree nuts: almond, beech nut, brazil nut, butternut, cashew, chestnut, filbert, hickory nut, macadamia nut, pecan, walnut
- Cereal grains: Barley, buckwheat, corn, millet, oats, popcorn, rice, rye, sorghum, teosinte, triticale, wheat, and wild rice
- Herbs and spices: Allspice, anise, balm, basil, chive, celery seed, clove buds, cinnamon, coriander, cumin, curry, and dill (including seed), fennel, lavender, lemongrass, lovage, pepper, nutmeg, rosemary, saffron, sage, tarragon, thyme, and vanilla
- Edible fungi: mushroom and truffle
- Miscellaneous fruits and vegetables: asparagus, avocado, banana, fig, globe artichoke, hops, mango, okra, papaya, pawpaw, peanut, persimmon, pineapple, water chestnut, and watercress.



### **Sodium Acid Sulfate Food Grade may be used for pH adjustment of processing water treated with CERTAINTY®**

1. Add sodium acid sulfate at 0.25% to 2.0% by weight directly to processing water at the start of processing. For example, add 0.25 lb of sodium acid sulfate to 100 lbs processing water for a 0.25% solution up to 2 lb sodium acid sulfate to 100 lbs of water for a 2% solution.
2. Ensure the solution is thoroughly mixed. Measure concentration by titration to achieve desired pH.
3. Additional sodium acid sulfate may be required depending on the volume of make-up water added.

CERTAINTY® can be applied by fogging to control the growth of non-public health microorganisms that may cause decay and/or spoilage on raw, post-harvest fruits and vegetables during the post-harvest process.

1. Ensure room is properly ventilated. Vacate all personnel from room during fogging and for a minimum of 2 hours after fogging. Ensure there is no strong odor characteristic of acetic acid before having personnel return to work area. Do not enter room until hydrogen peroxide concentrations are correctly tested and are below 1 ppm on a time weighted average.
2. Fog area using one quart of a 0.06% solution (1.25 fluid ounce per 16 gallons of water) per 1,000 cu. ft. of room volume. Allow surface to drain thoroughly before operations are resumed.

### **Cleaning Poultry, Swine, Livestock Water Systems When the System is Not in Use (Not for Use in CA)**

To remove scale, calcium, iron, magnesium, heavy soils, polysaccharides and deposits from vitamins and medications from livestock watering systems use CERTAINTY® at 0.11 to 0.21 fluid ounces per gallon of water. This will provide 200-395 ppm peroxyacetic acid and 95-180 ppm hydrogen peroxide. When used as directed, CERTAINTY® will remove organic and inorganic deposits that reduce water flow and clog nipples. Allow system to run for 6 - 24 hours depending on the conditions. Following the cleaning process, rinse with potable water to remove the cleaning solution from the watering line, nipples and cups. Never mix CERTAINTY® with any other product.

### **Cleaning Poultry, Swine, Livestock Watering Operating Systems (When Animals are Present) (Not for Use in CA)**

After water lines have been cleaned, use CERTAINTY® at 0.21 to 0.31 fluid ounces per 100 gallons of water to control mineral build up in watering lines. This will provide 4-6 ppm peroxyacetic acid and 1.5-2.5 ppm hydrogen peroxide. Never use CERTAINTY® more than 5 consecutive days to clean the operating system. Never mix CERTAINTY® with any other product. If cleaning the operating system, stop the use of Certainty twenty-four (24) hours prior to vaccination or medication via the water line.

### **Control of Algal and Slime Forming Bacterial Growth in Livestock Water (Not for Use in CA)**

#### **Stock Tanks and Livestock Water**

Use CERTAINTY® to suppress / control algae, odor causing and slime-forming bacteria and sulfides in stock tanks, stock watering ponds, tanks and troughs, and livestock water. Apply 0.3 to 1.5 fluid ounces of CERTAINTY® per 250 gallons of water (2 – 11 ppm of 100% peroxyacetic acid) for algae control. Product can be simply added to the body of water. Where existing algae mats are present at time of treatment, the most effective control will be obtained by breaking up mats and/or evenly dispersing diluted CERTAINTY® over the algae mats. Apply CERTAINTY® as needed to control and prevent algae growth; apply more often in times of higher water temperatures.

Drip system application for livestock watering tanks: Tanks fed by a continuous flow of spring or well water can be equipped with a chemical drip system designed to meter-in CERTAINTY® based upon water flow rates. Pre-dilute CERTAINTY® at a 1:265 rate or 4-mL/minute water flow rate. Treat continuously or as needed to control and prevent algae regrowth.

### **Poultry, Swine, Livestock Water Line Cleaner When System is Not in Use (Not for Use in CA)**

To remove scale, mineral build up and heavy soils from livestock watering systems use CERTAINTY® at 0.11-0.21 fluid ounces per gallon of water. This will provide 200-395 ppm peroxyacetic acid and 95-180 ppm hydrogen peroxide. Allow system to run for 6 to 24 hours depending on the conditions. Following the cleaning process, rinse with potable water to remove the cleaning solution from the watering line, nipples and cups.

### **Poultry, Swine, Livestock Watering Operating Systems (Not for Use in CA)**

After water lines have been cleaned, use CERTAINTY® 0.21 to 0.31 fluid ounces per 100 gallons of water to control algae and bacteria in drinking water and to control mineral build up in watering lines. This will provide 4-6 ppm peroxyacetic acid and 1.5-2.5 ppm hydrogen peroxide.

### **Agricultural and Horticultural Uses**

A Restricted-Entry-Interval of zero (0) hours is required for CERTAINTY® in agricultural or horticultural uses. This product should not be mixed or combined with any pesticides or fertilizers. Upon soil contact, the diluted product decomposes rapidly to oxygen, carbon dioxide and water. This product may be harmful to fish if exposed on a continuous basis at concentrations greater than 1 ppm of active peracetic acid. Meter CERTAINTY® into pressurized pipes using a plastic or stainless steel injection/backflow device installed upstream from the equipment to ensure thorough mixing prior to application. For open bodies of water, allow adequate mixing prior to product flow entering any body of water. If open pouring of this product is required, pour product close to the surface of the water as possible to reduce odor and exposure.

### **Treatment of Agricultural and Irrigation Water Systems**

Use CERTAINTY® to control sulfides, odor, slime, and algae in sand filters, humidification systems, storage tanks, ponds, reservoirs, canals. Apply CERTAINTY® at 10.5 to 52 fluid ounces per 10,000 gallons of water. This provides 2 ppm to 10 ppm peroxyacetic acid. Repeat dose as necessary to maintain control. For prevention of algae, some systems may require continuous low level dosing during warm, sunny periods (2 ppm to 5 ppm peroxyacetic acid).

### **Drip Irrigation Systems**

To clean slime and algae from drip system filters, tapes and emitters, meter CERTAINTY® at 5.2 to 10.5 fluid ounces per 1000 gallons. This provides 10 ppm to 20 ppm peroxyacetic acid. Use this product at the recommended dose for a minimum of 30 minutes during normal irrigation cycles. Upon irrigation cycle completion, discontinue use and flush the lines.

### **Drilling Muds, Fracturing Fluids, Well Squeezed Fluids – (Not for use in CA)**

For the preservation of drilling muds, workover and completion fluids and other product susceptible to contamination, pre-mix with the fluid or add directly at the point of use at 2.6 fluid ounces per 1000 gallons of water (5 ppm of Peroxyacetic acid and 2.3 ppm of Hydrogen Peroxide) to 52 fluid ounces per 1000 gallons of water (100 ppm of Peroxyacetic Acid and 45 ppm of Hydrogen Peroxide) as required. Depending on the severity of the contamination, initial application may be added up to 522 fluid ounces per 1000 gallons of water (1000 ppm of Peroxyacetic acid and 455 ppm of Hydrogen Peroxide).

### **Flooding, Injection and Produced Water – (Not for Use in CA)**

For Water Flooding operations, add initially at 2.6 fluid ounces per 1000 gallons of water (5 ppm of Peroxyacetic acid and 2.3 ppm of Hydrogen Peroxide) to 52 fluid ounces per 1000 gallons of water (100 ppm of Peroxyacetic Acid and 45 ppm of Hydrogen Peroxide) and repeat until control is achieved. Subsequent treatment may be continued on a weekly basis or as required.

Injection wells associated with gas storage systems may be treated up to 100 ppm of Peroxyacetic Acid and 45 ppm of Hydrogen Peroxide when



diluted in the formation water. Any additional top-up water should be treated as required.

For hydrostatic systems, apply 2.6 fluid ounces per 1000 gallons of water (5 ppm of Peroxyacetic acid and 2.3 ppm of Hydrogen Peroxide) to 52 fluid ounces per 1000 gallons of water (100 ppm of Peroxyacetic Acid and 45 ppm of Hydrogen Peroxide) depending on the water quality and the duration of the shut-in.

### **Pipeline and Tank Maintenance – (Not for Use in CA)**

For microbial control in water-bottoms in crude and refined hydrocarbon storage tanks, piping and transportation systems. Apply 2.6 fluid ounces per 1000 gallons of water (5 ppm of Peroxyacetic acid and 2.3 ppm of Hydrogen Peroxide) to 52 fluid ounces per 1000 gallons of water (100 ppm of Peroxyacetic Acid and 45 ppm of Hydrogen Peroxide) in the aqueous phase, directly injected into the water-bottom, pipeline or may be added to the hydrocarbon phase. Treatment may be applied daily or monthly for both storage and transportation systems as needed.

Dispose of unused solution according to the storage and disposal directions.

## **STORAGE AND DISPOSAL**

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

**STORAGE: NEVER RETURN CERTAINTY® TO THE ORIGINAL CONTAINER AFTER IT HAS BEEN REMOVED.** Avoid all contaminants, especially dirt, caustic, reducing agents, and metals. Contamination and impurities will reduce shelf life and can induce decomposition. In case of decomposition, isolate container, douse container with cool water and dilute with large volumes of water.

Avoid damage to containers. Keep container closed at all times when not in use. Keep container out of direct sunlight. To maintain product quality, store at temperatures below 86°F (30°C). Do not store on wooden pallets.

### **DISPOSAL**

#### **Pesticide Disposal**

CERTAINTY® which is to be discarded should be disposed of as hazardous waste after contacting the appropriate local, state, or Federal agency to determine proper procedures.

#### **Container Handling**

**Nonrefillable containers less than 5 gallons.** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or place [or put] in trash or sanitary landfill. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Nonrefillable containers greater than or equal to 5 gallons.** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or place [or put] in trash or sanitary landfill. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Empty drums are not returnable to Evonik Active Oxygens, LLC unless special arrangements have been made. Dispose of drums in accordance with local, state, and Federal regulations.

**All Refillable containers.** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person

disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Return to Evonik Active Oxygens, LLC for reuse. If unable to return to Evonik Active Oxygens, LLC offer for recycling if available or place [or put] in trash or sanitary landfill.

### **Procedure for Leak or Spill**

Stop leak if this can be done without risk. Shut off ignition sources; no flames, smoking, flares, or spark producing tools. Keep combustible and organic materials away. Flush spilled material with large quantities of water. Undiluted material should not enter confined spaces. If material has been spilled, an acceptable method of disposal is to dilute with at least 20 volumes of water followed by discharge into suitable treatment system in accordance with all local, state, and Federal environmental laws, rules, regulations, standards, and other requirements. Because acceptable methods of disposal may vary by location, regulatory agencies should be contacted prior to disposal.

**Note:** Before using CERTAINTY® on metal surfaces, it is recommended that the diluted solution be tested on a small area to determine compatibility.

**Optional Background Graphic:**



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