



# HYDROXYSAN PLUS

## PRODUCT INFORMATION BULLETIN

# HYDROXYSAN PLUS

Cleaner • Disinfectant • Food Contact Sanitizer • Deodorizer • Fungicide • Virucide\*

## ACTIVE INGREDIENTS:

Hydrogen Peroxide.....27.3%  
Peroxyacetic Acid.....5.9%

OTHER INGREDIENTS: .....66.8%

TOTAL: .....100.0%

EPA Reg. No. 10324-214-2686

EPA Est. No. 2686-IA-2

I-18

## KEEP OUT OF REACH OF CHILDREN DANGER PELIGRO

See below for additional precautionary statements.

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.

## FIRST AID

In case of emergency, call a poison control center or doctor for treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**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.

**IF ON SKIN:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

**IF SWALLOWED:** 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. Call a poison control center or doctor immediately 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 mouth-to-mouth, if possible.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

For chemical emergencies, call ChemTrec 1-800-424-9300 24 hours a day.

Hydrite Chemical Co.  
300 North Patrick Blvd.  
Brookfield, WI 53045  
(262) 792-1450



## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**DANGER. CORROSIVE.** Causes irreversible eye damage and skin burns. Harmful if swallowed. May be fatal if inhaled. Do not get into eyes, on skin or on clothing. Do not breathe vapors or spray mist. Wear goggles or face shield and chemical-resistant gloves and protective clothing when handling. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear coveralls worn over long-sleeved shirt and long pants, waterproof gloves, chemical-resistant footwear and socks, protective eyewear, chemical-resistant headgear when using this product for algae control in overhead watering system and chemical-resistant apron when mixing, loading or cleaning equipment. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them. Follow 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 PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

## ENVIRONMENTAL HAZARDS

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

### PHYSICAL OR CHEMICAL HAZARDS

**STRONG OXIDIZING AGENT. CORROSIVE.** Mix only with potable water at 60 - 80°F. Product must be diluted in accordance with label directions prior to use. This product is not combustible; however, at temperatures exceeding 156°F, decomposition occurs releasing oxygen. The oxygen release could initiate combustion. Never bring this product into contact with other sanitizers, cleaners or organic substances.



## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store only in original container. Keep this product under locked storage sufficient to make it inaccessible to children or persons unfamiliar with its proper use.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**CONTAINER HANDLING:** Refillable Container. Refill this container with this product 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 a mix tank. Fill 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.

Non-Refillable Container. Do not reuse or refill this container. Triple rinse container {(or equivalent)} promptly after emptying. Triple rinse as follows: Fill the container  $\frac{1}{4}$  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 back and forth several times. Turn the container over onto its other end and tip back and forth several times. Follow Pesticide Disposal instructions for rinsate disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration

## Table of Contents

<b>FIRST AID .....</b>	<b>2</b>
<b>PRECAUTIONARY STATEMENTS .....</b>	<b>3</b>
<b>ENVIRONMENTAL HAZARDS.....</b>	<b>3</b>
<b>STORAGE AND DISPOSAL .....</b>	<b>4</b>
<b>ORGANISM LIST .....</b>	<b>6</b>
<b>DIRECTIONS FOR USE .....</b>	<b>17</b>
<b>DILUTION TABLE.....</b>	<b>18</b>
<b>SANITIZING .....</b>	<b>19</b>
<b>FUNGICIDAL.....</b>	<b>23</b>
<b>ANIMAL PREMISES .....</b>	<b>24</b>
<b>FOGGING.....</b>	<b>27</b>
<b>HOSPITAL / HEALTH CARE / MEDICAL / NON-MEDICAL.....</b>	<b>28</b>
<b>GENERAL DISINFECTION .....</b>	<b>29</b>
<b>DEODORIZING/CLEANING .....</b>	<b>32</b>
<b>WATER TREATMENT (Not for use in CA.).....</b>	<b>33</b>
<b>OIL FIELD, GAS PRODUCTION AND TRANSMISSION PIPELINE AND SYTEMS (Not for use in CA.) .....</b>	<b>34</b>
<b>BIOFOULING CONTROL IN PULP AND PAPER MILL SYSTEMS .....</b>	<b>35</b>
<b>(Not for use in CA.).....</b>	<b>35</b>
<b>AGRICULTURAL OR HORTICULTURAL USES (These uses require WPS.) .....</b>	<b>36</b>
<b>OTHER USES .....</b>	<b>42</b>
<b>POST-HARVEST TREATMENTS .....</b>	<b>43</b>

## ORGANISM LIST

### SPORICIDAL PERFORMANCE AGAINST *C. DIFFICILE* SPORES:

This product kills and/or inactivates the following spore in 2 minutes at 4 oz. per gal. of 400 ppm hard water (1844 ppm active PAA), on hard, non-porous surfaces:

*Clostridium difficile* (ATCC 43598)

**GENERAL DISINFECTION:** This product kills the following bacteria in 10 minutes at 1.5 oz. per 5 gal. of 400 ppm hard water (138 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Bordetella bronchiseptica* (ATCC 10580)  
*Corynebacterium ammoniagenes* (ATCC 6872)  
*Enterococcus faecalis* Vancomycin Resistant (VRE) (ATCC 51575)  
*Escherichia coli* O157:H7 (ATCC 35150)  
*Listeria monocytogenes* (ATCC 19117)  
*Salmonella enterica* (ATCC 10708)  
*Salmonella typhi* (ATCC 6539)  
*Shigella sonnei* (ATCC 25931)  
*Staphylococcus aureus* (ATCC 6538)  
*Staphylococcus aureus* Vancomycin Intermediate Resistant (VISA) (HIP 5836)

**DISINFECTION PERFORMANCE:** This product kills the following bacteria in 2 minutes at 2 oz. per gal. of 400 ppm hard water (922 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Acinetobacter baumannii* (ATCC 19606)  
*Bordetella pertussis* (ATCC 12743)  
*Enterococcus faecalis* Vancomycin Resistant (VRE) (ATCC 51575)  
*Escherichia coli* (ATCC 11229)  
*Escherichia coli* (Extended Spectrum B-Lactamase) (ESBL) (BAA-196)  
*Klebsiella pneumoniae* (ATCC 4352)  
*Klebsiella pneumoniae* Carbapenem Resistant (BAA-1705)  
*Proteus mirabilis* (ATCC 9240)  
*Pseudomonas aeruginosa* (ATCC 15442)  
*Salmonella enterica* (ATCC 10708)  
*Staphylococcus aureus* (ATCC 6538)  
*Staphylococcus aureus* Community Acquired Methicillin Resistant (CA- MRSA) (Genotype USA300)  
*Staphylococcus aureus* Community Acquired Methicillin Resistant (CA- MRSA) (Genotype USA400)  
*Staphylococcus aureus* Methicillin Resistant (MRSA) (ATCC 33592)  
*Staphylococcus aureus* Vancomycin Intermediate Resistant (VISA) (HIP 5836)  
*Streptococcus pneumoniae* (ATCC 6305)  
*Streptococcus pyogenes* (ATCC 19615)

This product kills the following bacteria in 2 minutes at 4 oz. per gal. of 400 ppm hard water (1844 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Acinetobacter baumannii* (ATCC 19606)  
*Bordetella pertussis* (ATCC 12743)  
*Enterococcus faecalis* Vancomycin Resistant (VRE) (ATCC 51575)  
*Escherichia coli* (ATCC 11229)  
*Escherichia coli* (Extended Spectrum B-Lactamase) (ESBL) (BAA-196)  
*Klebsiella pneumoniae* (ATCC 4352)  
*Klebsiella pneumoniae* Carbapenem Resistant (BAA-1705)  
*Proteus mirabilis* (ATCC 9240)  
*Pseudomonas aeruginosa* (ATCC 15442)  
*Salmonella enterica* (ATCC 10708)  
*Staphylococcus aureus* (ATCC 6538)  
*Staphylococcus aureus* Community Acquired Methicillin Resistant (CA- MRSA) (Genotype USA300)  
*Staphylococcus aureus* Community Acquired Methicillin Resistant (CA- MRSA) (Genotype USA400)  
*Staphylococcus aureus* Methicillin Resistant (MRSA) (ATCC 33592)  
*Staphylococcus aureus* Vancomycin Intermediate Resistant (VISA) (HIP 5836)  
*Streptococcus pneumoniae* (ATCC 6305)  
*Streptococcus pyogenes* (ATCC 19615)

This product kills the following bacteria in 10 minutes at 2 oz. per 5 gal. of 400 ppm hard water (184 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Bordetella bronchiseptica* (ATCC 10580)  
*Campylobacter jejuni* (ATCC 29428)  
*Corynebacterium ammoniagenes* (ATCC 6872)  
*Enterococcus faecalis* Vancomycin Resistant (VRE) (ATCC 51575)  
*Escherichia coli* O157:H7 (ATCC 35150)  
*Klebsiella pneumoniae* (ATCC 4352)  
*Listeria monocytogenes* (ATCC 19117)  
*Pseudomonas aeruginosa* (ATCC 15442)  
*Salmonella enterica* (ATCC 10708)  
*Salmonella typhi* (ATCC 6539)  
*Shigella sonnei* (ATCC 25931)  
*Staphylococcus aureus* (ATCC 6538)  
*Staphylococcus aureus* Community Acquired Methicillin Resistant (CA MRSA) (Genotype USA400)  
*Staphylococcus aureus* Vancomycin Intermediate Resistant (VISA) (HIP 5836)

**TUBERCULOCIDAL PERFORMANCE:** This product kills the following mycobacteria in 10 minutes at 4 oz. per gal. of 400 ppm hard water (1844 ppm active PAA) and 5% soil at 21°C, on hard, non-porous surfaces:

*Mycobacterium bovis* (Tb) (BCG)

## ORGANISM LIST con't

**VIRUCIDAL\* PERFORMANCE:** This product kills the following viruses in 2 minutes at 2 oz. per gal. of 400 ppm hard water (922 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Enterovirus Type 68 (VR-561)  
Herpes Simplex Type 1 Virus (VR-733)  
Herpes Simplex Type 2 Virus (VR-734)  
Human Immunodeficiency Virus Type 1 (HIV-1) (AIDS Virus) (HTLV- IIIB)  
Influenza A Virus (VR-544) (Hong Kong)  
Respiratory Syncytial Virus (RSV) (VR-26)  
Rhinovirus Type 37 (VR-1147)  
Rotavirus (Strain WA)  
Vaccinia Virus (VR-119)

This product kills the following viruses in 2 minutes at 4 oz. per gal. of 400 ppm hard water (1844 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Adenovirus Type 5 (VR-5) (Strain Adenoid 75)  
Hepatitis B Virus ‡ (HBV) (Duck Hepatitis B Virus)  
Hepatitis C Virus ‡ (HCV) (VR-1422) (Bovine Viral Diarrhea Virus)  
Herpes Simplex Type 1 Virus (VR-733)  
Herpes Simplex Type 2 Virus (VR-734)  
Human Immunodeficiency Virus Type 1 (HIV-1) (AIDS Virus) (HTLV- IIIB)  
Influenza A Virus (VR-544) (Hong Kong)  
Norovirus (Norwalk-like Virus) (Feline Calicivirus) (VR-782)  
Respiratory Syncytial (RSV) Virus (VR-26)  
Rhinovirus Type 37 (VR-1147)  
Rotavirus (Strain WA)  
Vaccinia Virus (VR-119)

‡ Indicates a 5-minute contact time is required for this claim.

This product kills the following viruses in 10 minutes at 2 oz. per 5 gal. of 400 ppm hard water (184 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Avian Influenza A (H5N1) Virus  
Hepatitis B Virus (HBV) (Duck Hepatitis B Virus)  
Herpes Simplex Type 1 Virus (VR-733)  
Herpes Simplex Type 2 Virus (VR-734)  
Human Coronavirus (VR-740)  
Human Immunodeficiency Virus Type 1 (HIV-1) (AIDS Virus) (HTLV- IIIB)

This product kills the following viruses in 10 minutes at 1.5 oz. per 5 gal. of 400 ppm hard water (138 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Avian Influenza A (H5N1) Virus  
Hepatitis B Virus (HBV) (Duck Hepatitis B Virus)  
Herpes Simplex Virus Type 1 (VR-733)  
Herpes Simplex Virus Type 2 (VR-734) Human Coronavirus (VR-740)  
Human Immunodeficiency Virus Type 1 (HIV-1) (AIDS Virus) (HTLV- IIIB)

**ANIMAL PREMISE VIRUCIDAL\* PERFORMANCE:** This product kills the following viruses in 2 minutes at 4 oz. per gal. of 400 ppm hard water (1844 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Canine Parvovirus ‡ (CPV) (VR-2017)  
Murine Norovirus (MNV-1)  
Porcine Epidemic Diarrhea Virus (Clinical Isolate)

‡ Indicates a 5-minute contact time is required for this claim.

This product kills the following viruses in 10 minutes at 2 oz. per 5 gal. of 400 ppm hard water (184 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Avian Adenovirus (VR-280)  
Avian Infectious Bronchitis Virus (Strain Baudette IB42)  
Avian Influenza A (H5N1) Virus  
Infectious Bursal Disease Virus  
Infectious Laryngotracheitis Virus (Strain LT-IVAX)  
Newcastle Disease Virus (VR-108)  
Porcine Respiratory & Reproductive Syndrome Virus (Strain NVSL)  
Porcine Rotavirus (VR-893)  
Pseudorabies Virus (VR-135)  
Transmissible Gastroenteritis Virus (TGE)  
Vesicular Stomatitis Virus (VR-158)

This product kills the following viruses in 10 minutes at 1.5 oz. per 5 gal. of 400 ppm hard water (138 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

Avian Adenovirus (VR-280)  
Avian Infectious Bronchitis Virus (Strain Baudette IB42)  
Avian Influenza A (H5N1) Virus  
Infectious Bursal Disease Virus  
Infectious Laryngotracheitis Virus (Strain LT-IVAX)  
Newcastle Disease Virus (VR-108)  
Porcine Respiratory & Reproductive Syndrome Virus (Strain NVSL)  
Porcine Rotavirus (VR-893)  
Pseudorabies Virus (VR-135)  
Transmissible Gastroenteritis Virus (TGE)  
Vesicular Stomatitis Virus (VR-158)

**FUNGICIDAL PERFORMANCE:** This product is effective against the following organism in 2 minutes at 2 oz. per gal. of 400 ppm hard water (922 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Candida albicans* (ATCC 10231)

This product is effective against the following organisms in 2 minutes at 4 oz. per gal. of 400 ppm hard water (1844 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Candida albicans* (ATCC 10231)  
*Trichophyton interdigitale* (ATCC 9533) (Athlete's foot fungus)

This product is effective against the following organism in 10 minutes at 2 oz. per 5 gal. of 400 ppm hard water (184 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Trichophyton interdigitale* (ATCC 9533) (Athlete's foot fungus)

This product is effective against the following organism in 10 minutes at 1.5 oz. per 5 gal. of 400 ppm hard water (138 ppm active PAA) and 5% soil, on hard, non-porous surfaces:

*Trichophyton interdigitale* (ATCC 9533) (Athlete's foot fungus)

## ORGANISM LIST con't

**FOOD CONTACT SANITIZING PERFORMANCE:** This product is an effective food contact surface sanitizer in 1 minute at 1 oz. per 3 gal., 2 oz. per 6 gal. of 500 ppm hard water (154 ppm active PAA) on hard, non-porous surfaces:

*Aeromonas hydrophila* (ATCC 23213)  
*Clostridium perfringens* - vegetative (ATCC 13124)  
*Enterobacter sakazakii* (ATCC 29544)  
*Escherichia coli* (ATCC 11229)  
*Escherichia coli* O26:H11 (BAA-1653)  
*Escherichia coli* O45:K:H- (ECL 1001)  
*Escherichia coli* O103:K:H8 (ATCC 23982)  
*Escherichia coli* O111:H8 (BAA- 184)  
*Escherichia coli* O121:K:H10 (ECL 39W)  
*Escherichia coli* O157:H7 (ATCC 35150)  
*Klebsiella pneumoniae* (ATCC 4352)  
*Listeria monocytogenes* (ATCC 19111)  
*Salmonella enterica* (ATCC 10708)  
*Salmonella enterica* serotype *enteritidis* (ATCC 4931)  
*Salmonella typhi* (ATCC 6539)  
*Shigella dysenteriae* (ATCC 11835)  
*Shigella sonnei* (ATCC 25931)  
*Staphylococcus aureus* (ATCC 6538)  
*Xanthomonas axonopodis* (Citrus Canker) (ATCC 49118)  
*Yersinia enterocolitica* (ATCC 23715)

This product is an effective food contact surface sanitizer in 1 minute at 1 oz. per 6 gal. of 500 ppm hard water (77 ppm active PAA) on hard, non-porous food contact surfaces:

*Aeromonas hydrophila* (ATCC 23213)  
*Clostridium perfringens*-vegetative (ATCC 13124)  
*Enterobacter sakazakii* (ATCC 29544)  
*Escherichia coli* (ATCC 11229)  
*Escherichia coli* O26:H11 (BAA-1653)  
*Escherichia coli* O45:K:H- (ECL 1001)  
*Escherichia coli* O103:K:H8 (ATCC 23982)  
*Escherichia coli* O111:H8 (BAA- 184)  
*Escherichia coli* O121:K:H10 (ECL 39W)  
*Escherichia coli* O157:H7 (ATCC 35150)  
*Klebsiella pneumoniae* (ATCC 4352)  
*Listeria monocytogenes* (ATCC 19111)  
*Salmonella enterica* (ATCC 10708)  
*Salmonella enterica* serotype *enteritidis* (ATCC 4931)  
*Salmonella typhi* (ATCC 6539)  
*Shigella dysenteriae* (ATCC 11835)  
*Shigella sonnei* (ATCC 25931)  
*Staphylococcus aureus* (ATCC 6538)  
*Yersinia enterocolitica* (ATCC 23715)

## GENERAL MARKETING CLAIMS

<p>This product</p> <ul style="list-style-type: none"><li>• Can be applied through foaming apparatus, and low-pressure sprayer systems. Follow manufacturers' instructions when using this equipment.</li><li>• Contains hydrogen peroxide.</li><li>• Cuts cleaning time.</li><li>• Evaporates completely.</li><li>• Has been designed specifically where housekeeping is of prime importance.</li><li>• Is an economical concentrate that can be diluted for use with a mop and bucket, cloth, microfiber cloth, sponge, coarse spray device or by soaking.</li></ul>	<p>This product</p> <ul style="list-style-type: none"><li>• Is for use on floors, walls, tile, cages, crates, mats, litter boxes, floor coverings, or any hard, non-porous surfaces soiled by a pet.</li><li>• Leaves no visible residue.</li><li>• Makes cleaning easier.</li><li>• May cause bleaching of treated surfaces, test commodity if unsure.</li><li>• Will control unpleasant malodors and odors.</li><li>• Will not harm sealed stone, sealed grout, or glazed tile.</li><li>• Will not harm most surfaces.</li><li>• Will not leave a grit or soap scum.</li></ul>	<ul style="list-style-type: none"><li>• Clear formula.</li><li>• Clear drying formula</li><li>• Formulated for effective poultry sanitation.</li><li>• Formulated for effective swine premise sanitation.</li><li>• Good for use with microfiber cloths.</li><li>• No harsh alcohol smell.</li><li>• No harsh bleach smell.</li><li>• No rinsing.</li><li>• Non-abrasive.</li><li>• Non-abrasive formula will not harm or scratch surfaces.</li><li>• Non-dulling formula eliminates the time and labor normally required for rinsing.</li></ul>
--	--	--

- Closed loop automated dispensing reduces employee exposure to concentrate product.
- Closed loop automated dispensing reduces the risk of spills.
- Use this product to treat hard, non-porous multi-touch surfaces responsible for cross-contamination.
- For use on interior hard, non-porous surfaces of water softeners, reverse osmosis units, ice machines, water coolers, water holding tanks and pressure tanks and exhaust fans, refrigerated storage and display equipment, coils and drain pans of air conditioning, refrigeration equipment and heat pump.

## CLEANING AND DEODORIZATION MARKETING CLAIMS

### This product

- Eliminates odors leaving surfaces smelling clean and fresh.
- Removes and eliminates odors caused by bacteria and non-fresh foods leaving restroom and kitchen surfaces smelling clean and fresh.
- Can be used for daily cleaning.
- Can be used where odors are a problem.
- Cleans and shines by removing dirt, grime and food soils in food preparation and processing areas, everyday kitchen messes, non-food contact kitchen surfaces and food preparation areas.
- Cleans by removing dirt, grime, blood, urine, fecal matter and other common soils found in animal housing facilities, livestock, swine or poultry facilities, grooming facilities, farms, kennels, pet stores, veterinary clinics, laboratories or other small animal facilities.
- Cleans rodent soiled areas.
- Controls, reduces, eliminates, neutralizes and destroys odors to make your home, kitchen and bathroom sanitary.
- Cuts through tough grease and grime.
- Deodorizes.
- Deodorizes by killing microorganisms that cause offensive odors.

### This product

- Deodorizes hard, non-porous surfaces in restroom areas, behind and under sinks and counters, garbage cans and garbage storage areas, and other places where bacterial growth can cause malodors Deodorizes hard, non-porous surfaces by killing microorganisms that cause offensive odors.
- Is a floor cleaner.
- Is a one-step cleaner.
- Is for use in work areas such as tool rooms and garages for odor control and light duty cleaning.
- Is for non-scratch cleaning of showers and tubs, shower doors and shower curtains.
- Is formulated to provide effective cleaning strength that will not dull high gloss floor finishes with repeated use.
- Kills odor-causing bacteria.
- Maximizes labor results by effectively controlling odors.
- Neutralizes musty odors and tough odors from smoke, pet accidents, and spills on contact.
- Provides long lasting freshness against tough pet odors such as odors from litter boxes and pet accidents.
- Provides effective cleaning strength that will not dull most metal-interlock floor finishes and does not require a rinse prior to recoat.
- Removes dirt.
- Removes stains.

### This product removes and/or cleans

- |                                    |                        |             |
|------------------------------------|------------------------|-------------|
| • Bathtub ring                     | • Blood                | • Body oils |
| • Dirt                             | • Fecal Matter         | • Grime     |
| • Laboratory stains                | • Other organic matter | • Urine     |
| • Other common soils and/or stains |                        |             |



## SANITIZATION MARKETING CLAIMS

This product

- Eliminates and kills 99.999% of bacteria commonly found on kitchen surfaces in 60 seconds.
- Has demonstrated greater than 99.999% reduction of organisms after 60 seconds exposure period in the AOAC Germicidal and Detergent Sanitizing Action of Disinfectants test.
- Is a food contact surface sanitizer on hard, non-porous surfaces.
- Is effective as a sanitizer when solution is prepared in water of up to 500 ppm hardness as CaCO<sub>3</sub> on hard, non-porous non-food contact surfaces.
- Is for use as a sanitizer in bottling and beverage dispensing equipment, beer fermentation and holding tanks, sanitary filling of bottles and cans in the final rinse application, and for external spraying of filling and closing machines and in wineries for use on holding tanks, floors and processing equipment.
- Is for use as a food grade egg shell sanitizer, with best results achieved in water temperatures ranging from 78° – 110° F.
- Kills 99.999% of bacteria like *Escherichia coli*, *Escherichia coli* O157:H7, *Staphylococcus aureus*, *Listeria monocytogenes*, *Yersinia enterocolitica* and *Shigella dysenteriae* on food contact kitchen surfaces in 60 seconds.
- Sanitizes hard, non-porous kitchen surfaces, bathroom surfaces and floors.
- *Escherichia coli* (*E. coli*), *Salmonella enterica* (*Salmonella*), and *Staphylococcus aureus* (*Staph*) are common germs found where food is prepared and stored.
- Regular, effective cleaning and sanitizing of equipment utensils and work or dining surfaces which could harbor food poisoning microorganisms minimizes the probability of contaminating food during preparation, storage or service. Effective cleaning will remove soil and prevent the accumulation of food residues, which may decompose or support the rapid development of food poisoning organisms or toxins. Application of effective sanitizing procedures reduces the number of those microorganisms which are present on equipment and utensils after cleaning, and reduces the potential for the transfer, either directly through tableware such as glasses, cups and flatware or indirectly through food.
- To reduce cross contamination on treated hard, non-porous surfaces, kitchenware and food contact surfaces of equipment must be washed, rinsed with potable water and sanitized after each use and following any interruption of operation during which time contamination may have occurred.
- Use this product to sanitize hard, non-porous surfaces of food processing equipment, dairy equipment, food utensils, dishes, silverware, glasses, sink tops, countertops, refrigerated storage areas and display equipment and other hard, non-porous surfaces.
- Where equipment and utensils are used for preparation of foods on a continuous or production line basis, utensils and hard, non-porous food contact surfaces of equipment must be washed, rinsed and sanitized at intervals throughout the day on a schedule based on food temperature, type of food and amount of food particle accumulation.

## LOCATIONS/SURFACES

<p>This product is for use on hard, non-porous surfaces in</p> <ul style="list-style-type: none"> <li>• Institutional, commercial, industrial, institutions, commercial sites, industrial sites, institutional facilities, public places</li> <li>• Breweries, canneries, cheese factories</li> <li>• Bottle washing premises</li> <li>• Federally inspected meat and poultry plants</li> <li>• Food establishments, coffee shops, donut shops, bagel stores, pizza parlors, liquor stores, wineries</li> <li>• Food handling and processing areas</li> <li>• Food processing plants, USDA inspected food-processing facilities, federally inspected meat and poultry plants, egg processing plants, poultry and turkey farms, farms, dairy farms, hog farms, meat/poultry processing plants, rendering plants, poultry and animal dressing plants, canneries, meat packing plants, hide and leather processing plants</li> <li>• Processing facilities for fish, milk, citrus, wine, fruit, vegetable, ice cream and potato and beverage plants</li> <li>• Restaurants, bars, kitchens, taverns, cafeterias, institutional kitchens, fast food operations, food storage areas, catering, bakeries</li> </ul>	<p>For use on</p> <ul style="list-style-type: none"> <li>• Equipment, pipelines, tanks, vats, filters, evaporators, pasteurizers, and aseptic equipment in dairies, breweries, wineries, beverage and food processing/packing plants, and egg processing/packing equipment surfaces</li> <li>• Beer fermentation and holding tanks, bottling or pre-mix dispensing equipment</li> <li>• Wine processing equipment and holding tanks</li> <li>• Ice machines</li> <li>• Slurpee® machines, drinking fountains</li> <li>• Meat packing plant surfaces such as livestock vehicles and holding pens, receiving areas and delivery chutes, slaughter areas and conveyors, hand, rub and guide rails, post knock cabinets, stands and flooring surfaces, chains and moving process lines, chutes, conveyors, tallow and animal feed production surfaces, processed product and offal equipment surfaces, fabrication and processing areas covering cold storage areas, stainless steel cut out and prep tables, and other stainless surfaces</li> <li>• Dishes, glassware, silverware, cooking utensils, eating utensils, plastic and other hard, non-porous cutting boards, plastic and other hard, non-porous chopping blocks, coolers, ice chests, refrigerator bins used for meat, vegetables, fruit and eggs, Tupperware®</li> </ul>	<p>For use on</p> <ul style="list-style-type: none"> <li>• Hard, non-porous surfaces in food preparation and storage areas</li> <li>• Kitchen equipment such as food processors, blenders, cutlery, trash compactors and other utensils</li> <li>• Countertops, countertop laminates, stoves, bathroom sinks, kitchen sinks, tub surfaces, shelves, racks, carts, appliances, refrigerators, ice machines, microwave ovens</li> <li>• Glass surfaces, aluminum, laminated surfaces, metal, plated steel, stainless steel, glazed porcelain, glazed tile, glazed ceramic, sealed granite, sealed marble, plastic such as polycarbonate, polyvinylchloride, polystyrene or polypropylene, sealed limestone, sealed slate, sealed stone, sealed terra cotta, sealed terrazzo, chrome, Plexiglas®, enameled surfaces, painted and finished woodwork, Formica®, vinyl and plastic upholstery, washable wallpaper, windows, mirrors, painted surfaces</li> <li>• Floors, finished floors, high speed burnished floors, conductive flooring, walls, ceilings, fixtures</li> <li>• Shower stalls, shower doors and curtains, bathtubs and glazed tiles, chrome plated intakes, vanity tops, and restroom fixtures, bathroom fixtures, bathroom bowls, basins, tubs</li> <li>• And other hard, non-porous surfaces</li> </ul>
---	---	--

- This product is for use in federally inspected meat and poultry plants on all hard, non-porous surfaces in inedible product processing areas, non-processing areas and/or exterior areas, federally inspected meat and poultry plants as a floor and wall cleaner for use in all departments, and federally inspected meat and poultry plants as a disinfectant agent for use in all departments and kills bacteria and helps reduce cross-contamination on treated hard, non-porous non-food contact kitchen surfaces listed on this label.

This product is for use on hard, non-porous surfaces in

- Veterinary, veterinary clinics, animal life science laboratories, animal laboratories, animal research centers, animal quarantine areas, animal holding areas, equine farms, animal kennels, animal breeding facilities, breeding establishments, animal husbandry establishments, grooming establishments, pet animal quarters, animal housing facilities, zoos, tack shops, pet shops, operating rooms, washing areas, waiting rooms, examination rooms and other animal care facilities
- Dairy, equine, poultry/turkey farms
- Farmhouses, barns, sheds, tool sheds, cattle barns, swine barns, sheep barns and horse barns, pens and stalls, swine quarters, livestock farms, equine quarters, brooder houses, seed houses and veal, calving, hog, cattle and horse operations, chick vans, egg trucks, hatchery and farm vehicles
- Poultry premises (hatcheries):

Egg receiving area	Tray dumping area	Chick processing area
Egg holding area	Chick holding area	Chick loading area
Setter room	Hatchery room	Poultry buildings
- Swine premises:

Farrowing barns and areas	Dressing plants	Blocks
Waterers and feeders	Loading equipment	Creep area
Hauling equipment	Nursery	Chutes area
- For use in kennel runs, cages, kennel/cage floors, conductive flooring, examination tables, veterinary x-ray tables, loading platforms and animal equipment.
- For use in hatchers, setters, trays, racks, egg flats, chick boxes, egg cases, vans and trash containers, seed houses, poultry/turkey equipment, carts, sexing tables, and automated tray, rack and buggy washers, egg receiving and egg holding areas.

## DISINFECTION MARKETING CLAIMS

This product

- Can be used to disinfect, clean and deodorize terrarium and small animal cages, substrate and other hard, non-porous cage equipment, furniture, plastic terrarium ornaments, heat caves and water dishes. (Do not use on porous rocks, hot rocks, or driftwood.)
- Has demonstrated effectiveness against Influenza A Virus.
- Is a broad-spectrum disinfectant that has been shown to be effective against Influenza A (H1N1) and other Influenza A viruses on hard, non-porous, non-food contact surfaces.
- Is a versatile disinfectant & sanitizer for veterinarian, veterinary practice, animal care, animal laboratory, and agricultural and farm premise applications.
- Kills Avian Influenza A Flu Virus (H5N1) (H1N1).

This product is for use on hard, non-porous surfaces in kitchens and bathrooms and other household areas.

This product

- Cleans, disinfects and deodorizes on hard, non-porous surfaces.
- Cleans, disinfects and deodorizes hard, non-porous surfaces by killing many odor-causing microorganisms.
- Cleans, disinfects and eliminates odors leaving hard, non-porous surfaces smelling clean and fresh.
- Cleans, disinfects and deodorizes hard, non-porous surfaces by killing odor-causing microorganisms.
- Cleans, disinfects and deodorizes hard, non-porous surfaces in one step with no rinsing required.
- Cleans, shines, deodorizes and disinfects all hard, non-porous surfaces listed on the label.
- Has been formulated to aid in the reduction of cross-contamination on hard, non-porous treated surfaces not only in hospitals, but also in schools, institutions and industry.

This product

- Is a disinfectant for cleanroom and laboratory areas to disinfect washable, hard, non-porous, non-food contact surfaces such as: laminar-airflow equipment and BioSafety cabinet work surfaces and exterior surfaces of the following: countertops, sinks, plumbing fixture surfaces, and incubators, refrigerators and centrifuge surfaces of metal, stainless steel, glass, plastic, such as polystyrene or polypropylene, Formica®, and vinyl.
- Is a heavy duty disinfectant cleaner that cleans, disinfects and deodorizes in one labor saving step.
- Is a multi-surface cleaner, deodorizer and disinfectant.
- Kills common germs, bacteria and viruses.
- Kills, eliminates, removes and destroys germs, bacteria and viruses on hard, non-porous surfaces.
- May be used to clean and disinfect finished floors.

This product is an economical concentrated disinfectant designed for daily cleaning and easy on surfaces.

This product is a multi-surface cleaner disinfectant and a proven "one-step" disinfectant – virucide\* which is effective in water up to 400 ppm hardness in the presence of 5% serum contamination.

This product is for use on hard, non-porous surfaces in bathrooms, restrooms, shower rooms, shower and bath areas.

This product

- Cleans, disinfects and eliminates odors leaving hard, non-porous surfaces smelling clean and fresh.
- Disinfects and sanitizes bathroom surfaces and floors.
- Is a bowl and bathroom cleaner, which cleans, disinfects and deodorizes.
- May be used to clean and disinfect floor areas, sinks, faucets, bathrooms and tubs.



## **WATER TREATMENT USE SITES – Not for use in CA**

For use in

- Commercial recirculating cooling water towers (Not for use in cooling towers, water cooling systems in CA.)
- Auxiliary water systems and waste systems.
- Commercial recirculating cooling water towers.
- Industrial and/or commercial recirculating cooling towers.
- Recirculating cooling water systems
- Retort water systems
- Waste water systems
- Water cooling systems

## **WATER TREATMENT MARKETING CLAIMS (Not for use in CA)**

- This product is an antimicrobial agent for use in oilfield and gas field well operations, oil field water flood/salt water disposal systems, fracturing fluids, and is a water treatment microbiocide that will control algae and bacterial slimes found in recirculating cooling tower waters and oil field water flood.
- This product is a water treatment microbiocide for industrial and/or commercial recirculating cooling water towers, retort water systems and oil field water flood/salt water disposal systems and fracturing fluids and controls algae and algal slime growth in industrial and/or commercial recirculating cooling water towers.
- This product is for bacteria, slime, odor and algae control in: recirculating cooling water and evaporative coolers, reverse osmosis, nano and ultrafiltration and agricultural waters and is a microbiocide that helps clean and loosen slime debris from cooling and flooding system surfaces.
- This product is for thermal processing/pasteurizing operations within farms, soft drink and food canning plants to reduce the number of living algae, bacteria and fungi. Do not use in any system which may come in contact with food.
- This product aids in the control of bacterial, fungal and algal slimes in evaporative condensers, heat exchange water systems, industrial and commercial cooling towers. To control algae and bacterial slimes, use this water treatment microbiocide as directed.

## **WATER TREATMENT USE SITES (Not for use in CA)**

For use in

- Drilling, completion and workover fluids systems.
- Gas production and transmission pipelines and systems.
- Gas storage wells and systems.
- Hydrotesting facilities.
- Oil field water flood/salt water disposal systems and fracturing fluid systems.
- Oil field injection and waste water.
- Packer fluid systems.
- Pipeline pigging and scraping operations.

For use in

- Paper manufacturing
- Pulp and paper mills water process systems
- Pulp and Paper Systems



## LOCATIONS/SURFACES

- This product is for use on hard, non-porous surfaces in tobacco plant premises.
- For use on commercial florist pots, flats and flower buckets, work areas and benches, maintenance equipment, citrus processing equipment and holding tanks, harvesting & handling equipment and tobacco plant equipment.
- This product cleans, disinfects and deodorizes hard, non-porous surfaces such as flower buckets, walls, floors of coolers, shippers, greenhouse packing areas, garbage pails, design and packing benches, and countertops, and other areas where obnoxious odors develop, and is a versatile disinfectant & sanitizer for veterinarian, veterinary practice, animal care, animal laboratory, and agricultural and farm premise applications.

## POST-HARVEST MARKETING CLAIMS

- This product can also be used to control the growth of spoilage and decay-causing bacterial and fungal diseases on post-harvest fruits and vegetables.
- For post-harvest applications, to control the growth of spoilage and decay-causing bacterial and fungal diseases on fruits and vegetables, spray or submerge in the resulting solution for a minimum contact time of 30 seconds, followed by adequate draining.
- Use this product for treatment of waters, used in handling, processing, packing and storage of raw fruits and vegetables to control the growth of spoilage and decay-causing bacterial and fungal diseases.

## PACKAGING CLAIMS

This product is

- Concentrated.
- Easy to Use.
- Is for use in automated dilution systems and dilution systems.
- Fewer products – no need for separate deodorizer.
- Squeeze, measure and pour.



## DIRECTIONS FOR USE

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

Please read entire label and use strictly in accordance with precautionary statements and directions.

Before using this product, in federally inspected meat and poultry food processing plants and dairies, food products and packaging materials must be removed from the room or carefully protected.

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

**AGRICULTURAL USE REQUIREMENTS:** Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 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 section (box) only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is: coveralls worn over long sleeved shirt and long pants, waterproof gloves, chemical-resistant shoes plus socks, and protective eyewear.

### NON-AGRICULTURAL USE REQUIREMENTS:

The requirements in this section apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children and pets out of the treated area until sprays have dried.

**DILUTION TABLE**

USE	DILUTION	CONTACT TIME
<b>FOR SPORICIDAL CLAIMS AGAINST C. DIFFICILE SPORES</b>		
1844 ppm active PAA	4 oz. / gal. water	2 minutes
<b>FOR HOSPITAL OR MEDICAL ENVIRONMENT DISINFECTION CLAIMS</b>		
922 ppm active PAA	2 oz. / gal. water	2 minutes
1844 ppm active PAA	4 oz. / gal. water	2 minutes
184 ppm active PAA	2 oz. / 5 gal. water	10 minutes
<b>FOR GENERAL OR BROAD SPECTRUM DISINFECTANT CLAIMS</b>		
138 ppm active PAA	1.5 oz. / 5 gal. water	10 minutes
<b>FOR TUBERCULOCIDAL CLAIMS</b>		
1844 ppm active PAA	4 oz. / gal. water	10 minutes
<b>FOR PUBLIC HEALTH VIRUCIDAL* CLAIMS</b>		
922 ppm active PAA	2 oz. / gal. water	2 minutes
1844 ppm active PAA	4 oz. / gal. water	2 minutes
1844 ppm active PAA (HBV, HCV)	4 oz. / gal. water	5 minutes
184 ppm active PAA	2 oz. / 5 gal. water	10 minutes
138 ppm active PAA	1.5 oz. / 5 gal. water	10 minutes
<b>FOR ANIMAL VIRUCIDAL* CLAIMS</b>		
1844 ppm active PAA	4 oz. / gal. water	2 minutes
1844 ppm active PAA (Canine Parvovirus)	4 oz. / gal. water	5 minutes
184 ppm active PAA	2 oz. / 5 gal. water	10 minutes
138 ppm active PAA	1.5 oz. / 5 gal. water	10 minutes
<b>FOR FOOD CONTACT SANITIZING CLAIMS</b>		
77 ppm active PAA	1 oz. / 6 gal. water	1 minute
154 ppm active PAA	1 oz. / 3 gal. water	1 minute
154 ppm active PAA	2 oz. / 6 gal. water	1 minute
500 ppm active PAA	6.5 oz. / 6 gal. water	1 minute
<b>FOR FUNGICIDAL CLAIMS</b>		
922 ppm active PAA	2 oz. / gal. water	2 minutes
1844 ppm active PAA	4 oz. / gal. water	2 minutes
184 ppm active PAA	2 oz. / 5 gal. water	10 minutes
138 ppm active PAA	1.5 oz. / 5 gal. water	10 minutes
<b>FOR DEODORIZING CLAIMS</b>		
922 ppm active PAA	2 oz. / gal. water	2 minutes

## SANITIZING

### FOOD CONTACT SURFACE AND TOBACCO PROCESSING EQUIPMENT SANITIZING DIRECTIONS

**For Mechanical Operations:** Prepared use solution cannot be reused for sanitizing.

**For Manual Operations:** Fresh cleaning solutions must be prepared daily or more often, if the solution becomes visibly diluted or soiled.

Prior to application, remove gross food particles and soil by a pre-flush or pre-scrape and when necessary, presoak. Then thoroughly wash or flush objects with a good detergent or compatible cleaner, followed by a potable water rinse before applications of the sanitizing solution.

### FOOD CONTACT SANITIZING DILUTION TABLE FOR HARD, NON-POROUS FOOD CONTACT SURFACES, PUBLIC EATING PLACES, DAIRY PROCESSING EQUIPMENT, FOOD PROCESSING EQUIPMENT AND UTENSILS:

To prepare a 77, 154, or 500 ppm active PAA solution use the following dilution table. Prepare the correct dilution rate based upon the appropriate use site.

FOOD CONTACT SANITIZING DILUTION TABLE

Active PAA Solution	1 gal.	6 gal.	10 gal.	20 gal.
77 ppm	0.17 oz.	1 oz.	1.7 oz.	3.4 oz.
154 ppm	0.34 oz.	2 oz.	3.4 oz.	6.7 oz.
500 ppm	1.08 oz.	6.5 oz.	10.8 oz.	21.7 oz.

### FOOD CONTACT SANITIZING PERFORMANCE FOR PUBLIC EATING PLACES, DAIRY PROCESSING EQUIPMENT AND FOOD PROCESSING EQUIPMENT, UTENSILS AND OTHER HARD, NON-POROUS FOOD CONTACT SURFACES IN FOOD PROCESSING LOCATIONS, MEAT PLANTS, DAIRIES, BAKERIES, CANNERIES, BEVERAGE PLANTS, RESTAURANTS AND BARS DIRECTIONS (REGULATED BY 40 CFR 180.940(a)(c):

Immerse pre-cleaned glassware, dishes, silverware, cooking utensils and other similar size food processing equipment in a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution) for at least 1 minute. Allow sanitized surfaces to adequately drain before contact with food so that little or no residue remains. Do not rinse.

For articles too large for immersing, apply a use solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution) to sanitize hard, non-porous food contact surfaces with a brush, cloth, mop, sponge, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Surfaces must remain wet for at least 1 minute. Allow sanitized surfaces to adequately drain before contact with food so that little or no residue remains. Do not rinse.

Prepare a fresh solution daily or when visibly dirty. For mechanical application, use solution must not be reused for sanitizing applications but may be used for other purposes such as cleaning.

### U.S. PUBLIC HEALTH SERVICE FOOD SERVICE SANITIZATION RECOMMENDATIONS CLEANING AND SANITIZING

1. Thoroughly wash equipment and utensils in a hot detergent solution.
2. Rinse utensils and equipment thoroughly with potable water.
3. Sanitize equipment and utensils by immersion in 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) for at least 1 minute at a temperature of 75°F.
4. For equipment and utensils too large to sanitize by immersion, apply use solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) by rinsing, spraying or swabbing until thoroughly wetted for 1 minute. Do not breathe spray.
5. Allow sanitized surfaces to adequately drain before contact with food. Do not rinse.
6. Prepare a fresh solution daily or when visibly dirty.



**WISCONSIN STATE DIVISION OF HEALTH DIRECTIONS FOR EATING ESTABLISHMENTS**

1. Scrape and pre-wash hard, non-porous utensils and glasses whenever possible.
2. Wash with a good detergent or compatible cleaner.
3. Rinse with potable water.
4. Sanitize in a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA). Immerse all utensils for at least 1 minute or for contact time specified by governing sanitary code.
5. Place sanitized utensils on a rack or drain board to air-dry.
6. Prepare a fresh solution daily or when visibly dirty.

**Note:** A clean potable water rinse following sanitization is not permitted under Section HFS 196, Appendix 7-204.11 of the Wisconsin Administrative Code (reference 40 CFR 180.940(a)).

**SANITIZING OF REFRIGERATED FOOD PROCESSING EQUIPMENT AND OTHER HARD, NON-POROUS SURFACES IN FOOD CONTACT LOCATIONS:**

For sanitizing food processing equipment, dairy equipment, refrigerated storage and display equipment and other hard, non-porous food contact surfaces, surfaces must be thoroughly pre-flushed or pre-scraped and, when necessary, presoaked to remove gross food particles.

1. Turn off refrigeration. (**Note:** Use this direction only if applicable.)
2. Unit must be washed with a compatible detergent and rinsed with potable water before sanitizing. (**Note:** Use this direction only if applicable.)
3. Apply a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution) by direct pouring, by circulating through the system, or by coarse pump or trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Surfaces must remain wet for at least 1 minute.
4. Allow sanitized surfaces to adequately drain before contact with food/liquid. Do not rinse. Return machine to service.
5. Prepare a fresh solution daily or when visibly dirty.

**SANITIZATION OF INTERIOR HARD, NON-POROUS SURFACES OF ICE MACHINES, WATER COOLERS, WATER HOLDING TANKS AND PRESSURE TANKS:**

**Ice Machines** - Sanitization must occur after initial installation, after the machine is serviced and periodically during its use.

1. Shut off incoming water line to machine and turn off refrigeration.
2. Wash with a compatible detergent and rinse with potable water before sanitizing. (**Note:** Use this direction only if applicable.)
3. Apply a solution of 1 oz. - 6 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution) by mechanical spray, direct pouring, or by circulating through the system.
4. Allow surfaces to remain wet or solution to remain in equipment for at least 1 minute. Drain thoroughly before reuse and allow sanitized surfaces to adequately drain before contact with liquid.
5. Return machine to normal operation.

**Water Coolers, Water Holding Tanks and Pressure Tanks** - Sanitization must occur after initial installation, after the system is serviced and periodically during its use.

1. Shut off incoming water line.
2. Units/Tanks must be washed with a compatible detergent and rinsed with potable water before sanitizing. (**Note:** Use this direction only if applicable.)
3. Prepare a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution). Apply and/or circulate solution to wet all hard, non-porous surfaces for a minimum contact of 1 minute.
4. Allow sanitized surfaces to adequately drain before contact with liquid. Do not rinse.
5. Return to service by opening incoming water lines.



**CLOSED LOOP CIRCULATION SANITIZING - FOOD PROCESSING EQUIPMENT FLOW/PRESSURE METHOD:**

1. Disassemble equipment and thoroughly clean after use.
2. Assemble equipment into operational position prior to sanitizing.
3. Prepare a sanitizing solution equal to 110% of the volume capacity of the equipment by diluting 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution).
4. Pump the solution through the system until full flow is obtained at all extremities and the system is completely filled with sanitizer and all air is removed. Surfaces must remain wet for at least 1 minute.

**CLEAN-IN-PLACE (CIP) METHOD FOR DAIRY, DAIRY FARM AND FOOD PROCESSING FACILITIES:**

1. Thoroughly flush, clean and potable water rinse the system.
2. Prepare required volume of sanitizer solution needed by diluting 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) (or equivalent use dilution).
3. To sanitize entire system by circulation methods, run pumps for at least 2 minutes to thoroughly wet and sanitize all parts of the system.

**REVERSE OSMOSIS (RO), NANO, AND ULTRA FILTRATION CLEANING-SANITIZATION:**

This product is used in the sanitization of nano filtration (NF) and ultra-filtration (UF) and reverse osmosis (RO) membranes and their associated piping systems. This product is to be added continuously in food, beverage, and drinking water systems for RO (reverse osmosis) systems only in accordance with the instructions below. This product is not for use in kidney dialysis equipment. This product will not totally eliminate all vegetative microorganisms in RO, or NF or UF membranes and their associated piping systems due to their construction or assembly, but can be relied upon to reduce the number of microorganisms to acceptable levels when used as directed. Prior to using this product check with membrane manufacturer to confirm compatibility of membranes with various types of concentrations of peroxyacetic acid solutions.

**Batch Sanitization of NF, UF and RO Systems:**

Isolate incompatible equipment, such as carbon filters and ion exchangers. Clean system with an appropriate cleaner and follow with RO permeate water or potable water. Remove mineral deposits if necessary with an acidic cleaner, and rinse as before. Fill entire system with water and add up to 1% of this product by volume (590 ppm active PAA) for heavily fouled systems. The typical sanitation use solution dosing of this product is 1 - 2 oz. of this product per 5 gal. of water (92 - 184 ppm active PAA) (or equivalent use-dilution). Recirculate the sanitizing solution through the piping and membrane system at 20° C for 10 minutes minimum, or up to 4 hours, depending on the severity of cleaning to be done. Open and close process valves and solenoids to be sure all parts are in contact with the solution. For occasional intermittent feed, do not exceed 1 oz. of this product per 5 gal. of feed water (92 ppm active PAA). Do not use the intermittent feed method for on-line use of potable water or direct food contact systems. Rinse the system with RO permeate or potable water until residual per oxygen concentration is below 1 ppm.

**RO Continuous or Intermittent Addition:**

For continuous addition methods for RO systems, use 2 - 5 oz. of this product per 430 gal. of process water (2 - 5 ppm active PAA) (or equivalent use-dilution). For occasional intermittent feed, do not exceed 1 oz. of this product per 5 gal. of feed water (92 ppm active PAA). Do not use intermittent feed method for on-line use in potable water or direct food contact systems.

**BEVERAGE DISPENSING AND SANITARY FILLING EQUIPMENT SANITIZER DIRECTIONS:**

For sanitizing of hard, non-porous bottling or pre-mix dispensing equipment and bottles or cans in the final rinse application. This product is to be proportioned into the final rinse water line of the container washer or rinser for the exterior application for the filler and closing machine. Fill equipment with a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA). Surfaces must remain wet for at least 1 minute or until operations resume at which time the sanitizing solution must be drained from the system. Allow sanitized surfaces to adequately drain before contact with liquid. Do not rinse.

**FINAL SANITIZING BOTTLE RINSE:**

This product may be used as a final sanitizer rinse, followed by adequate draining for returnable and non-returnable bottles at 1.1 - 6.5 oz. of this product to 6 gal. of water (82 - 500 ppm active PAA) (or equivalent use-dilution).



**ANTIMICROBIAL RINSE OF PRECLEANED OR NEW RETURNABLE OR NON- RETURNABLE CONTAINERS:**

To reduce the numbers of beverage spoilage organisms, use 1.1 - 6.5 oz. of this product to 6 gal. of water (82 - 500 ppm active PAA) (or equivalent use-dilution) at a temperature range of 115° - 140°F for 30 seconds. Higher dilutions of 1 oz. of this product per gal. of water are effective at 140°F. After adequate draining, rinse interior containers surfaces with sterile or potable water.

**BEER FERMENTATION AND MILK STORAGE TANK SANITIZER DIRECTIONS:**

For sanitizing hard, non-porous beer fermentation and holding tanks, wine, citrus, milk and food processing storage and holding tanks. Wash with a compatible detergent and rinse with potable water before sanitizing. Prepare a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) for mechanical or automated systems. Follow manufacturers' directions for use for application equipment. Surfaces must remain wet for at least 1 minute. Allow sanitized surfaces to adequately drain before contact with food/liquid. Do not rinse. For mechanical operations or automated systems, the used sanitizing solution must not be reused.

**SANITIZING EGG SHELLS INTENDED FOR FOOD DIRECTIONS:**

To sanitize previously cleaned food-grade eggs in shell egg and egg product processing plants, spray with a solution of 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA). The solution must be warmer than the eggs, but not to exceed 130°F. Wet eggs thoroughly and allow solution to drain. Eggs sanitized with this product must be subjected to a potable water rinse only if they are to be broken immediately for use in the manufacture of egg products. Eggs must be reasonably dry before casing or breaking. The solution must not be re-used for sanitizing eggs. Do not breathe spray.

**Note:** Only clean, whole eggs can be sanitized. Dirty, cracked or punctured eggs cannot be sanitized.

**FOR TREATMENT OF MEAT, SEAFOOD AND POULTRY, FRUIT AND VEGETABLE, NUTS OR TOBACCO PROCESSING PLANT(S), CONVEYORS, BELTS:**

Remove gross food particles and excess soil by a pre-flush or pre-scrape. Wash with a good detergent or compatible cleaner. Rinse equipment thoroughly with potable water and then rinse equipment with a sanitizing solution. During processing apply 1 oz. - 6.5 oz. of this product per 6 gal. of water (77 ppm - 500 ppm active PAA) to conveyors with suitable feeding equipment. Do not allow this solution to be sprayed directly on food. Controlled volumes of sanitizer are applied to return portion of conveyor through nozzles so located as to permit maximum drainage of sanitizer from equipment and to prevent puddles on top of belt. During interruptions in operation, apply solution using coarse spray equipment to peelers, collators, slicers and saws, and other non-porous conveyor equipment. Allow surfaces to remain wet for at least 1 minute. Conveyors and other equipment must be free of product when applying this coarse spray. Do not breathe spray.

## FUNGICIDAL

### TO KILL FUNGI:

1. Pre-clean heavily soiled areas.
2. Prepare use solution by adding 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent dilution) at 2 minutes.
3. Apply use solution to hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
4. Treated surfaces must remain wet for 2 minutes.
5. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be coated with finish or restorer.
6. Prepare a fresh solution daily or when visibly dirty.

(OR)

1. Pre-clean heavily soiled areas.
2. Prepare use solution by adding 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent dilution) at 2 minutes.
3. Apply use solution to hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
4. Treated surfaces must remain wet for 2 minutes.
5. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be coated with finish or restorer.
6. Prepare a fresh solution daily or when visibly dirty.

(OR)

1. Pre-clean heavily soiled areas.
2. Prepare use solution by adding 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) at 10 minutes.
3. Apply use solution to hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
4. Treated surfaces must remain wet for 10 minutes.
5. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be coated with finish or restorer.
6. Prepare a fresh solution daily or when visibly dirty.

(OR)

1. Pre-clean heavily soiled areas.
2. Prepare use solution by 2 oz. of this product per 5 gal. of water (184 ppm of active PAA) (or equivalent use-dilution) at 10 minutes.
3. Apply use solution to hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
4. Treated surfaces must remain wet for 10 minutes.
5. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be coated with finish or restorer.
6. Prepare a fresh solution daily or when visibly dirty.



## ANIMAL PREMISES

Prior to use of this product, remove all animals, poultry and feed from premises, areas to be treated, animal transportation vehicles, trucks, cars, and enclosures, coops, crates, kennels, stables. Remove all litter, droppings and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other surfaces of facilities and fixtures occupied or traversed by poultry or other animals. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean surfaces with soap or detergent and rinse with water.

### FOR USE AS AN ANIMAL PREMISE DISINFECTANT/VIRUCIDE\*:

- For heavily soiled areas, a pre-cleaning step is required. Apply a use solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution). to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Immerse all halters and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure in the use solution. Treated surfaces must remain wet for 2 minutes at (1844 ppm active PAA). Ventilate buildings, coops and other closed spaces. Do not house animals, poultry, livestock or employ equipment until treatment has been absorbed, set or dried. Thoroughly scrub all treated feed racks, troughs, automatic feeders, fountains and waterers and other treated equipment which can contact food or water with soap or detergent, and rinse with potable water before reuse.

\*For use against Canine Parvovirus, prepare a use solution of 4 oz. of this product per gal. of water (or equivalent use-dilution) at 5 minutes.

- For heavily soiled areas, a pre-cleaning step is required. Apply a use solution of 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Immerse all halters and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure in the use solution. Treated surfaces must remain wet or 10 minutes at (138 ppm active PAA). Ventilate buildings, coops and other closed spaces. Do not house animals, poultry, livestock or employ equipment until treatment has been absorbed, set or dried. Thoroughly scrub all treated feed racks, troughs, automatic feeders, fountains and waterers and other treated equipment which can contact food or water with soap or detergent, and rinse with potable water before reuse.
- For heavily soiled areas, a pre-cleaning step is required. Apply a use solution of 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution) to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Immerse all halters and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure in the use solution. Treated surfaces must remain wet or 10 minutes at (184 ppm active PAA). Ventilate buildings, coops and other closed spaces. Do not house animals, poultry, livestock or employ equipment until treatment has been absorbed, set or dried. Thoroughly scrub all treated feed racks, troughs, automatic feeders, fountains and waterers and other treated equipment which can contact food or water with soap or detergent, and rinse with potable water before reuse.

Prior to use of this product, remove all animals, poultry and feed from premises, areas to be treated, animal transportation vehicles, trucks, cars, and enclosures, coops, crates, kennels, stables. Remove all litter, droppings and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other surfaces of facilities and fixtures occupied or traversed by poultry or other animals. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean surfaces with soap or detergent and rinse with water.

### HATCHERIES:

- Use to treat hatchers, setters, trays, racks, carts, sexing tables, delivery trucks and other hard, non-porous surfaces. Use 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution). Leave all treated surfaces wet for 2 minutes or more. Allow to air dry.
- Use to treat hatchers, setters, trays, racks, carts, sexing tables, delivery trucks and other hard, non-porous surfaces. Use 1.5 of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution). Leave all treated surfaces wet for 10 minutes or more. Allow to air dry.
- Use to treat hatchers, setters, trays, racks, carts, sexing tables, delivery trucks and other hard, non-porous surfaces. Use 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution). Leave all treated surfaces wet for 10 minutes or more. Allow to air dry.



Prior to use of this product, remove all animals, poultry and feed from premises, areas to be treated, animal transportation vehicles, trucks, cars, and enclosures, coops, crates, kennels, stables. Remove all litter, droppings and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other surfaces of facilities and fixtures occupied or traversed by poultry or other animals. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean surfaces with soap or detergent and rinse with water.

**VEHICLES:**

- To clean all hard, non-porous surfaces on vehicles including mats, crates, cabs, and wheels, use a use solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution). Apply use solution to wet hard, non-porous surfaces thoroughly. Leave treated surfaces wet for 2 minutes. Allow to air dry.
- To clean all hard, non-porous surfaces on vehicles including mats, crates, cabs, and wheels, use a use solution 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution). Apply use solution to wet hard, non-porous surfaces thoroughly. Leave treated surfaces wet for 10 minutes. Allow to air dry.
- To clean all hard, non-porous surfaces on vehicles including mats, crates, cabs, and wheels, use a use solution 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution). Apply use solution to wet hard, non-porous surfaces thoroughly. Leave treated surfaces wet for 10 minutes. Allow to air dry.

**REPTILE TANK CLEANING AND DISINFECTION DIRECTIONS:**

- Remove all reptiles from the enclosure/tank prior to cleaning and disinfecting. Remove all litter or droppings from surfaces. Empty all equipment used for feeding or watering reptiles. Thoroughly clean all surfaces with soap or detergent and rinse with water. Apply disinfecting and virucidal\* solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution) to hard, non-porous surfaces of the enclosure/tank. Apply by cloth, mop, brush, sponge, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Allow surfaces to remain wet for 2 minutes. Wipe dry with a paper towel. Rinse all surfaces that come in contact with food with potable water before reuse. Allow the enclosure/tank to ventilate for a minimum of 10 - 15 minutes before replacing the reptiles. Prepare a fresh solution daily or when visibly dirty.

**Note:** Do not apply this product directly onto the reptile. If this product comes into contact with the reptile's skin, then immediately wash the material off of the animal with lukewarm water. If the reptile ingests this product, contact your veterinarian immediately.

- Remove all reptiles from the enclosure/tank prior to cleaning and disinfecting. Remove all litter or droppings from surfaces. Empty all equipment used for feeding or watering reptiles. Thoroughly clean all surfaces with soap or detergent and rinse with water. Apply disinfecting and virucidal\* solution of 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) to hard, non-porous surfaces of the enclosure/tank. Apply by cloth, mop, brush, sponge, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Allow surfaces to remain wet for 10 minutes. Wipe dry with a paper towel. Rinse all surfaces that come in contact with food with potable water before reuse. Allow the enclosure/tank to ventilate for a minimum of 10 - 15 minutes before replacing the reptiles. Prepare a fresh solution daily or when visibly dirty.

**Note:** Do not apply this product directly onto the reptile. If this product comes into contact with the reptile's skin, then immediately wash the material off of the animal with lukewarm water. If the reptile ingests this product, contact your veterinarian immediately.

- Remove all reptiles from the enclosure/tank prior to cleaning and disinfecting. Remove all litter or droppings from surfaces. Empty all equipment used for feeding or watering reptiles. Thoroughly clean all surfaces with soap or detergent and rinse with water. Apply disinfecting and virucidal\* solution of 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution) to hard, non-porous surfaces of the enclosure/tank. Apply by cloth, mop, brush, sponge, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Allow surfaces to remain wet 10 minutes. Wipe dry with a paper towel. Rinse all surfaces that come in contact with food with potable water before reuse. Allow the enclosure/tank to ventilate for a minimum of 10 - 15 minutes before replacing the reptiles. Prepare a fresh solution daily or when visibly dirty.

**Note:** Do not apply this product directly onto the reptile. If this product comes into contact with the reptile's skin, then immediately wash the material off of the animal with lukewarm water. If the reptile ingests this product, contact your veterinarian immediately.



**TERRARIUM AND SMALL ANIMAL CAGE AND CAGE FURNITURE DISINFECTION:**

Animals frequently defecate on rocks and other hard, non-porous environmental cage furniture items inside your terrarium. This can result in high bacteria and ammonia levels that can lead to possible infection/disease in your animals. When used regularly, this product can eliminate these high bacteria/ammonia levels in your cage and on your cage furniture items. (Do not use on porous rocks, hot rocks, or driftwood.)

1. Remove all animals.
2. Thoroughly clean all surfaces and objects caves, cage furniture, feeding and watering dishes, and appliances including the substrate in the terrarium or cage with soap or detergent and rinse with water.
3. Saturate all hard, non-porous surfaces such as floors, walls, cages and other washable hard, non-porous surfaces with the disinfecting and virucidal\* solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution) so as to wet thoroughly.
4. Apply by cloth, mop, brush, sponge, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Rub with brush, cloth, or sponge. For smaller surfaces, use a trigger spray bottle to spray all surfaces with solution.
5. Allow surfaces to remain wet for a period of 2 minutes.
6. Saturate gravel as above and let stand for 2 minutes. Place in bucket of clean water and swirl for 15 - 30 seconds. Thoroughly air dry before returning to terrarium.
7. Thoroughly scrub all treated surfaces (except gravel) with soap or detergent and rinse with potable water before reuse.
8. Do not return animals to the habitat until it is dry and ventilated.
9. Clean terrarium at least once weekly or more as needed. Change cloth, sponge or towels frequently to avoid re-deposition of soil.
10. Prepare a fresh solution daily or more often if use solution becomes visibly soiled or diluted.

**Note:** Substrates for desert terrariums (i.e. gravel) must be completely dry before returning to terrarium to avoid high humidity levels. Always replace substrate if a foul odor persists. Do not apply this product directly onto the small animal. If this product comes into contact with the small animal's skin, then immediately wash the material off of the animal with lukewarm water. If the small animal ingests this product, contact your veterinarian immediately.

(OR)

Animals frequently defecate on rocks and other hard, non-porous environmental cage furniture items inside your terrarium. This can result in high bacteria and ammonia levels that can lead to possible infection/disease in your animals. When used regularly, this product can eliminate these high bacteria/ammonia levels in your cage and on your cage furniture items. (Do not use on porous rocks, hot rocks, or driftwood.)

1. Remove all animals.
2. Thoroughly clean all surfaces and objects caves, cage furniture, feeding and watering dishes, and appliances including the substrate in the terrarium or cage with soap or detergent and rinse with water.
3. Saturate all hard, non-porous surfaces such as floors, walls, cages and other washable hard, non-porous surfaces with the disinfecting and virucidal\* solution of 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) so as to wet thoroughly.
4. Apply by cloth, mop, brush, sponge, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Rub with brush, cloth, or sponge. For smaller surfaces, use a trigger spray bottle to spray all surfaces with solution.
5. Allow surfaces to remain wet for a period of 10 minutes.
6. Saturate gravel as above and let stand for 10 minutes. Place in bucket of clean water and swirl for 15 - 30 seconds. Thoroughly air dry before returning to terrarium.
7. Thoroughly scrub all treated surfaces (except gravel) with soap or detergent and rinse with potable water before reuse.
8. Do not return animals to the habitat until it is dry and ventilated.
9. Clean terrarium at least once weekly or more as needed. Change cloth, sponge or towels frequently to avoid re-deposition of soil.
10. Prepare a fresh solution daily or more often if use solution becomes visibly soiled or diluted.

**Note:** Substrates for desert terrariums (i.e. gravel) must be completely dry before returning to terrarium to avoid high humidity levels. Always replace substrate if a foul odor persists. Do not apply this product directly onto the small animal. If this product comes into contact with the small animal's skin, then immediately wash the material off of the animal with lukewarm water. If the small animal ingests this product, contact your veterinarian immediately.



(OR)

Animals frequently defecate on rocks and other hard, non-porous environmental cage furniture items inside your terrarium. This can result in high bacteria and ammonia levels that can lead to possible infection/disease in your animals. When used regularly, this product can eliminate these high bacteria/ammonia levels in your cage and on your cage furniture items. (Do not use on porous rocks, hot rocks, or driftwood.)

1. Remove all animals.
2. Thoroughly clean all surfaces and objects caves, cage furniture, feeding and watering dishes, and appliances including the substrate in the terrarium or cage with soap or detergent and rinse with water.
3. Saturate all hard, non-porous surfaces such as floors, walls, cages and other washable hard, non-porous surfaces with the disinfecting and virucidal\* solution of 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution) so as to wet thoroughly.
4. Apply by cloth, mop, brush, sponge, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Rub with brush, cloth, or sponge. For smaller surfaces, use a trigger spray bottle to spray all surfaces with solution.
5. Allow surfaces to remain wet for a period of 10 minutes.
6. Saturate gravel as above and let stand for 10 minutes. Place in bucket of clean water and swirl for 15 - 30 seconds. Thoroughly air dry before returning to terrarium.
7. Thoroughly scrub all treated surfaces (except gravel) with soap or detergent and rinse with potable water before reuse.
8. Do not return animals to the habitat until it is dry and ventilated.
9. Clean terrarium at least once weekly or more as needed. Change cloth, sponge or towels frequently to avoid re-deposition of soil.
10. Prepare a fresh solution daily or more often if use solution becomes visibly soiled or diluted.

**Note:** Substrates for desert terrariums (i.e. gravel) must be completely dry before returning to terrarium to avoid high humidity levels. Always replace substrate if a foul odor persists. Do not apply this product directly onto the small animal. If this product comes into contact with the small animal's skin, then immediately wash the material off of the animal with lukewarm water. If the small animal ingests this product, contact your veterinarian immediately.

## FOGGING

This product can be applied by fogging to control the growth of non-public health microorganisms that can cause decay and/or spoilage on raw, post-harvest fruits and vegetables during the post-harvest process and for fruit and vegetable storage systems.

**ALL SURFACES MUST BE CLEANED AND DISINFECTED IN ACCORDANCE WITH LABEL DIRECTIONS PRIOR TO FOGGING.**

### DIRECTIONS FOR FOGGING IN DAIRIES, BEVERAGE AND FOOD PROCESSING PLANTS:

Prior to fogging, food products and packaging material must be removed from the room or carefully protected. After disinfecting, fog desired areas using one quart of a 0.3% - 1.5% solution of this product (2 - 10 oz. of this product per 5 gal. of water) (or equivalent use-dilution) per 1,000 cu. ft. of room area. Wear a dust mist respirator when mixing the use-solution and pouring it into the fogging apparatus. Vacate the area of all personnel during fogging and for a minimum of 2 hours after fogging and a minimum of 4 air exchanges (ACH) per hour in the facility. When fogging is complete, ventilate buildings and other closed spaces. All food contact surfaces must be sanitized with an EPA approved food contact surface sanitizer solution prior to use. All food contact surfaces must be thoroughly rinsed with potable water prior to sanitizing.

**Note:** The fog generated is irritating to the eyes, skin and mucous membranes. Under no circumstances must a room or building be entered by anyone within two hours of the actual fogging and a minimum of 4 air exchanges (ACH) per hour in the facility. If the building must be entered, then the individuals entering the building must wear a self-contained respirator approved by NIOSH, goggles, long sleeves, gloves and long pants.



## HOSPITAL / HEALTH CARE / MEDICAL / NON-MEDICAL

### FOR USE AS A SPORICIDE AGAINST *Clostridium difficile* SPORES:

1. Pre-clean surfaces. Fecal matter/waste must be thoroughly cleaned from surfaces/objects before disinfection by application with a clean cloth, mop, and/or sponge saturated with the disinfectant product. This cleaning may be accomplished with any cleaning solution, including this product. Cleaning is to include vigorous wiping and/or scrubbing, until all visible soil is removed. Special attention is needed for high-touch surfaces. Surfaces in patient rooms are to be cleaned in an appropriate manner, such as from right to left or left to right, on horizontal surfaces, and top to bottom, on vertical surfaces, to minimize spreading of the spores. Restrooms are to be cleaned last. Do not reuse soiled cloths.
2. Apply use solution of 4 oz. of this product per gal. of water (1844 ppm active PAA), (or equivalent use-dilution) to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray.
3. Treated surfaces must remain wet for 2 minutes.
4. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished.
5. Prepare a fresh solution daily or when visibly dirty.

Note: Materials used in the cleaning process that may contain feces/wastes are to be disposed of immediately in accordance with local regulations for infectious materials disposal.

### FOR USE AS A ONE-STEP GENERAL HOSPITAL & MEDICAL DISINFECTANT VIRUCIDE\*, FUNGICIDE, DEODORIZER & CLEANER:

1. Pre-clean heavily soiled areas.
2. Apply use solution of 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution), to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
3. Treated surfaces must remain wet for 2 minutes.
4. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished.
5. Prepare a fresh solution daily or when visibly dirty.

(OR)

1. Pre-clean heavily soiled areas.
2. Apply use solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution), to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
3. Treated surfaces must remain wet for 2 minutes.
4. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished.
5. Prepare a fresh solution daily or when visibly dirty.

### FOR USE AS A TUBERCULOCIDE:

1. Pre-clean heavily soiled areas.
2. Apply use solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution) at 21°C to disinfect hard, non-porous surfaces with a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
3. Treated surfaces must remain wet for 10 minutes.
4. Wipe dry with a clean cloth or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished.
5. Prepare a fresh solution daily or when visibly dirty.



## BLOODBORNE PATHOGEN INSTRUCTIONS

**\*KILLS HIV-1, HBV AND HCV ON PRE-CLEANED HARD, NON-POROUS SURFACES/OBJECTS PREVIOUSLY SOILED WITH BLOOD/BODY FLUIDS** in health care settings or other settings in which there is an expected likelihood of soiling of hard, non-porous surfaces/objects with blood or body fluids and in which the surfaces/objects likely to be soiled with blood or body fluids can be associated with the potential for transmission of Human Immunodeficiency Virus Type 1, (HIV-1), (associated with AIDS), Hepatitis B Virus, (HBV) and Hepatitis C Virus (HCV).

### SPECIAL INSTRUCTIONS FOR CLEANING AND DECONTAMINATION AGAINST HIV-1, HBV AND HCV ON SURFACES/OBJECTS SOILED WITH BLOOD/BODY FLUIDS.

**Personal Protection:** Wear protective latex gloves, gowns, masks and eye protection. Specific barrier protection items to be worn when handling items soiled with blood or body fluids are disposable latex gloves, gowns, masks and eye protection.

**Cleaning Procedure:** Blood and other body fluids containing HIV-1, HBV and HCV must be thoroughly cleaned from hard, non-porous surfaces and objects before application of this product.

**Disposal of Infectious Materials:** Blood and other body fluids, cleaning materials and clothing must be autoclaved and disposed of according to federal, state and local regulations for infectious waste disposal.

#### Contact Time:

Allow hard, non-porous surfaces to remain wet for 2 minutes for HIV-1 at 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution).

(OR)

‡ Allow surface to remain wet for 2 minutes for HIV-1, 5 minutes for HBV and HCV at 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution).

(OR)

Allow surface to remain wet for 10 minutes for HIV-1 and HBV at 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution).

(OR)

Allow surface to remain wet for 10 minutes for HIV-1 and HBV at 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution).

### CLEANING AND DISINFECTING HARD, NON-POROUS SURFACES ON PERSONAL PROTECTIVE EQUIPMENT (RESPIRATORS):

- Pre-clean equipment, if heavily soiled to ensure proper surface contact. Add 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution). Gently mix for uniform use solution. Apply use solution to surfaces of the respirator with a sponge, brush, cloth, by immersion, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Rub with brush, cloth, or sponge. Treated surfaces must remain wet for 2 minutes. Remove excess solution from equipment prior to storage. The user must comply with all OSHA regulations for cleaning respiratory protection equipment (29 CFR 1910.134). Prepare a fresh solution daily or when visibly dirty.
- Pre-clean equipment, if heavily soiled to ensure proper surface contact. Add 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution). Gently mix for uniform use solution. Apply use solution to surfaces of the respirator with a sponge, brush, cloth, by immersion, mechanical spray device, hand pump trigger spray device or coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Rub with brush, cloth, or sponge. Treated surfaces must remain wet for 2 minutes. Remove excess solution from equipment prior to storage. The user must comply with all OSHA regulations for cleaning respiratory protection equipment (29 CFR 1910.134). Prepare a fresh solution daily or when visibly dirty.

## GENERAL DISINFECTION

### FOR USE AS A GENERAL DISINFECTANT CLEANER ON HARD, NON-POROUS SURFACES:

1. Pre-clean heavily soiled areas.
2. Apply 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) to hard, non-porous surfaces using a sponge, brush, cloth, mop, by immersion, auto scrubber, mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.
3. Treated surfaces must remain wet for 10 minutes.
4. Wipe dry with a clean cloth or allow to air dry.
5. Prepare a fresh solution daily or when visibly dirty.



## RESTROOM/BATHROOM

### TOILET BOWL AND URINAL DISINFECTANT/CLEANING DIRECTIONS:

- Remove heavy soil prior to disinfection. Empty water out of toilet bowl or urinal and apply 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution) to exposed surfaces, including under the rim with a toilet brush or mop, cloth, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Brush or swab thoroughly, then allow solution to stand for 2 minutes at (922 ppm) and flush.
- Remove heavy soil prior to disinfection. Empty water out of toilet bowl or urinal and apply 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution) to exposed surfaces, including under the rim with a toilet brush or mop, cloth, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Brush or swab thoroughly, then allow solution to stand for 2 minutes at (1844 ppm active PAA) and flush.
- Remove heavy soil prior to disinfection. Empty water out of toilet bowl or urinal and apply 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution) to exposed surfaces, including under the rim with a toilet brush or mop, cloth, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Brush or swab thoroughly, then allow solution to stand for 2 minutes at (184 ppm active PAA) and flush.
- Remove heavy soil prior to disinfection. Empty water out of toilet bowl or urinal and apply 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) to exposed surfaces, including under the rim with a toilet brush or mop, cloth, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Brush or swab thoroughly, then allow solution to stand for 2 minutes at (138 ppm active PAA) and flush.

### TO CLEAN WATERFREE /WATERLESS URINALS:

Remove any debris from the urinal. Spray 0.5 to 1 oz. of use solution onto urinal surface. To prepare use solution, add 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use dilution). DO NOT spray product directly onto cartridge. Wipe surface to clean. Change cartridge as needed. The unit is ready for use.

### TO DISINFECT TUBS, SHOWER STALLS, SINKS, AND FAUCETS:

- Pre-clean heavily soiled areas. Apply a use solution of 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution) on all hard, non-porous surfaces with a brush, cloth, mop, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Wipe surfaces. Allow surface to remain wet for at least 2 minutes. Rinse. Wipe up excess liquid with a paper towel or allow to air dry. Change cloth, sponge or towels frequently to avoid re-deposition of soil. Prepare a fresh solution daily or when visibly dirty.
- Pre-clean heavily soiled areas. Apply a use solution of 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution) on all hard, non-porous surfaces with a brush, cloth, mop, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Wipe surfaces. Allow surface to remain wet for at least 2 minutes. Rinse. Wipe up excess liquid with a paper towel or allow to air dry. Change cloth, sponge or towels frequently to avoid re-deposition of soil. Prepare a fresh solution daily or when visibly dirty.
- Pre-clean heavily soiled areas. Apply a use solution of 1.5 oz. of this product per 5 gal. of water (138 ppm active PAA) (or equivalent use-dilution) on all hard, non-porous surfaces with a brush, cloth, mop, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Wipe surfaces. Allow surface to remain wet for at least 10 minutes. Rinse. Wipe up excess liquid with a paper towel or allow to air dry. Change cloth, sponge or towels frequently to avoid re-deposition of soil. Prepare a fresh solution daily or when visibly dirty.
- Pre-clean heavily soiled areas. Apply a use solution of 2 oz. of this product per 5 gal. of water (184 ppm active PAA) (or equivalent use-dilution) on all hard, non-porous surfaces with a brush, cloth, mop, sponge, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6-8 inches from surface. Do not breathe spray. Wipe surfaces. Allow surface to remain wet for at least 10 minutes. Rinse. Wipe up excess liquid with a paper towel or allow to air dry. Change cloth, sponge or towels frequently to avoid re-deposition of soil. Prepare a fresh solution daily or when visibly dirty.



**FOR USE TO CLEAN AND DISINFECT SHOWER ROOMS, LOCKER ROOMS AND OTHER LARGE, OPEN AREAS WITH FLOOR DRAINS:**

1. Pre-clean heavily soiled areas.
2. Apply use solution of 2 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution), to floors, walls and ceilings using a mechanical spray device, hand pump trigger spray device, coarse trigger spray device. Do not breathe spray and make sure not to over spray. To disinfect, all hard, non-porous surfaces must remain wet for 2 minutes.
3. Scrub using a deck brush or other coarse material as necessary.
4. Rinse surfaces thoroughly and let air dry.
5. Prepare a fresh solution daily or when visibly dirty.

(OR)

1. Pre-clean heavily soiled areas.
2. Apply use solution of 4 oz. of this product per gal. of water (922 ppm active PAA) (or equivalent use-dilution), to floors, walls and ceilings using a mechanical spray device hand pump trigger spray device,, coarse trigger spray device. Do not breathe spray and make sure not to over spray. To disinfect, all hard, non-porous surfaces must remain wet for 2 minutes.
3. Scrub using a deck brush or other coarse material as necessary.
4. Rinse surfaces thoroughly and let air dry.
5. Prepare a fresh solution daily or when visibly dirty.

‡ 4 oz. of this product per gal. of water (1844 ppm active PAA) (or equivalent use-dilution) at 5 minutes

(OR)

1. Pre-clean heavily soiled areas.
2. Apply use solution of 2 oz. of this product per 5 gal. of water (922 ppm active PAA) (or equivalent use-dilution), to floors, walls and ceilings using a mechanical spray device, hand pump trigger spray device, coarse trigger spray device. Do not breathe spray and make sure not to over spray. To disinfect, all hard, non-porous surfaces must remain wet for 10 minutes.
3. Scrub using a deck brush or other coarse material as necessary.
4. Rinse surfaces thoroughly and let air dry.
5. Prepare a fresh solution daily or when visibly dirty.

(OR)

1. Pre-clean heavily soiled areas.
2. Apply use solution of 1.5 oz. of this product per 5 gal. of water (922 ppm active PAA) (or equivalent use-dilution), to floors, walls and ceilings using a mechanical spray device, hand pump trigger spray device, coarse trigger spray device. Do not breathe spray and make sure not to over spray. To disinfect, all hard, non-porous surfaces must remain wet for 10 minutes.
3. Scrub using a deck brush or other coarse material as necessary.
4. Rinse surfaces thoroughly and let air dry.
5. Prepare a fresh solution daily or when visibly dirty.

## DEODORIZING/CLEANING

### FOR USE AS A GENERAL CLEANER AND/OR DEODORIZER:

Apply a use solution of 2 oz. of this product per gal. of water (or equivalent use dilution) to hard, non-porous surfaces. Rinse. Wipe up excess liquid with a paper towel or allow to air dry. For heavy-duty use, add 4 oz. of this product per gal. of water to clean hard, non-porous surfaces.

### TO CLEAN/REMOVE SOAP SCUM:

Apply a use solution of 2 oz. of this product per gal. of water onto soils and wipe clean with a dry paper towel or lint-free cloth or microfiber cloth or sponge. No rinsing necessary. Repeat for heavily soiled areas. For stubborn stains or heavily soiled areas or tougher jobs, allow product to penetrate dirt and soap scum before wiping. For best results, use regularly to prevent dirt and soap scum build-up.

### GENERAL DEODORIZATION:

To deodorize, apply 2 oz. of this product per gal. of water (or equivalent use dilution) to hard, non-porous surfaces. Rinse. Wipe up excess liquid with a paper towel or allow to air dry.

### GLASS CLEANING /DEODORIZING DIRECTIONS:

Use 2 oz. of this product per gal. of water use solution to clean and deodorize windows, mirrors, and glass surfaces. Use a coarse spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Rub with sponge or cloth. Change cloth, sponge or towels frequently to avoid re-deposition of soil.

### FOAM CLEANING OF FOOD AND NON-FOOD CONTACT SURFACES:

For cleaning procedures, this product may be added to Macat<sup>®</sup> AO-12 (amine oxide) and foamed on hard, non-porous equipment surfaces using foam generating equipment. The resilient foam blend can be used on equipment, floors, walls, ceilings, drains, etc. and should be left on the surface for a minimum of 1 minute. To mix manually or mechanically blend 1 - 6.1 oz. of this product and 6 - 12 oz. of Macat<sup>®</sup> AO-12 (foam additive) per 6 gal. of water. The dilution water must not exceed 150°F. On food contact surfaces do not exceed 6.1 oz. of this product per 6 gal. of water.

### BOOSTER FOR ALKALINE DETERGENTS TO CLEAN FOOD PROCESSING EQUIPMENT:

This product is an effective oxygen bleach cleaning booster for use with alkaline detergents. For cleaning applications as a detergent booster, use 2 - 7 oz. of this product per gal. of water detergent solution to aid in the removal of organic soils. All hard, non-porous food contact surfaces treated with this boosted detergent must be rinsed thoroughly with a potable water rinse followed by sanitizing with an approved food contact surface sanitizer.

### BOOSTER FOR ACID DETERGENTS TO CLEAN FOOD PROCESSING EQUIPMENT:

This product is an effective oxygen bleach cleaning booster for use with acidic detergents. For cleaning applications as a detergent booster, use 2 - 7 oz. of this product per gal. of water detergent solution to aid in the removal of organic soils. All hard, non-porous food contact surfaces treated with this boosted detergent must be rinsed thoroughly with a potable water rinse followed by sanitizing with an approved food contact surface sanitizer.



## WATER TREATMENT (Not for use in CA.)

Do not use water containing residues from use of this product to irrigate crops for food or feed.

### INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER TOWERS, RETORT WATER SYSTEMS, EVAPORATIVE CONDENSERS, HEAT EXCHANGE TRANSFER WATER SYSTEMS, INFLUENT SYSTEMS, BREWERY PASTEURIZERS AND WARMERS (Not for use in CA.):

For best results, clean heavily contaminated systems before treatment with this product. If soap or anionic detergent is used, rinse thoroughly before charging with this algaecide. Cooling tower waters that are inherently low in algae growth and bacteria count may be adequately controlled by the lower range of these dosages. Repeat every seven days or increase frequency if needed. Should slime develop again, repeat initial dosage.

1. **Dosing Location:** This product is to be applied at a point in the system where it will be uniformly mixed, such as at the basin area, the sump, or another reservoir or collecting area.
2. **Dosing Conditions:** This product must be applied when the system is in jeopardy of being affected or after cleaning systems where efficiency is already impaired. Tower bleed off valves must be closed to permit a retention time of 4 hours.
3. **Method of Application:**
  - a. **INTERMITTENT OR SLUG METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 4.5 - 32 oz. of this product per 1,000 gal. of water (2 - 14 ppm active PAA) in the system.

**Subsequent Dose:** When microbial control is evident, add 4.5 - 11 oz. of this product per 1,000 gal. of water (2 - 5 ppm active PAA) in the system weekly or as needed to maintain control.
  - b. **MODIFIED INTERMITTENT METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 4.5 - 32 oz. of this product per 1,000 gal. of water (2 - 14 ppm active PAA) in the system. Apply half of this initial dose when half of the water in the system has been lost by blowdown.

**Subsequent Dose:** When control of microbial growth is evident, apply 4.5 - 11 oz. of this product per 1,000 gal. of water (2 - 5 ppm active PAA) in the system. Apply half of this subsequent dose when half of the water in the system has been lost by blowdown.
  - c. **CONTINUOUS FEED METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 4.5 - 32 oz. of this product per 1,000 gal. of water (2 - 14 ppm active PAA) in the system.

**Subsequent Dose:** Maintain this treatment by starting a continuous feed of 4.5 - 11 oz. of this product per 1,000 gal. of water (2 - 5 ppm active PAA) lost by blowdown.

### FOR DISINFECTION OF SEWAGE AND WASTEWATER EFFLUENTS IN TREATMENT PLANTS (Not for use in CA.):

Use this product to treat sewage and wastewater effluent related to public and private wastewater treatment plants. This product can be applied directly to the effluent or may be used with an appropriate activator such as hydrogen peroxide or other technology. This product may be applied to effluent water discharged from trickle bed or percolating fluidized bed filters. The application rate for individual facilities will depend on the degree of bioloading of the effluent stream to be discharged and the local microbial discharge limit. Adjust application rate to meet the need of the individual facility.

Add this product to effluent water at a concentration of 0.5 - 15 ppm active PAA. Allow contact time of approximately 15 - 60 minutes.

The maximum amount of peroxyacetic acid that can be discharged from the treatment facility is 1 ppm. Use an appropriate peroxyacetic acid test kit analyzer to ensure that this level is not exceeded. Contact your company representative for assistance establishing treatment regimes.



## OIL FIELD, GAS PRODUCTION AND TRANSMISSION PIPELINE AND SYSTEMS (Not for use in CA.)

### OIL FIELD GAS PRODUCTION TRANSMISSION PIPELINE AND SYSTEMS (Not for use in CA.):

This product can be used in the control of bacteria including slime forming, spoilage and anaerobic sulfate reducing bacteria and fungi (yeast and molds) that lead to reservoir souring and metal corrosion. This product must be introduced through a closed mixed/loading and delivery transfer system equipped with a metering device that is appropriate for its intended uses.

### DRILLING MUDS, FRACTURING FLUIDS, WELL SQUEEZED FLUIDS (Not for use in CA.):

For the preservation of drilling muds, work over and completion fluids and other products susceptible to contamination, pre-mix with the fluid or add directly at the point of use at 10.8 oz. of this product per 1,000 gal. of water (5 ppm active PAA) (or equivalent use-dilution) to 1.8 gal. of this product per 1,000 gal. of water (106 ppm active PAA) (or equivalent use-dilution) as required. Depending on the severity of the contamination, initial application may be added up to 17.9 gal. of this product per 1,000 gal. of water (1056 ppm active PAA) (or equivalent use-dilution).

### FLOODING, INJECTION AND PRODUCED WATER (Not for use in CA.):

For Water Flooding operations, add initially at 10.8 oz. of this product per 1,000 gal. of water (5 ppm active PAA) (or equivalent use-dilution) to 1.8 gal. of this product per 1,000 gal. of water (106 ppm active PAA) (or equivalent use-dilution) 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 active PAA when diluted in the formation water. Any additional top-up water should be treated as required.

For hydrostatic systems, apply 10.8 oz. of this product per 1,000 gal. of water (5 ppm active PAA) (or equivalent use-dilution) to 1.8 gal. of this product per 1,000 gal. of water (106 ppm active PAA) (or equivalent use-dilution) 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 10.8 oz. of this product per 1,000 gal. of water (5 ppm active PAA) (or equivalent use-dilution) to 1.8 gal. of this product per 1,000 gal. of water (106 ppm active PAA) (or equivalent use-dilution) 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.

## BIOFOULING CONTROL IN PULP AND PAPER MILL SYSTEMS

(Not for use in CA.)

For use in the manufacture of paper and paperboard intended for food contact and non-food contact. This product can be used to control bacteria, fungi, and fresh water organisms in paper, paperboard, or nonwoven process water and influent water systems. Suitable dosing points include but are not limited to: stock chests, pulpers, the white water loop and white water storage systems and influent water streams. Add the product at a point in the system where uniform mixing and even distribution will occur.

### **INFLUENT WATER SYSTEMS** (Not for use in CA.):

This product should be continuously fed to incoming fresh water streams (non-potable use only) at dosage rates from 11.8 - 1180 ppm active PAA (200 - 20,000 ppm of this product) (or equivalent use-dilution).

### **MILL PROCESS WATERS** (Not for use in CA.)

**Continuous Feed:** This product should be fed continuously at dosages ranging from 11.8 - 1180 ppm active PAA (200 - 20000 ppm of this product) (or equivalent use-dilution). This range is equivalent to 0.4 - 40 lbs. of this product per ton (dry basis) of pulp or paper produced.

**Intermittent Feed:** This product should be feed intermittently (6 - 8 times per day) at dosages ranging from 10 - 978 ppm active PAA (200 - 20,000 ppm of this product) (or equivalent use-dilution). This dosage is equivalent to 0.4 - 40 lbs. of this product per ton (dry basis) of pulp or paper produced during the feed period.

**Shock Dose:** This product should be shock dosed at levels ranging from 118 - 2360 ppm active PAA (2000 - 40000 ppm of this product) (or equivalent use-dilution). This dosage is equivalent to 4 - 80 lbs. of this product per ton (dry basis) of pulp or paper produced during the feed period.

### **CONTROL OF BACTERIA AND FUNGI IN NON-FOOD CONTACT DISPERSED PIGMENT** (Not for use in CA.):

This product can be used in the control of bacteria and fungi in the manufacture and storage of dispersed pigment such as kaolin clay, titanium dioxide, calcium carbonate, calcium sulfate, barium sulfate, magnesium silicate and diatomaceous earth used in paint and paper product. Add 0.26 - 1.31 lbs. (3.6 - 18.3 oz.) of this product to each 1,000 lbs. of pigment slurry. This will provide 15.34 - 77.29 ppm active PAA (260 - 1310 ppm of this product) (or equivalent use-dilution).

### **CONTROL OF BACTERIA AND FUNGI IN COATING PRESERVATION** (Not for use in CA.):

Not for the manufacture of material intended for food contact. This product can be used as an in-container preservative for the control of bacteria and fungi in water based coating such as paper coatings. Add 0.26 - 1.31 lbs. (3.6 - 18.3 oz.) of this product to each 1,000 lbs. of preservative. This will provide 15.34 - 77.29 ppm active PAA (260 - 1310 ppm of this product) (or equivalent use-dilution).



## AGRICULTURAL OR HORTICULTURAL USES (These uses require WPS.)

### AGRICULTURAL OR HORTICULTURAL USES:

This product must never be mixed or combined with any other pesticide or fertilizer. Upon soil contact this product decomposes rapidly to oxygen, carbon dioxide and water. The product is harmful to fish if exposed on a continuous basis at concentrations of 0.5 ppm or more of PAA. Meter this product into pressurized pipes using a plastic or stainless steel injection/backflow device installed far enough upstream from the target equipment to ensure thorough mixing. For open flowing bodies of water, apply this product as far upstream as possible to allow adequate mixing prior to the flow entering any larger body of water. If open pouring of this product is required pour product as close to the surface of the water as possible to reduce odor exposure.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State and Tribe, consult the State/Tribal agency responsible for pesticide regulation.

### TREATMENT OF IRRIGATION WATER SYSTEMS (SAND FILTERS, HUMIDIFICATION SYSTEMS, STORAGE TANKS, PONDS, RESERVOIRS, AND CANALS):

For the control of odor, sulfides, slime and algae in water systems, apply this product at 0.4 - 2 oz. of this product per 100 gal. of water

(2 - 9 ppm active PAA) (or equivalent use-dilution). This feed rate equals 0.3 - 1.53 gal. of this product per 10,000 gal. of water. Repeat dose as necessary to maintain control, which will vary with seasonal conditions. For prevention of algae some systems will require continuous low level dosing during warm sunny periods.

### DRIP IRRIGATION SYSTEM CLEANING:

To clean slime and algae from drip system tapes and emitters, meter this product upstream from pumps or filters at the rate of 1 - 2 oz. of this product per 50 gal. of water (9 - 18 ppm active PAA) (or equivalent use-dilution). This feed rate equals 1.53 - 3.1 gal. of this product per 10,000 gal. of dilution water. When required during normal irrigation cycles, use this product at the required dose for a minimum of 30 minutes. Thereafter, the irrigation cycle must be discontinued and the line must not be flushed.

**Note:** This product at its use-dilution is compatible with stainless steel and aluminum surfaces. If the product is intended to be used on any other surface, it is recommended that you apply to a smaller test area to determine compatibility before proceeding with its use.

### FOLIAR SPRAY TREATMENT IN GREENHOUSES (Not for use in CA.):

This product works immediately on contact with any plant surface for control/suppression of fungi. Apply this product to ornamentals, bedding plants, flowering plants, shrubs, and trees. To ensure that this fungicide is effective, thorough coverage and wetting of the foliage is necessary.

#### Initial Curative Application:

1. Use  $\frac{2}{3}$  -  $1\frac{1}{3}$  oz. of this product per gal. of clean water (307 - 614 ppm active PAA) (or equivalent use-dilution). Do not reuse already mixed solution. Make fresh solution at least daily or when use solution becomes visibly dirty, soiled or diluted.
2. Spray, mist or fog plants in the early morning or late evening. Do not breathe spray.
3. Thoroughly wet all surfaces of plant including upper and lower foliage, stems, branches and stalks to ensure full contact with plant and flower tissue.
4. Apply for one to three consecutive days and then follow directions for preventive treatment after the initial application.

#### Weekly Preventive Treatment:

1. Use 0.14 - 0.23 oz. of this product per gal. of clean water (64 - 106 ppm active PAA) (or equivalent use-dilution).
2. Spray, mist or fog plants. Do not breathe spray.
3. Thoroughly wet all surfaces of plant including upper and lower foliage, stems, branches and stalks to ensure full contact with plant and flower tissue.
4. Spray every five to seven days as a Preventive treatment.
5. At the first sign of disease, spray daily with a dilution of  $\frac{2}{3}$  -  $1\frac{1}{3}$  oz. of this product per gal. of water (or equivalent use-dilution) for three consecutive days and then resume weekly Preventive Treatment.



**FOLIAR SPRAY TREATMENT FOR FIELD GROWN CROPS, CROPS GROWN IN COMMERCIAL GREENHOUSES OR CROPS GROWN IN SIMILAR SITES (Not for use in CA.):** This product works immediately on contact with any plant surface for control/suppression of disease.

Apply this product to growing crops and nursery stock such as woody ornamentals, bedding plants, flowering plants, roses, container plants, azaleas, rhododendrons, conifers, and shade trees. Use a dilution of ⅛ oz. - 1¼ oz. of this product per gal. of clean water (or equivalent use-dilution). Good coverage and wetting of foliage is required to ensure full contact with plant and flower tissue.

**Initial Curative Application:**

1. Use 0.66 - 1.33 oz. of this product per gal. of clean water (307 - 613 ppm active PAA) (or equivalent use-dilution). Do not reuse already mixed solution. Make fresh solution at least daily or when use solution becomes visibly dirty, soiled or diluted.
2. Spray, mist or fog plants and trees, including applications through irrigation (or chemigation) systems. Do not breathe spray.
3. Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches and stalks to ensure full contact with plant and flower tissue.
4. Apply for one to three consecutive days and then follow directions for Preventive Treatment after the initial application.

**Weekly Preventive Treatment:**

1. Use 0.66 - 1.33 oz. of this product per gal. of clean water (307 - 613 ppm active PAA) (or equivalent use-dilution).
2. Spray, mist or fog plants and trees, including applications through irrigation (or chemigation) systems. Do not breathe spray.
3. Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches and stalks to ensure full contact with plant and flower tissue.
4. Spray every five to seven days as a Preventive Treatment.
5. At the first sign of disease spray daily with a dilution of 1.33 oz. of this product per gal. of water for three consecutive days and then resume weekly Preventive Treatment.

**FOR CUT FLOWERS (Not for use in CA.):**

Use this product to prevent fungal diseases such as *Botrytis*, Downy Mildew, and Powdery Mildew on flowers in cold storage or in transit. Apply as a post-harvest treatment. Use a dilution of 0.14 - 0.23 oz. of this product per gal. of clean water (64 - 106 ppm active PAA) (or equivalent use-dilution). Spray flowers after grading and prior to storage or shipment. Repeat weekly for flowers in storage. Do not breathe spray.

**FOR BARE ROOT NURSERY STOCK (Not for use in CA.):**

Use this product to prevent *Botrytis* on budwood and nursery stock in storage. Use a dilution of 1⅓ oz. of this product per gal. of water (or equivalent use-dilution). Dip plants or spray until dripping wet. Repeat weekly if necessary. Do not breathe spray.

**FOR TURF APPLICATIONS (Not for use in CA.):**

Broad spectrum treatment for control of algae, fungi and bacteria on turf. For use on all turf types such as commercial turf, lawns, athletic fields and golf course fairways, greens and tees. Use this product to control fungi such as: *Anthraco*se, Brown Spot, Dollar Spot, Copper Spot, Fairy Ring, Pink Snow Mold, *Pythium*, *Phytophthora*, Summer Patch, *Rhizoctonia*, Scum, Take All Patch, *Fusarium* Blight, Stripe Smut, Leaf Spot, Algae, Slime Molds and their spores. This product controls on contact.

**FOR TREATMENT OF TURF (Not for use in CA.):**

Use on golf course fairways, greens and tees consisting of Bentgrass, Bluegrass, Bermudagrass, Fescue, Ryegrass, St. Augustine grass and their mixtures to control/suppress algae, bacterial and fungal diseases and the odors and conditions that these organisms may cause. Typical preventive treatment rates involve using 2 - 6 oz. of this product diluted into 3 - 5 gal. of water per approximately 1,000 sq. ft. of turf area. For curative control, 2 - 3 consecutive treatments applied at a rate of 6 - 12 oz. of this product diluted into 3 - 10 gal. of water per 1,000 sq. ft. may be required to eradicate disease. Drench soil to saturate the root systems in affected areas. Add a spreader surfactant for best results. Use spray solution the same day it is prepared. Do not store and reuse mixed spray solution. Refer to manufacturer's direction for specific instructions on using this product through irrigation systems.

**Note:** Optimum treatment time is early morning or late afternoon. For best results, apply immediately after grass has been cut. Applications can be made during wet or rainy weather. This product can be injected through automatic irrigation systems in turf areas.



**FOR SEED BED TREATMENT** (Not for use in CA.): Prior to sowing seed, apply a dilution rate of 1:50 or 2½ oz. of this product per gal. of clean water. Thoroughly wet or drench the seedbed, to the point of saturation, with 60 - 100 gal. of diluted solution per 1,000 sq. ft. Let sit for one hour then immediately seed soil. After seeds have germinated, apply a dilution rate of 1:100 or 1¼ oz. of this product per gal. of clean water. Lightly spray or irrigate the soil and seedlings until thoroughly wetted. Repeat once a week until seed is well established.

**FOR SOIL TREATMENT PRE-INOCULATION WITH BENEFICIAL ORGANISMS** (Not for use in CA.): Use this product to reduce the number of potential plant pathogenic organisms in the soil that will prevent beneficials from becoming established. Use a dilution rate of 1:50 or 2½ oz. of this product per gal. of clean water. Thoroughly wet or drench the area to be inoculated. Wait one day before inoculating soil.

**FOR GRASSES GROWN FOR SEED OR SOD** (Not for use in CA.): Treat with 40 - 128 oz. of this product per 100 gal. of water. Apply 50 - 100 gal. of spray solution per acre. Use sufficient water to achieve good coverage. Begin applications during stem elongations. Repeat weekly or as needed. Livestock can graze treated areas.

**FOR DISEASE CONTROL ON FRUITS AND VEGETABLES** (Not for use in CA.): For curative treatment, spray diseased plants with a 1:100 dilution or 1¼ oz. of this product per gal. of clean water. Apply for three consecutive days and then continue to apply a 1:100 dilution treatment at intervals of 5 - 7 days. For preventive treatment, begin when plants are small. Apply treatments at a dilution rate of 1:100 or 1¼ oz. of this product per gal. of clean water at 5-day intervals. On the fourth treatment, reduce the dilution rate to 1:300 or 0.5 oz. of this product per gal. of clean water and continue to apply at 5-day intervals until harvest. Do not breathe spray.

**FOGGING OF POTATOES IN STORAGE** (Not for use in CA.):

For potatoes in storage, apply this product by fogging to prevent/control the growth of non-public health organisms that cause spoilage and/or decay of potatoes, using any type of fogging equipment such as thermo foggers and cold foggers.

1. Before fogging, cover any metal equipment or controls inside the storage area or plenum chamber that might be sensitive to hydrogen peroxide and/or peroxyacetic acid. Ensure room is properly ventilated. Wear a dust mist respirator when mixing the use solution and pouring it into the fogging apparatus. Vacate the area of all personnel prior to, during and after fogging until the hydrogen peroxide concentration is below 0.5 ppm.
2. Use 0.56 - 1.12 oz. of this product per ton of potatoes (11.6 - 23.2 oz. of this product per 1000 ft<sup>3</sup> of potatoes) or (2.2 - 4.4 gal. of this product per 10,000 CWT of potatoes).
3. Mix the product concentrate with water at a dilution rate of 1:2.3 or 1:6.87 and apply it as a fog directly into the plenum while operating the fans at low speed. To improve fog distribution, a carrier solution that is compatible with this product, and approved for use on potatoes may be added following the recommendations of the fogging equipment manufacturer.
4. After fogging, do not allow personnel to reenter the treated area until the fog has dissipated and there are no strong odors remaining.
5. Make the first fog application immediately after potatoes enter storage (within 5 - 7 days) and repeat applications once every month or as necessary while potatoes remain in storage.

**FOGGING OF FRUITS AND VEGETABLES IN STORAGE** (Not for use in CA.):

For fruits and vegetables in storage, apply this product by fogging to prevent/control the growth of non-public health organisms that cause spoilage and/or decay of potatoes, using any type of fogging equipment such as thermo foggers and cold foggers.

1. Before fogging, cover any metal equipment or controls inside the storage area or plenum chamber that might be sensitive to hydrogen peroxide and/or peroxyacetic acid. Ensure room is properly ventilated. Wear a dust mist respirator when mixing the use solution and pouring it into the fogging apparatus. Vacate the area of all personnel prior to, during and after fogging until the hydrogen peroxide concentration is below 0.5 ppm.
2. Mix the product concentrate with potable water at a dilution rate of 1:250 - 1:320 (0.40 - 0.51 oz. of this product per gal. of water) and apply it as a fog directly into the plenum while operating the fans at low speed. To improve fog distribution, a carrier solution that is compatible with this product, and approved for use on produce may be added following the recommendations of the fogging equipment manufacturer.
3. After fogging, do not allow personnel to reenter the treated area until the fog has dissipated and there are no strong odors remaining.
4. Make the first fog application immediately after produce enters storage (within 5 - 7 days) and repeat applications once every month or as necessary while produce remains in storage.



**FOGGING FOR REGULAR CLEANING OF FRUITS AND VEGETABLE STORAGE SYSTEMS AND POTATO STORAGE AREAS BEFORE LOADING WITH PRODUCE** (Not for use in CA.):

This product may be used for fogging (wet misting) to prevent or control the growth of non-public health organisms that cause spoilage and/or decay of produce, following cleaning procedures in hard room surfaces using any type of fogging equipment such as thermo foggers and cold foggers.

1. Before fogging, cover any metal equipment or controls inside the storage area or plenum chamber that might be sensitive to hydrogen peroxide and/or peroxyacetic acid. Remove or cover any food or packaging materials with waterproof coverings. Thoroughly clean all surfaces. Remove gross soil particles from surface to be treated.
2. Ensure room is properly ventilated. Wear a dust mist respirator when mixing the use solution and pouring it into the fogging apparatus.  
Vacate the area of all personnel prior to, during and after fogging until the hydrogen peroxide concentration is below 0.5 ppm.
3. Fog the area at a dilution rate of 1:250 - 1:320 (0.40 - 0.51 oz. of this product per gal. of water) and apply it as a fog directly into the plenum while operating the fans at low speed. To improve fog distribution, a carrier solution that is compatible with this product, and approved for use on produce may be added following the recommendations of the fogging equipment manufacturer.
4. After fogging, do not allow personnel to reenter the treated area until the fog has dissipated and there are no strong odors remaining.

**TREATMENT OF PLANT PATHOGENS AND ASSOCIATED DISEASES** (Not for use in CA.)**CHEMIGATION FOR CONTROLLING FOLIAR PLANT PATHOGENS:**

Use this product to suppress and control foliar plant pathogens and their associated diseases such as: *Alternaria*, *Anthraco*se, *Aphanomyces*, Black Spot, *Botrytis* (grey mold), Downy Mildew, *Erwinia*, *Fusarium* (root rot), Leaf Spot, *Phytophthora* (blights), *Plasmopara*, Powdery Mildew, *Pseudomonas*, *Pythium*, *Rhizoctonia*, Rust, Scab, Smut, *Thielaviopsis*, *Uncinula* (powdery mildew), *Xanthomonas*, and Wilts & Blights. Use this product at a dilution rate of 1:5000 - 1:1000 (2.56 - 12.8 oz. of this product per 100 gal. of water) through the irrigation system at the time of seeding or transplanting, as well as a periodic treatment throughout the plant's life. Multiple applications can be made, as there is no mutational resistance with this product.

**Note:** This product can be used as a hydroponic water treatment using a dilution rate of 1:2000 - 1:500 (6.4 - 25.6 oz. of this product per 100 gal. of water). The grower should perform a phytotoxicity test on a small group of plants under simulated production conditions prior to widespread application to determine the specific dosage range that will result in higher yield, increased plant height and weight, leaf length and stem diameter with no phytotoxicity. It is also recommended that test strips for the concentration range should be used to measure hydrogen peroxide/peracetic acid concentrations in the hydroponic systems to establish the appropriate concentration range for the system. Root systems of different -plant species vary in their sensitivity to this product. Also, water and inert growing media in a hydroponic growing system provide special conditions that the grower needs to adjust for due to the unbuffered water conditions. Water pH, EC and supplements such as fertilizer, biological loading, and minor elements are factors that need to be considered before determining correct water treatment rates.

## CHEMIGATION INSTRUCTIONS

### General Requirements:

1. Apply this product only through a drip system or sprinkler system, including flood, and drip (trickle) irrigation systems.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 ft. of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.
7. Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.
8. All words shall consist of letters at least 2.5 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

### Specific Requirements for Chemigation Systems Connected to Public Water Systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.



**Specific Requirements for Sprinkler Chemigation:**

1. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

**Specific Requirements for Flood Chemigation:**

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.
2. The systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
  - a. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
  - b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
  - c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
  - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
  - e. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
  - f. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.

**Specific Requirements for Drip (Trickle) Chemigation:**

1. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.

**Application Instructions -**

1. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
2. Determine the treatment rates as indicated in the directions for use and make proper dilutions.
3. Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required. The product will immediately go into suspension without any required agitation.
4. Do not apply this product in conjunction with any other pesticides or fertilizers; this has the potential to cause reduced performance of the product. Avoid application in this manner.

## OTHER USES

**DISINFECTION OF POTATO, FRUIT AND VEGETABLE STORAGE AREAS AND EQUIPMENT**

This product is an effective disinfectant for produce storage areas and equipment after the produce is removed.

1. Remove all produce, potatoes, fruits and/or vegetables before disinfecting the storage areas and equipment.
2. For heavily soiled areas, pre-wash the area.
3. Cover any metal equipment or controls inside the storage area or plenum chamber that might be sensitive to hydrogen peroxide and/or peroxyacetic acid.
4. Ensure adequate ventilation in room or area to be treated.
5. Remove all personnel from the room before fogging.
6. Mix 1.14 oz. of this product per gal. of water. Apply by cloth, mop, brush, sponge, auto scrubber, by immersion mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray. Allow surfaces to remain wet for 10 minutes.
7. Thoroughly rinse all treated surfaces with potable water before resuming operations.

**FOAM SANITIZATION OF FOOD AND NON-FOOD CONTACT SURFACES:**

For sanitizing procedures this product may be added to Macat<sup>®</sup> AO-12 (amine oxide) and foamed on hard, non-porous or equipment surfaces using foam generating equipment. The resilient foam blend can be used on equipment, floors, walls, ceilings, drains, etc. and can be left on hard, non-porous surfaces for a minimum of 1 minute. On food contact surfaces do not exceed 6.1 oz. of this product per 6 gal. of water.

**SURFACES TREATED TO CONTROL THE SPREAD OF CITRUS CANCER:**

This product is used to control the spread of citrus canker between inanimate and animate surfaces to plants. This product is for sanitizing surfaces such as packing house conveyors, harvesting equipment and containers. **This product is not for treatment of infected plants.**

**PACKING HOUSE SANITIZATION:**

This product is an effective sanitizer against microorganisms such as *Xanthomonas axonopodis* (citrus canker).

1. Remove gross contamination with a cleaner or other suitable detergent and rinse with potable water.
2. Use this product at a dilution of 1 - 2.5 oz. of this product per 3 gal. of water (154 - 384 ppm active PAA) (or equivalent use-dilution) as a general sanitizing coarse spray to reduce bacteria and fungi contamination of walls, floors, conveyors and harvesting containers. Do not breathe spray.
3. Allow sanitizer to contact surface for at least 60 seconds.
4. Allow to air dry. Do not rinse.

**FIELD EQUIPMENT SANITIZATION:**

This product is used to sanitize harvest equipment such as pickers, trailers, trucks (including truck body parts and tires), bins, packing crates, ladders, power tools, gloves, rubber boots, pruning shears or other hard, non-porous equipment that may transfer *Xanthomonas axonopodis* (citrus canker).

1. Before sanitization, move the field equipment in an area with an impervious surface and with controlled drainage. Ensure that no sanitizing solution will be released to the environment.
2. Remove gross contamination with a cleaner or other suitable detergent and rinse with potable water.
3. Use this product at a dilution of 1 - 3 oz. of this product per 3 gal. of water (154 - 461 ppm active PAA) (or equivalent use-dilution) as a general sanitizing coarse spray. Do not breathe spray.
4. Allow sanitizer to contact surface for at least 60 seconds.
5. Allow to air dry. Do not rinse.



## POST-HARVEST TREATMENTS

### NON-AGRICULTURAL USE REQUIREMENTS:

The requirements in this section apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children and pets out of the treated area until sprays have dried.

### FRUIT AND VEGETABLE WATER TREATMENT:

This product is used to help control spoilage or decay-causing bacteria and fungi in water or ice that contacts raw unprocessed fruits and vegetables. The commodity must be continuously sprayed using coarse spray, or submerged using a solution containing 1 oz. of this product per 20 gal. of water (23 ppm active PAA) (or equivalent use-dilution) for a minimum contact time of 30 seconds. Adjust dose as necessary to maintain no more than 80 ppm active PAA. Remove excess water or allow to drain. If using the submersion method, replace with a fresh solution at least daily, or when solution becomes visibly soiled. A final potable water rinse is not required.

### TREATMENT OF FRUIT AND VEGETABLE PROCESSING WATERS:

Use this product for the treatment of waters used in the processing of raw fruits and vegetables. Mix this product with water either batch-wise or continuously at a rate of 60 - 195 oz. of this product per 1,000 gal. of water (28 - 90 ppm active PAA) (or equivalent use-dilution). The fruits and vegetables can be sprayed or submerged in the resulting solution for a minimum contact time of 30 seconds, followed by adequate draining. At this use-dilution, this product will control the growth of spoilage and decay causing non-public health organisms in process waters and on the surface of fresh cut or post-harvest fruits and vegetables. This product is not allowed to be used for control of any public health organism on fruit and vegetable surfaces.

### POST-HARVEST SPRAY TREATMENT

Use this product to prevent bacterial and fungal diseases on post-harvest fruits and vegetables. Mix 0.31 - 0.51 oz. of this product per gal. of clean water. Spray fruit or vegetables to the point of runoff using a mechanical spray device, hand pump trigger spray device, coarse trigger spray device. For spray applications, spray 6 - 8 inches from surface. Do not breathe spray.

**SPRAY TREATMENT OF SEED POTATOES**

For control of seed decay after planting, caused by fungi, oomycetes and bacteria.

Crop	Disease	Application Rate	Directions
Seed Potatoes	Bacteria Soft Rot Bacterial Ring Bacterial Ring Rot Early Blight Fusarium Dry Rot Late Blight Rot Silver Scurf	As a dip: Use 1.12 - 2.24 oz. of this product per gal. of water (1:114 - 1:57 dilution)  As a spray: Use 11.2 - 22.46 oz. of this product in 10 gal. of water (1:114 - 1:57 dilution).	Dip whole or cut tubers in the solution for 1-5 minutes.  Inject this product directly into the spray bar water supply. Spray solution directly onto tubers to achieve full and even coverage (0.25 - 1.0 gal. of spray per ton of potatoes).

**SPRAY TREATMENTS FOR NEWLY HARVESTED POTATOES BEFORE STORAGE**

For control of seed decay after planting, caused by fungi, oomycetes and bacteria.

Crop	Disease	Application Rate	Directions
Potatoes (Processing, Seed and Table Stock)	Bacteria Soft Rot Bacterial Ring Bacterial Ring Rot Early Blight Fusarium Dry Rot Late Blight Rot Silver Scurf	Use 1.12 - 2.24 oz. of this product per gal. of water (1:114 - 1:57 dilution) per ton of potatoes.	Spray diluted solution directly onto tubers to achieve full and even coverage (0.5 - 2 gal. of spray per ton of potatoes). The use of additional surfactant is acceptable to aid in sticking.

**DIRECT INJECTION TO HUMIDIFICATION WATER FOR POST-HARVEST POTATOES IN STORAGE**

For control of seed decay after planting, caused by fungi, oomycetes and bacteria.

Crop	Disease	Application Rate	Directions
Potatoes (Processing, Seed and Table Stock)	Bacteria Soft Rot Bacterial Ring Bacterial Ring Rot Early Blight Fusarium Dry Rot Late Blight Rot Silver Scurf	Use 1.12 - 2.24 oz. of this product per gal. of water (1:114 - 1:57 dilution) per ton of potatoes.	Inject concentrate into makeup water used in humidification of post-harvest potatoes in storage.