PERDROX™ PLUS

FEATURES & BENEFITS

- Disinfects as it cleans in one operation
- Does not require water rinse after application
- Ends the need for multiple sanitizers
- Eliminates foodborne bacteria
- High oxidation components are compatible with stainless steel, plastic and aluminum surfaces when used at recommended doses
- Sanitizes in multiple applications
- Minimizes CIP cycle time and improves operating efficiency

PACKAGING

M-03675	5 Gallon
M-03677	55 Gallon
M-03673	275 Gallon

PRODUCT DESCRIPTION

PERDROX™ PLUS is a no-rinse food grade liquid acid sanitizer and disinfectant. The combination of peracetic acid and octanoic acid makes this product an effective sanitizer and disinfectant against a broad spectrum of bacteria and fungi in cold or warm water. In addition, PERDROX™ Plus has virucidal claims against Influenza A (H1N1), Avian Influenza A (H2N2), Influenza B, and Reovirus. PERDROX™ Plus provides a prolonged duration of microbial efficacy and inhibits bacterial re-growth.

PERDROX™ Plus is 40% more concentrated than the leading competitor's version making Perdrox™ Plus a more economical option.

APPLICATIONS

Cleans, sanitizes, disinfects and deodorizes hard non-porous surfaces and high-touch areas including: For use in food processing equipment in dairies, breweries, wineries, beverage, food processing plants, produce process water, and cosmetic processing facilities.

TYPICAL ANALYSIS

FORM:.....Liquid
COLOR: .....Clear
ODOR:.....Pungent, vinegar-like
SPECIFIC GRAVITY: 1.10
DENSITY @ 20°C (68°F):.....9.1 lbs/gal
100% SOLUTION pH:.....<1
pH 1% SOLUTION:.....2.38
FLASH POINT (DIN 51584): .....> 98°C (207°F)
FREEZING POINT.....< -12°C (10°F)

DOSAGES

Application Method	Dose
Food Contact Surface	1-4 fl. oz. per 10 gal
Hard Surface	1-2 fl. oz. per 10 gal
Continuous Conveyor Treatment	1-2 fl. oz. per 10 gal
Non-Food Contact Surfaces	1-4 fl. oz. per 10 gal
Non-Food Contact Packaging Equipment	1-4 fl. oz. per 10 gal
Bacteriophage Control	1-2 fl. oz. per 10 gal
Disinfection and cleaning	1-5 fl. oz. per 6 gal
Virucidal	1-5 fl. oz. per 6 gal
Fungicidal	1-5 fl. oz. per 6 gal
Farm Premise	1-5 fl. oz. per 6 gal
Fruit & Vegetable Process Water	0.28-1.25 fl. oz. per 10 gal

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FLUID360™ SOLUTIONS

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MADE IN USA

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LABEL INFORMATION

Directions For Use: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Note: All volumes given in ounces are fluid ounces.
1 fl. oz. = 29.5 ml; 1 gal = 3.784 L; % product X 10,000 = ppm
1 fl. oz. of this product per 10 gallons of water = 72 ppm PAA

SANITIZATION

This product can be used on pre-cleaned surfaces such as equipment, pipelines, tanks, vats, fillers, evaporators, pasteurizers and aseptic equipment in dairies, dairy farms, breweries, wineries, beverage and food processing plants. This product is effective as a sanitizer when solution is prepared in water up to 500 ppm hardness as $CaCO_3$.

Note: For mechanical operations: Prepared use solutions may not be reused for sanitizing but may be reused for other purposes such as cleaning.

For manual operations: Fresh sanitizing solution must be prepared at least daily or more often if the solution becomes diluted or soiled.

Sanitizing Food Contact Surfaces: Prior to sanitizing, remove gross food particles, then wash with a detergent solution, followed by a potable water rinse. Sanitize with a concentration of 1 to 4 fl. oz. of this product per 10 gallons of water (0.078-0.312% v/v as product). At this dilution, this product is effective against *Staphylococcus aureus, Escherichia coli, Escherichia coli O157:H7, Listeria monocytogenes, Salmonella enterica, Cronobacter sakazakii, and Vibrio cholerae,* as well as beverage spoilage organism *Lactobacillus malefermentans.* Use immersion, coarse spray or circulation techniques as appropriate to the equipment. All surfaces must be exposed to the sanitizing solution for at least 60 seconds unless a longer time is specified by the governing sanitary code. Drain thoroughly. Rinse is required.

FINAL SANITIZING BOTTLE RINSE: This product may be used as a final sanitizing rinse at a concentration of 1 to 2 fl. oz. of this product per 10 gallons of water (0.078-0.156% v/v as product). At this dilution, this product is effective against *Staphylococcus aureus, Escherichia coli, Escherichia coli O157:H7, Listeria monocytogenes, Salmonella enterica, Cronobacter sakazakii, Vibrio cholerae, and Lactobacillus malefermentans.* All surfaces must be exposed to the sanitizing solution for at least 60 seconds. Drain thoroughly. Rinse is required.

FINAL BOTTLE AND CLOSURE CLEANING RINSE: This product may be used as a final cleaning rinse for returnable and non-returnable bottles (e.g. glass or PET) and closures not requiring a final food contact surface sanitizing rinse when used at a concentration of 1 to 2 fl. oz. of this product per 10 gallons of water (0.078-0.156% v/v as product). Drain thoroughly. Rinse is required.

ANTIMICROBIAL RINSE OF PRECLEANED OR NEW RETURNABLE OR NON-RETURNABLE CONTAINERS: To reduce the number of beverage spoilage organisms, P*ediococcus damnosus, Lactobacillus malefermentans, Saccharomyces cerevisiae, Byssochlymas fulva and Aspergillus niger,* apply this product at a concentration of 9 to 26 fl. oz. per 14 gallons of purified water (0.5 to 1.45% v/v as product) at a temperature of 45° to 60°C for at least 7 seconds. After thorough draining, rinse interior container surfaces with a disinfected water rinse free of pathogenic bacteria.

SANITIZING HARD, NON-POROUS, NON-EDIBLE OUTSIDE SURFACES OF AIRTIGHT, SEALED PACKAGES CONTAINING FOOD OR NON-FOOD PRODUCTS: This product may be used as a final sanitizing rinse for hard, non-porous outside surfaces of airtight, sealed packages containing food or non-food products at a concentration of 1 to 2 fl. oz. of this product per 10 gallons of water (0.078-0.156% v/v as product). The treated hard, non-porous, non-edible packaging, such as food wraps and meat casings, must be removed and discarded before packaged food products are further processed or consumed. All surfaces must be exposed to the sanitizing solution for at least 60 seconds. Drain thoroughly. Rinse is required. This is not to be used on porous surfaces.

CLEANING HARD SURFACE: For hard surface cleaning applications, remove gross soil particles from surfaces, then thoroughly clean surfaces at a concentration of 1 to 4 fl. oz. of this product per 10 gallons of water (0.078-0.312% v/v as product). Use immersion, coarse spray or circulation techniques as appropriate to clean surfaces. Allow surfaces to drain thoroughly. Do not rinse.

CONTINUOUS TREATMENT OF CONVEYORS: Wash, rinse and sanitize conveyor equipment. During processing, apply this product at a concentration of 1 to 2 fl. oz. of this product per 10 gallons of water (0.078-0.156% v/v as product) to conveyor with suitable feeding equipment. At this dilution, this product is effective against *Staphylococcus aureus, Escherichia coli, Escherichia coli O157:H7, Listeria monocytogenes, Salmonella enterica, Cronobacter sakazakii, and Vibrio cholerae.* Controlled volumes of this product are applied to return portion of conveyor through nozzles located as to permit maximum drainage of this product from equipment and to prevent puddles on top of belt. During interruptions in operations, coarse spray the processing equipment with this product solution at a concentration of 1 to 2 fl. oz. of this product per 10 gallons of water (0.078-0.156% v/v as product). Conveyor equipment must be free of product when applying coarse spray. Conveyor surface must be exposed to the sanitizing solution for at least 60 seconds. Rinse is required.

SANITIZING NON-FOOD CONTACT SURFACES: Remove gross food particles, then wash with this product up to 4 fl. oz. per 10 gallons of water (up to 0.312% v/v or 3,120 ppm product). Drain thoroughly. Then sanitize non-food contact surfaces such as floors, walls, tables, chairs, benches, drains, troughs, and drip pans with 1 to 4 fl. oz. of this product per 10 gallons of water (0.078-0.312% v/v as product). At this concentration the product is effective against *Staphylococcus aureus, Klebsiella pneumoniae, Escherichia coli O157:H7, Listeria monocytogenes, Salmonella enterica,* in 500 ppm hard water. This product is also effective against beverage spoilage organisms: *Aspergillus niger, Saccharomyces cerevisiae, Pediococcus damnosus, and Lactobacillus malefermentans.* All surfaces must be exposed to the sanitizing solution for a period of not less than 3 minutes. Drain thoroughly and allow to air dry. Do not rinse.

SANITIZING NON-FOOD CONTACT PACKAGING EQUIPMENT: Prior to use of this product, remove gross soil particles from surfaces. Wash with a detergent solution, rinse thoroughly with potable water. For sanitization against *Staphylococcus aureus, Klebsiella pneumoniae, Escherichia coli O157:H7, Listeria monocytogenes and Salmonella enterica* as well as beverage spoilage organisms, *Aspergillus niger, Pediococcus damnosus, Lactobacillus malefermentans and Saccharomyces cerevisiae,* apply at a concentration of 1 to 4 fl. oz. of this product per 10 gallons of water (0.078-0.312% v/v as product) of this product to surfaces and allow to remain visibly wet for a least 3 minutes. Allow surfaces to drain thoroughly before operations are resumed. Drainage may be followed by an optional potable or sterile water rinse.

BACTERIOPHAGE CONTROL: When applied to pre-cleaned surfaces, this product will reduce the incidence of *Lactococcus lactis subsp. Lactis, Lactococcus lactis subsp. Cremoris, and Streptococcus thermophilus bacteriophage* in cheese manufacturing establishments by spraying or immersion of equipment at concentrations of 1-2 fl. oz. per 10 gallons (0.078-0.156% v/v as product) of water. All surfaces must be exposed to the solution for at least 60 seconds. Drain thoroughly. Do not rinse.

DISINFECTION: This product disinfects as it cleans in one operation. This product can be used to disinfect floors, walls and other hard, non-porous surfaces such as tables, chairs, counter tops, bathroom fixtures, sinks, shelves, racks, carts, refrigerators, coolers, tile, linoleum, vinyl, glazed porcelain, plastic (such as polypropylene and polyethylene), stainless steel, or glass. For inside of refrigerators or coolers: Allow the surface to adjust to room temperature before disinfection.

Areas of Use: Use this product in veterinary clinics, animal life science laboratories, industrial facilities, office buildings, recreational facilities, retail and wholesale establishments.

COMBINATION DISINFECTION AND CLEANING: This product is effective against *Staphylococcus aureus and Salmonella enterica* at concentration of 1 to 5 fl. oz. per 6 gallons (0.13%- 0.65% v/v as product) in water up to 500 ppm hardness as $CaCO_3$ and 5% blood serum on hard non-porous surfaces. For visibly soiled areas a pre-cleaning step is required. Apply solution with mop, cloth, sponge, brush, scrubber, or coarse spray device or by soaking so as to wet all surfaces thoroughly. Allow to remain visibly wet for minutes, then remove solution and entrapped soil with a clean wet mop, cloth, or wet vacuum pickup. Prepare a fresh solution daily or when it becomes soiled or diluted. Rinse food contact surfaces that come in contact with food with potable water prior to reuse.

Virucidal: At 1 to 5 fl. oz of this product per 6 gallons of water (0.13% to 0.65% v/v as product) this product is effective against Influenza B, Influenza A (H3N2), Influenza A (H1N1), Avian Influenza A (H3N2) and Reovirus on hard inanimate surfaces when used at 20°C with a 5 minute contact time in the presence of water up to 500 ppm hardness as $CaCO_3$ and organic soil. Apply as directed under disinfection.

Fungicidal: This product can be used on hard, non-porous inanimate surfaces such as shower room floors, locker room benches, shower stalls and bath mats. At 1 to 5 fl. oz of this product per 6 gallons of water (0.13% to 0.65% v/v as product) this product is effective against *Trichophyton mentagrophytes* (Athletes Foot Fungi) and Candida albicans (pathogenic yeast) in the presence of protein (5% blood serum) in 500 ppm hard water with a 5 minute contact time. Apply as directed under disinfection.) in 500 ppm hard water with a 5 minute contact time. Apply as directed under disinfection.

DISINFECTING PHARMACEUTICAL AND COSMETIC SURFACES: This product can be used on hard, non-porous, environmental surfaces such as floors, walls and processing equipment in pharmaceutical and cosmetic processing facilities. This product is effective against *Staphylococcus aureus and Salmonella enterica* at 1 to 5 fl. oz of this product per 6 gallons (0.13% to 0.65% v/v as product) in water up to 500 ppm hardness as $CaCO_3$ and 5% blood serum. For visibly soiled areas a pre-cleaning step is required. Rinse all surfaces thoroughly with the disinfecting solution and maintain a contact time of at least 5 minutes. Product contact surfaces must be rinsed with sterile water. **Special**

POULTRY HOUSE DISINFECTION: This product is effective against the Avian Influenza A (H3N2) virus.

Special Instructions for Inactivating Avian Influenza A.

1. Remove all poultry and feeds from premises, trucks, coops and crates.
2. Remove all litter and droppings from floors, walls, and surfaces of facilities occupied or traversed by poultry.
3. Empty all troughs, racks and other feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or detergent and rinse with water.
5. Saturate surfaces using this product at a concentration of 1 to 5 fl. oz per 6 gallons water (0.13% to 0.65% v/v as product) for a period of 5 minutes.
6. Ventilate buildings, coops and other closed spaces. Do not house poultry or employ equipment until treatment has been absorbed, set or dried.
7. Thoroughly scrub treated feed racks, troughs, automatic feeders, fountains and waterers with soap and detergent and rinse with potable water before reuse

FARM PREMISE DISINFECTION: This product is effective against the Avian Influenza A (H3N2) virus.

Special Instructions for inactivating Avian Influenza A.

1. Remove all animals and feed from premises, vehicles and enclosures.
2. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls chutes, and other facilities and fixtures occupied or traversed by animals.
3. Empty all troughs, racks, and other feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or detergent and rinse with water.
5. Saturate surfaces using this product at a concentration of 1 to 5 fl. oz per 6 gallons water (0.13% to 0.65% v/v as product) for a period of 5 minutes Immerse all halters, ropes, and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing littler and manure.
6. Ventilate buildings, cars, boats and other closed spaces. Do not house livestock or employ equipment until treatment has been absorbed, set or dried. Thoroughly scrub all treated feed racks, mangers, troughs automatic feeders, fountains, and waterers with soap and detergent and rinse with potable water before use.

NOTE: This product in its use solution is compatible with stainless steel, plastic and aluminum surfaces. If product is intended to be used on any other surface, it is recommended that you apply product to a smaller test area to determine compatibility before proceeding with its use.

Treatment of Fruit and Vegetable Process Water Systems: This product can be used in water or ice that contacts raw or fresh fruits and vegetables for the control of spoilage and decay causing bacteria and fungi in commercial operations and packinghouses.

Batch, Continuous or Spray System Processes: Fill vessel containing fruits and vegetables with known amount of water. Ensure that water is circulating in vessel if using the submersion method. Add this product to no more than 100 ppm residual peroxyacetic acid to the use solution in accordance with 40 CFR 180.1196(a). The recommended use range is between 20-90 ppm as peroxyacetic acid (0.28-1.25 fl. oz. per 10 gallons of water). The final concentration necessary to accomplish the intended task will vary from plant-to-plant. The fruits and vegetables can be continuously sprayed or submerged (dipped) in the resulting solution. Periodic or continuous additions of this product to maintain the required concentration may be added as necessary. Apply this product during the washing, chilling, or physical cleaning processes, including the roller-spreader, washer or brush washer manifold, dip tank, or sorting processes. Contact time of 60 seconds is required to ensure efficacy. A potable water rinse is not required.

Fogging in Filling, Packaging, and Dispensing Rooms or Storage Sheds (Not for use in California): This product can be applied by fogging to control the growth of non-public health microorganisms and fungi that may cause decay and/or spoilage on raw, post-harvest fruits and vegetables during the post-harvest storage and process.

1. Use in secure fruit and vegetable storage system. Vacate all personnel prior to fogging. Post notice of when personnel can re-enter. After application, purge room with fresh air to replace treated air. Ensure room is properly ventilated. Personnel may re-enter 4 hours after system has been properly aired. Ensure there is no strong odor characteristic if vinegar before having personnel return to work area.
2. Fog areas to be treated using 2.0-11.7 fl. oz. of this product into humidified air per 1000 cu. ft. of room volume for a minimum of 4 hours. Inject concentrate into water used for fogging of postharvest fruits and vegetables in storage using any type of fogging equipment including: cold foggers, thermal foggers, low pressure air assisted and high pressure fog systems. Adjust water level accordingly to allow fogging apparatus to fog for a minimum of 4 hours.

NOTE: This product in its use solution is compatible with stainless steel, plastic and aluminum surfaces. If product is intended to be used on any other surface, it is recommended that you apply product to a smaller test area to determine compatibility before proceeding with its use.

This product degrades with age depending on the storage conditions and temperature. KEEP PRODUCT AWAY FROM HEAT OR DIRECT SUNLIGHT. Use a test kit and increase dosage as necessary to obtain the required level of active ingredients.

EPA Reg. No. 63838-28-70707

ACTIVE INGREDIENT:	
Peracetic Acid	8.4%
Hydrogen Peroxide	7.6%
Octanoic Acid	5.1%
INERT INGREDIENTS	78.9%
TOTAL	**100.0%**

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