PERACETIC ACID 5% ANTI-MICROBIAL AGENT & POWERFUL OXIDANT

Peracetic acid (PAA) CAS-No. 79-21-0
UN No: 3109

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for Institutional/Industrial sanitizing of previously cleaned hard, non-porous food contact surfaces in:

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

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for Institutional/Industrial sanitizing of previously cleaned hard, non-porous food contact surfaces such as:

- Eating, Drinking, and Food Preparation Utensils
- Countertops and Food Preparation Surfaces
- Tableware
- Plastic, Glass and Metal Bottles (rinse)

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for sanitizing of hard, inanimate, non-food contact surfaces (general environmental surfaces)

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for use in the disinfection of hard, non-porous surfaces in general commercial and medical environments such as:

- Hospitals, Health Care Facilities, Veterinary Hospital/Clinics, Animal Life Science Labs, Pharmaceutical Facilities and Equipment
- Schools, Colleges, Recreational Facilities, Office Buildings
- Livestock Premises, Poultry Premises, Poultry Hatcheries, Animal Housing Facilities
- Retail and Wholesale Establishments
- Bathroom Premises

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for use as a coarse spray for surfaces to be sanitized or disinfected.

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for use in fogging applications as an adjunct to acceptable manual cleaning and disinfecting of room surfaces.

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for use as an antimicrobial rinse to control beverage spoilage microorganisms.

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant can be used with HRS foaming agent for food contact application in compliance with applicable regulations.

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for use in the sanitization of ultra filtration and reverse osmosis (RO) membranes and their associated distribution systems.

KEEP OUT OF REACH OF CHILDREN

DANGER

For Industrial Use Only

Active Ingredients: Peroxyacetic Acid........................................5%
Hydrogen Peroxide..................................................20%
Inert Ingredients: ......................................................75%
Total .................................................................100.0%

Precautionary Statements
Hazards to Humans and Domestic Animals

DANGER – Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed. May be fatal if absorbed through the skin. Do not get in eyes, on skin or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses), clothing and chemical resistant gloves. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse

Physical or Chemical Hazards – Strong oxidizing agent. Mix only with water. PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is not combustible; however, at temperatures exceeding 69°C, decomposition occurs releasing oxygen. The oxygen released could initiate or promote combustion of other materials.

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

First Aid – 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.
● Call a poison control center or doctor for treatment advice.

If on skin or clothing ● Take off contaminated clothing.
● Rinse skin immediately with plenty of water for 15-20 minutes.
● Call a poison control center or doctor for treatment advice.

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

If swallowed ● Call poison control center or doctor immediately for treatment advice.
● Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor.
● Do not give anything by mouth to an unconscious person.

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

Disclaimer

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**NEVER RETURN PERACETIC ACID 5% ANTI-MICROBIAL AGENT & POWERFUL OXIDANT TO THE ORIGINAL CONTAINER AFTER IT HAS BEEN REMOVED.** Avoid all contaminants, especially dirt, caustic, reducing agents, and metals. Contamination and impurities will reduce shelf life and can induce decomposition. In case of a decomposition, isolate container, douse container with cool water and dilute with large volumes of water.

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

**Procedure for Leak or Spill**

Stop leak if this can be done without risk. Shut off ignition sources; no flames, smoking, flares, or spark producing tools. Keep combustible and organic materials away. Flush spilled material with large quantities of water. Undiluted material should not enter confined spaces.

**Disposal**

If material has been spilled, an acceptable method of disposal is to dilute with at least 20 volumes of water followed by discharge into suitable treatment system in accordance with all local, state, and Federal environmental laws, rules, regulations, standards, and other requirements. Because acceptable methods of disposal may vary by location, regulatory agencies should be contacted prior to disposal.

PERACETIC ACID 5%® Anti-microbial agent & powerful oxidant, which is to be discarded, should be disposed of as hazardous waste after contacting the appropriate local, state, or Federal agency to determine proper procedures.

**Container Disposal**

Empty drums are not returnable to TPL unless special arrangements have been made. Triple rinse drums with water. Dispose of drums in accordance with local, state, and Federal regulations. **DO NOT REUSE.**

**Directions for Use**

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

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

**Sanitizing Hard, Non-Porous Food Contact Surfaces**

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is an effective sanitizer against Staphylococcus aureus, Escherichia coli, and Salmonella typhimurium.

Sanitize establishment immediately after use:
1. Remove gross particulate matter with a warm water flush.
2. Wash equipment with detergent or cleaning solution.
3. Rinse equipment with potable water.
4. Prepare PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution by adding 9 to 15 ml to 5 liters potable water. This provides 90 to 150 ppm peroxyacetic acid and 342 to 570 ppm hydrogen peroxide.
5. Fill closed systems with diluted sanitizer solution and allow a contact time of one (1) minute. If sanitizing at temperatures of 5°C (40°F) or lower, use 5.5 ml of PERACETIC ACID 5% to 5 liters of potable water.
6. If sanitizing against Listeria monocytogenes, use 10 to 15 ml of this product to 5 liters of potable water. This will provide 100 to 150 ppm of peroxyacetic acid and 380 to 570 ppm of hydrogen peroxide.
7. For open or not completely closed systems, use a coarse spray, mop/wipe or flood technique to apply the solution to the surface and allow a contact time of one (1) minute. Allow surfaces to drain thoroughly before resuming operation.

**Eating Establishment Sanitizing**

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is an effective sanitizer against Staphylococcus aureus, Escherichia coli, and Salmonella typhimurium.

Sanitize establishment immediately after use:
1. Scrap/pretreat plates, utensils, cups, glasses, etc. whenever possible.
2. Wash all items with a detergent.
3. Rinse thoroughly with potable water.
4. Prepare PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution by adding 9 to 15 ml of the product to 5 liters of potable water. This will provide 90 to 150 ppm peroxyacetic acid and 342 to 570 ppm hydrogen peroxide.
5. Immerse all items for at least 2 minutes or for a contact time.
6. If sanitizing against Listeria monocytogenes, use 10 to 15 ml of this product to 5 liters of potable water. This will provide 100 to 150 ppm of peroxyacetic acid and 380 to 570 ppm of hydrogen peroxide.
7. Place all sanitized items on a rack or drainboard to drain adequately. Air dry if items will not be reused immediately.

**Sanitizing Tableware**

For sanitizing tableware in low to ambient temperature warewashing machines, inject the diluted PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution (9 to 15 ml of the product to 5 liters of potable water) into the final rinse water. Allow treated surfaces to air dry.

**Final Sanitizing Bottle Rinse**

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant may be used as a final sanitizing rinse for plastic, glass or metal returnable and non-returnable bottles / cans.

1. Wash bottles with detergent or cleaning solution and rinse with potable water.
2. Rinse bottles/cans with a solution prepared by mixing 9 to 15 ml of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant to 5 liters of potable water. Allow to drain dry.
3. Allow to drain adequately.

**Sanitization of Hatching Eggs**

1. Prepare a dilute solution by adding 9 to 15 ml of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant to 5 liters of potable water.
2. Apply dilute solution, as eggs are gathered or prior to setting, as a coarse spray or flood so as to lightly wet all egg shell surfaces.
3. Allow to drain dry.

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Sanitization of Conveyors for Meat, Poultry, Seafood, Fruits, and Vegetables

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is an effective sanitizer against Staphylococcus aureus, Escherichia coli, and Salmonella typhimurium.

For use in the static or continuous washing, rinsing and sanitizing of conveyor equipment, peelers, collators, slicers, saws, etc.

1. Remove all products from equipment if during treatment the sanitizer will directly contact the items.
2. Prepare PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution by adding 9 to 15 ml to 5 liters of potable water.
3. Apply sanitizer solution to the return portion of the conveyor or to the equipment using a coarse spray or other means of wetting the surfaces. Treat for at least one (1) minute. Control the volume of solution so as to permit maximum drainage and to prevent puddles. The conveyor may still be damp when food contact occurs.
4. If sanitizing against Listeria monocytogenes, use 10 to 15 ml of this product to 5 liters of potable water.
5. Allow equipment to drain adequately before reusing; a dry surface is not required.

General Environmental Surfaces Sanitization (Non-Food Contact)

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is an effective inanimate hard, non-food contact surface sanitizer against Staphylococcus aureus, Klebsiella pneumoniae, and Saccharomyces cerevisiae.

Sanitization of surfaces such as floors, walls, tables, chairs, benches, drains etc., can be accomplished, using the following procedures:

1. Remove gross filth with a cleaner or other suitable detergent.
2. Add 3 to 30 ml of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant to 5 liters of potable water to prepare a solution containing 30 to 300 ppm of peroxyacetic acid and 114 to 1140 ppm of hydrogen peroxide.
3. Soak items in the diluted solution using mop/wipe, coarse spray, flood techniques and allow contact for at least 5 minutes.
4. Allow items and/or surfaces to drain adequately or air dry.

Fogging

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for sanitizing hard room surfaces, as an adjunct to acceptable manual cleaning and disinfecting of room surfaces.

1. Prior to fogging, remove or carefully protect all food products and packaging materials.
2. Ensure room is properly ventilated. Vacate all personnel from the room during fogging and for a minimum of 2 hours after fogging. Ensure there is no strong odor, characteristic of acetic acid, before having personnel return to work area.
3. Fog areas using one quart per 1000 cu.ft. of room area with a 0.30%, (9 ml per 1 liter of water) PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution.
4. Allow surfaces to drain thoroughly before operations are resumed.

Surface Disinfection

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is an effective disinfectant against gram positive and negative bacteria (vegetative forms) such as Staphylococcus aureus, Salmonella choleraesuis, Pseudomonas aeruginosa, and may be used in general commercial and medical environments to clean, disinfect, and deodorize hard, non-porous inanimate surfaces, such as:

- Floors, walls, and other non-porous surfaces such as tables, chairs, counter tops, garbage cans/bins, bathroom fixtures, sinks, bed frames, shelves, racks, carts, refrigerators, coolers, tile, linoleum, vinyl, asphalt, porcelain, plastic (such as polypropylene and polyethylene), stainless steel or glass.
- Areas of use in hospitals, surgical and obstetrical suites; operating tables, housekeeping services; physical therapy departments; nursing homes, health care facilities, autopsy facilities, pharmaceutical and chemical processing facilities and equipment.
- Schools, colleges, industrial facilities, dietary areas, office buildings, recreational facilities, retail and wholesale establishments.

Animal hospitals, veterinary clinics, animal life science laboratories, kennels, kennel runs, cages, feeding and watering equipment, pet shops, zoos, pet animal quarters, poultry premises, trucks, hatcheries, and live stock quarters.

Prepare PERACETIC ACID 5% Anti-microbial agent & powerful oxidant disinfecting solution by adding 28 to 263 ml of the product to 5 liters of potable water. This will provide 280 to 2632 ppm peroxyacetic acid and 1064 to 9994 ppm hydrogen peroxide. Remove gross filth from surfaces to be disinfected by cleaning with a detergent or suitable cleaning product. Rinse with clean water. Apply PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution by wiping, mopping, or as a coarse spray. Allow to soak for at least 10 minutes, then drain treated surfaces. Applications involving treatment of food contact surfaces require a sterile or potable water rinse following disinfection.

Disinfection and Deodorizing of Animal Housing Facilities, Poultry Premises, Coops, Trucks and Crates

1. Remove all animals / poultry from the facilities / items / areas to be disinfected.
2. Remove gross particulate, litter, droppings etc. with a warm water flush or by sweeping.
3. Empty all troughs, racks, and other feeding and watering equipment.
4. Wash all items thoroughly with detergent or cleaning solution and rinse with potable water.
5. Prepare a disinfecting solution by adding 28 ml of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant to 5 liters of potable water. This provides 280 ppm of peroxyacetic acid and 1064 ppm of hydrogen peroxide.
6. Before starting the treatment ensure that the work area is well ventilated.
7. Saturate surfaces with the diluted product for a period of at least 10 minutes.
8. Thoroughly scrub treated feed equipment i.e., feed racks, troughs, fountains etc. with a detergent and rinse with potable water.
9. Do not return animals / poultry or use equipment until solution has been completely absorbed or air dried.

Poultry Hatchery Disinfection

1. Remove remaining eggs and chicks, and all gross particulate and other hatchling-related debris.
2. Thoroughly wash all surfaces, with a recommended detergent or cleaning solution and then rinse with potable water.
3. Prepare the disinfecting solution by adding 28 ml of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant to 5 liters of potable water.
4. Before starting the treatment , ensure that the work area / room and any closed spaces are well ventilated.
5. Apply the disinfecting solution with a mop, cloth, brush or coarse spray, keeping surfaces wet for 10 minutes.
6. Air dry before re-introducing eggs.

Antimicrobial Rinse of Pre-Cleaned or New Returnable or Non-Returnable Containers: to reduce the number of non-pathogenic beverage spoilage organisms such as Aspergillus versicolor, Byssochlamys falva, Pediciococcus darmanns, Lactococcus buchneri, and Saccharomyces cerevisiae.

1. Prepare PERACETIC ACID 5% Anti-microbial agent & powerful oxidant by adding 62 to 263 ml to 5 liters potable water. This provides 620 to 2632 ppm peroxyacetic acid and 2356 to 10,000 ppm hydrogen peroxide.
2. Apply antimicrobial rinse at a temperature of 40°C to 60°C, and allow a minimum five-second contact period.
3. Allow containers to drain thoroughly, and then rinse with sterile or potable water.

Note: Before using PERACETIC ACID 5% Anti-microbial agent & powerful oxidant to sanitize metal surfaces, it is recommended that the diluted solution be tested on a small area to determine compatibility.

In all applications, always prepare a new sanitizing/disinfecting solution daily to ensure effectiveness. Do not reuse sanitizing/disinfecting solutions. Dispose of any unused sanitizing/disinfecting solution.

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Batch Sanitization of Ultra-Filtration and Reverse Osmosis (RO) Membranes

PERACETIC ACID 5% Anti-microbial agent & powerful oxidant is for use in the sanitization of ultra filtration, medical and non-medical Institutional/industrial reverse osmosis (RO) membranes and their associated distribution systems. This product is not for use in kidney dialysis reprocessing equipment.

This product has been shown to be an effective disinfectant when tested by AOAC and EPA methods. This product may not totally eliminate all vegetative microorganisms in reverse osmosis membranes and their associated piping systems due to their construction and/or assembly, but can be rolled upon to reduce the number of microorganisms to acceptable levels when used as directed. Check with equipment manufacturer for membrane compatibility with PERACETIC ACID 5% Anti-microbial agent & powerful oxidant.

1. Remove biological or organic fouling from the membrane or other parts of the system with an appropriate cleaner.
2. Flush the system with RO permeate or similar quality water.
3. Remove mineral deposits with an acidic cleaner prior to sanitizing the membranes.
4. Flush the system with RO permeate or similar quality water.
5. Prepare an appropriate volume of 1% solution of the product. (340 fluid gram per 37.85 liter water) This will provide 526 ppm of peroxycetic acid and 2238 ppm hydrogen peroxide.
6. Fill the entire water circuit to be sanitized with the dilute solution and allow the solution to reach a minimum of 20 °C (69 °F)
7. Recirculate the dilute solution of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant for a minimum of 10 minutes.
8. Allow membrane elements to soak in the solution for a minimum of 20 minutes.
9. Rinse the RO system and test for residuals to ensure that there is less than 3 ppm peroxygen. Residuals can be reduced by diverting product water to drain.

Batch Sanitization of Piping Systems Associated with RO Membranes

1. Isolate incompatible equipment from piping system. This includes activated carbon filters and ion exchange equipment. Turn off power to ultraviolet light units.
2. Estimate total volume of water contained in the system (tanks, rinse stations and piping). Prepare an appropriate volume of 1.0 to 1.5% PERACETIC ACID 5% Anti-microbial agent & powerful oxidant solution by adding 3.78 to 5.67 liters of the product for every 37.85 liters of solution prepared. Use RO permeate or similar quality water for dilution. This will provide 561 to 842 ppm peroxycetic acid and 2238 to 3584 ppm hydrogen peroxide.
3. Recirculate the dilute PERACETIC ACID 5% Anti-microbial agent & powerful oxidant Liquid Sanitizing solution through the system for a minimum of 4 hours. Process usage valves should be opened and closed to expose internals to the PERACETIC ACID 5% Anti-microbial agent & powerful oxidant.
4. Completely drain the system of dilute PERACETIC ACID 5% Anti-microbial agent & powerful oxidant. Thoroughly rinse the system by filling with RO permeate or similar quality water and Recirculate before drainage. Repeat the process until test for residuals indicates there is less then 3 ppm peroxygen.

Continuous/Intermittent Additions to Minimize the Accumulation of Biological Matter Between intermittent Sanitizing Episodes in Piping System Associated with RO Membranes.

1. PERACETIC ACID 5% Anti-microbial agent & powerful oxidant, as received or diluted, may be added continuously to the feed water stream between system sanitizing episodes, to aid in minimizing the regrowth/accumulation of biological matter. The peroxygen residual in the system which will be effective will vary with the design and usage characteristics of the system. Adjust the addition rate of PERACETIC ACID 5% Anti-microbial agent & powerful oxidant or the solution and periodically monitor residual peroxygen so that the desired effect is obtained.
2. For continuous addition do not exceed 20 ppm PERACETIC ACID 5% Anti-microbial agent & powerful oxidant, (2.83 fluid gram per 151 liters water). This will give 1 ppm peroxycetic acid and 4.5 ppm hydrogen peroxide. For intermittent feed do not exceed 2000 ppm PERACETIC ACID 5% Anti-microbial agent & powerful oxidant, (79.38 fluid grams per 37.85 liters water). This will give 123 ppm peroxycetic acid and 523 ppm hydrogen peroxyde.

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