



Kchemical
Specialty Chemicals



Antimicrobial Solution

PERASHIELD 5.6%

EPA Reg No. 63838-1-102118 | EPA Est. No. 63838-CA-01: 63838-AR-001

PeraShield 5.6% is a peroxyacetic acid-based sanitizer/disinfectant developed for the following uses: **Bacteria, Fungi, Slime, Odor and Algae control in agricultural waters and for Foliar Spraying.**

Active Ingredients	
Peroxyacetic Acid	5.6%
Hydrogen Peroxide	26.5%
Inert Ingredients	67.9%
Total	100%

Before Using This Product, Please Read This Entire Label Carefully

KEEP OUT OF REACH OF CHILDREN DANGER PELIGRO

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

UN3098

Oxidizing liquid, corrosive, n.o.s. (contains hydrogen peroxide and peroxyacetic acid mixture, stabilized), 5.1 (8), PGII

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER CORROSIVE

Causes irreversible eye damage and skin burns. Harmful if absorbed through skin, if swallowed, or if inhaled. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Wear goggles, face shield, coveralls worn over long-sleeved shirt and long pants, socks, chemical-resistant footwear, and waterproof gloves (Barrier Laminate or Butyl Rubber or Nitrile Rubber or Neoprene Rubber or Natural Rubber or Polyethylene or PVC or Viton, Category A) 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 before reuse.

PERSONAL PROTECTIVE EQUIPMENT

Handlers who may be exposed to the undiluted product through mixing, loading, application, or other tasks must wear: coveralls over long-sleeved shirt and long pants, rubber gloves, chemical resistant footwear plus socks, and protective eyewear (goggles or face shield). Handlers who may be exposed to the diluted product through application or other tasks must wear: long-sleeved shirt and long pants, and shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

FIRST AID:

IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15–20 minutes • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye • Call a poison control center or doctor for treatment advice
IF ON SKIN OR CLOTHING	• Take off contaminated clothing • Rinse skin immediately with plenty of water for 15–20 minutes • Call a poison control center or doctor for treatment advice
IF INHALED	• Move person to fresh air • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible • Call a poison control center or doctor for treatment advice
IF SWALLOWED	• Call a 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
QUESTIONS? 1-209-581-9576	Have the product container or label with you when calling a poison control center or doctor or going for treatment
NOTE TO PHYSICIAN	Probable mucosal damage may contraindicate the use of gastric lavage.

PHYSICAL OR CHEMICAL HAZARDS

STRONG OXIDIZING AGENT. CORROSIVE: Mix only with water and adjuvant if applicable below 140° F. Product must be diluted in accordance with label directions prior to use. At temperatures exceeding 156°F, decomposition occurs releasing oxygen. The oxygen released could initiate combustion.

USER SAFETY RECOMMENDATIONS

Users must wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco or using the toilet. Users must remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds, fish and aquatic invertebrates. Caution must be used when applying indoors because pets may be at risk. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of the National Pollutant Discharge 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 plant authority.

DIRECTIONS FOR USE

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE) and Restricted-Entry Interval (REI). The requirements in this box only apply to the uses of this product that are covered by the Workers Protection Standard. There is a restricted entry of zero (0) hours for this product.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. Keep unprotected persons out of treated areas until sprays have dried.

Note: All volumes given in ounces are fluid ounces.

AGRICULTURAL or HORTICULTURAL USES

Upon soil contact, this product decomposes rapidly to oxygen, carbon dioxide and water. This product may be harmful to fish if exposed on a continuous basis at concentrations of 0.5 ppm or more of active peroxyacetic acid. 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. If open pouring of this product is required pour product as close to the surface of the water as possible to reduce odor exposure. Spray lines, hoses and tank must be clean before using this product. Make sure no iron or yellow metals are in contact with the spray solution at any time. Only stainless steel or plastic contact materials may be used in your spray rig. Compatibility: This product is compatible as a direct injection or tank-mix with many commonly used pesticides, fertilizers, adjuvants and non-ionic surfactants but has not been fully evaluated with all of these. Do not direct inject or tank mix this product in to the irrigation system or in spray tank with pesticides, surfactants or fertilizers before conducting a compatibility test to show it is physically compatible, effective and noninjurious under your use conditions. Do not tank mix this product with copper or other pesticides containing metals at a dilution rate stronger than 1:100. To ensure compatibility, evaluate them prior to use as follows: Using a suitable container, add proportional amounts of product to water. Add wettable powders first, followed by water dispersible granules, then by liquid flowables and lastly, emulsifiable concentrates. Mix thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

Phytotoxicity Test Procedure:

- Select healthy typical plants of each cultivar or type on which the pesticide will be used.
- Read the pesticide label to determine the application site (roots or leaves), the rate of application (amount per gallon/liter), and the interval of application (number of days between application).
- Use clean spray equipment and perform the test during the time of day when most of your pesticide applications will occur.
- Have one control set of plants which are sprayed with water only. Control sprayed plants must be sprayed under the same conditions as pesticide-sprayed plants.
- Wait for signs of phytotoxicity before determining that a pesticide is safe. Phytotoxic effects can range from slight burning or browning of leaves to death of the plant. Sometimes damage appears as distorted leaves, fruit, flowers, or stems.

Treatment of Irrigation Water Systems (sand filters, humidification systems, storage tanks, ponds, reservoirs, canals, drip and sprinkler systems) (Not for Use in New York): For the control of odor, sulfides, non-pathogenic bacteria, slime and algae in water systems, apply this product at 0.4–2 oz. per 100 gal of water (2–10 ppm peroxyacetic acid). This feed rate equals 0.31–1.6 gal per 10,000 gallons of water. Repeat dose as necessary to maintain control, which will vary with seasonal conditions. For prevention of algae some systems may 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 per 50 gallons of water (10–20 ppm peroxyacetic acid). This feed rate equals 1.5–3 gal per 10,000 gallons of dilution water. When required, during normal irrigation cycles, use this product at the recommended dose for a minimum of 30 minutes. After an irrigation cycle do not flush the lines.

Spray Tank Treatment for Agricultural Water: In accordance with the Food Safety Modernization Act (FSMA), agricultural water applied to a growing food crop must be treated to within the microbial water quality profile (MWQP). For the control of odor, sulfides, non-pathogenic bacteria, slime and algae add 2 to 10 ppm PAA (0.4–2 fl. oz. per 100 gal) to each spray tank of agricultural water to achieve hygienic conditions. These waters include municipal water, ground, well water or surface waters, rivers, streams, canals, lakes, ponds.

Greenhouses: This product can be used to suppress/control algae and slime formations in and around greenhouses. For normal use in various process, irrigation or sprinkler watering systems, this product may be used at 1:15,000 to 1:1,900 dilutions (4–33 ppm as peroxyacetic acid). Heavily fouled systems, such as evaporative coolers or irrigation/drip lines, may need shock doses of up to 100 ppm as peroxyacetic acid (1:630 dilution).

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

Pre-Plant Dip Treatment: Use this product for the control of damping-off, root disease and stem rot disease caused by *Pythium* (root rot) – *Phytophthora* (blights, rots) – *Rhizoctonia* (blight, stem rot) *Fusarium* (root-rot, leaf spot, Pink Snow Mold) – *Thielaviopsis* (black root rot), on seeds, seedlings, bulbs, or cuttings. Remove dead or dying foliage prior to dipping.

- Use 20 fl. oz. per 50 gallons of water.
- Immerse plants or cuttings; remove and allow to drain. Do not rinse.
- Excessive foaming or bubbling during the dipping process is an indication of high levels of disease contamination.

Seed Treatment: Use this product for the control of damping-off, root disease and stem rot disease caused by *Pythium* (root rot) – *Phytophthora* (blights, rots) – *Rhizoctonia* (blight, stem rot) *Fusarium* (root-rot, leaf spot, Pink Snow Mold) – *Thielaviopsis* (black root rot), on seeds of seed sprout crops such as mung bean, red clover, soybeans and alfalfa, and on crops grown exclusively for seed for planting.

- Use 20 fl. oz. per 50 gallons of water.
- Immerse seeds and let soak for two minutes; remove and allow to drain. Do not rinse. Plant seed according to seed package directions.

Soil Applications: This product is effective in the control of the following soil-borne plant pathogens: *Fusarium* (root-rot, leaf spot, Pink Snow Mold) – *Phytophthora* (blights, rots) – *Pythium* (root rot) – *Rhizoctonia* (blight, stem rot) – *Verticillium* (wilt). Use this product as a direct soil treatment, as a pre-plant application, at seeding or transplanting, and as a periodic soil treatment throughout the plant's life up to the day of harvest. The performance of this product is not affected by fumigation. Use this product on fumigated and unfumigated soil.

Soil Treatment Prior to Seeding or Transplanting: Cultivate the soil prior to treatment. Break-up compacted soil and clods to loosen soil completely. Mix 102 fl. oz. of this product per 100 gallons of water to yield approximately 50 ppm PAA. Make banded or broadcast applications of 25 to 100 gallons of solution per acre-row either prior to planting or at the time of planting. This product will not harm seedlings or plants when applied at labeled rates. In fields with a history of disease pressure, use the 100 gallons of mixed solution per acre-row rate.

Soil Treatment with Established Plants or Seedlings: Apply this product at any stage of plant growth as a soil treatment up to the day of harvest. Make applications using soil drench, flood or drip irrigation. Ensure that soil moisture of the beds is at or near field capacity prior to application.

Soil Drench: Apply 20–41 fl. oz. of this product per 200 gallons of water per 1,000 square feet of soil to be treated to yield approximately 50–100 ppm PAA.

Flood Irrigation: Inject this product through a metered system using 100 fl. oz. of this product per 1,000 gallons of water used to yield approximately 50 ppm PAA.

Drip Irrigation: Apply this product through the drip tape at a rate of 10.7–24 fl. oz. per 1,000 feet of row. Inject this product through a metered system using 100 fl. oz. of this product per 1,000 gallons of water used to yield approximately 50 ppm PAA. Apply first treatment during the first drip irrigation cycle. Apply two additional treatments at 7–14 day intervals. Under severe disease conditions, apply at 7-day intervals using the highest rate. Under severe disease conditions and during periods of rainy weather, apply this product immediately following rain to suppress the spread of disease and help oxygenate the soil. Combine lower rates of this product with other non-metal based fungicides.

Row Center Spacing	Rate of This Product	Application Instructions
5.5–6 ft.	100–134 fl. Oz. per acre	<ul style="list-style-type: none"> Apply through irrigation systems using a 45 to 90 minute run time Repeat applications at 7 to 14 day intervals

Foliar Applications: This product can be applied to the following growing crops to control fungi. Crops: root vegetables, potatoes, berries, strawberries, citrus fruit, pome fruit, stone fruit, herbs, spices, peppers, tomatoes, eggplant, sweet potatoes, bulbs, onions, cucurbits, cucumbers, tropical fruits, avocados, bananas, mangoes, grapes, brassicas, peas, beans, soybeans, cereal crops, rice, wheat, peanuts, alfalfa, chinese vegetables, greens, lettuce, leafy greens, celery, apiaceae, cranberries, legumes, corn (field, sweet, seed), wild rice, cole crops, garlic, leeks, green onions, mushrooms, sugar beets, tobacco, hops, grass for seed or sod, asparagus, nuts, walnuts, pistachios, macadamia nuts, almonds, cotton, and coffee, hemp and flowering plants. To suppress/control/prevent the following non-human plant pathogens: Alternaria, Angular leaf spot, Anthracnose, Bacterial blotch, Bacterial speck, Bacterial spot, Black rot, Blights, Blue mold, Botrytis, Brown rot, Citrus canker, Cladosporium, Crown rot, Downey mildew, Early blight, Fruit rot, Fusarium, Gray leaf spot, Gummy stem blight, Leaf blight, Leaf rust, Leaf spot, Mycogone, Necrotic spot, Phytophthora, Potato brown rot, Powdery mildew, Pythium, Rhizoctonia, Rust, Scab, Sclerotinia, Shot hole, Sooty mold, Stem rot, Trichoderma, Verticillium, White mold.

Initial Curative Application:

- Use 3.4–6.8 fl. oz. of this product per 5 gallons of clean water.
- Do not reuse already mixed solution; make fresh daily. Spray or mist plants and trees.
- Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches, and stalks to ensure full contact with plant tissue.
- Based on the disease severity, apply for one to three consecutive days and then follow directions for preventative treatment after the initial application.

Weekly Preventative Treatment:

- Use 0.66–1.1 fl. oz. of this product per 5 gallons of clean water.
- Spray or mist plants and trees.
- Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches, and stalks to ensure full contact with plant tissue.
- Based on the disease pressure, spray every five to seven days as a preventative treatment.
- At the first sign of disease, spray daily with 3.4–6.8 fl. oz. of this product per 5 gallons of water for three consecutive days and then resume weekly preventative treatment.

Apply solution at 50–100 gallons per treated acre, depending on spray method used.

Note: 1 fl. oz. of this product per 5 gallons of water = 100 ppm PAA

A nonionic spreader (surfactant) adjuvant should be used for better results. Contact your local supplier or farm supply.

SANITIZATION

Foam Cleaning of Food and Non-Food Contact Surfaces: As an adjunct to cleaning and sanitizing procedures this sanitizer/disinfectant may be added to PERAFOAM™ and foamed on environmental or equipment surfaces using conventional foam-generating equipment. PERAFOAM™ is the only approved product that may be used. The resultant foam blend can be used on equipment, floors, walls, ceilings, drains, etc. and must be left on surface for a minimum of 1 minute or longer.

Foam Contact Surface Directions for Mixing: Manually or mechanically blend no more than 1–6.1 fl. oz. of this product and 6–12 fl. oz. of PERAFOAM™ (foam additive) per 6 gallons of water. The dilution water must not exceed 150° F. Higher concentrations of this product and/or PERAFOAM™ may be used on food contact surfaces, but a potable water rinse is required. When used in organic production, a potable water rinse is required.

Non-Food Contact Surface Directions for Mixing: Manually or mechanically blend 1–12 fl. oz. of this product and 6–36 fl. oz. of PERAFOAM™ (foam additive) per 6 gallons of water. The dilution water must not exceed 150° F. When used in organic production, a potable water rinse is required. Note: When using a foam additive, PERAFOAM™ is the only approved product that may be used.

Drain Cleaning and Sanitizing: For use in open or closed drains such as in food, beverage, dairy, pharma and health care industries. Manually or mechanically blend 4–12 fl. oz. of this product with 1–12 fl. oz. of PERAFOAM™ (foam additive) per gallon of water and foam surfaces thoroughly using conventional foam-generating equipment. The dilution water must not exceed 150° F. Allow product to contact the surface for at least 10 minutes or more. A water rinse is optional. When used in organic production, a potable water rinse is required.

Entryway Sanitizing Systems: To help prevent cross-contamination from treated area to treated area, apply (spray) a sanitizing foam to the entryway. The foam must cover the entire path of the doorway. For effective coverage of footwear and forklift tires, etc., apply a foam layer 0.5–2 inches in depth. Set the system to deliver 1–6.1 fl. oz. (82–500 ppm active PAA) of this product and 3–12 fl. oz. of PERAFOAM™ (foam additive) per 6 gallons of water. Adjust the PAA concentration by testing the collapsed foam solution using a peroxyacetic acid test kit. Note: When using a foam additive, PERAFOAM™ is the only approved product that may be used.

STORAGE AND DISPOSAL

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

Storage: Never return this product 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, spray container with cool water and dilute this product with large volumes of water. Avoid damage to containers. Keep container closed at all times when not in use. Keep container out of direct sunlight. To maintain product quality, store at temperatures below 86°F.

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 must not enter confined spaces.

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 by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or Hazardous Waste representative at the nearest EPA Regional Office for guidance. 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 must be contacted prior to disposal. This product which is to be discarded, must be disposed of as hazardous waste after contacting the appropriate local state or Federal agency to determine proper procedures.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Offer for recycling if available. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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 it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Container Handling: (Containers equal to or less than 5 gallons): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat the procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

DISTRIBUTED BY	LOT #	NET CONTENTS
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