



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Antimicrobials Division (7510P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:

8743-20

Date of Issuance:

10/2/24

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Terrastat 5.523-S

Name and Address of Registrant (include ZIP Code):

Eliot Harrison
Agent for Brainerd Chemical Company, Inc.
P.O. Box 470010
Tulsa, OK 74147
Electronic Transmittal: eharrison@lewisharrison.com

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Antimicrobials Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) You must comply with the following conditions:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

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

Date:

10/2/24

2. You are required to comply with the data requirements described in the DCI Orders identified below:
 - a. Peroxyacetic Acid: GDCI-063201-1125
 - b. Hydrogen Peroxide: GDCI-000595-1127

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Reevaluation Team Leader (Team 36): <http://www2.epa.gov/pesticide-contacts/contacts-office-pesticide-programs-antimicrobial-division>

3. Make the following label changes before you release the product for shipment:
 - Revise the EPA Registration Number to read, “EPA Reg. No. 8743-20.”
4. Submit one copy of the final printed label for the record before you release the product for shipment.

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

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated: September 5, 2024
- Alternate CSF #1 dated: September 5, 2024

If you have any questions, please contact Zebora Johnson by phone at (703) 308-7080, or via email at johnson.zebora@epa.gov.

Enclosure: Stamped Final Label

Terrastat™ 5.523-S

SANITIZER FOR FOOD-CONTACT SURFACES

Active Ingredients:

Peroxyacetic Acid.....	5.70%
Hydrogen Peroxide.....	23.15%
Inert Ingredients.....	71.15%
TOTAL.....	100.00%

KEEP OUT OF REACH OF CHILDREN DANGER - PELIGRO

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

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	
If in eyes	<ul style="list-style-type: none">• 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 eyes.• Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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 the 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. Have the product container or label with you when calling a poison control center or doctor or going for treatment. For general information on product use, etc., call the National Pesticides Information Center at 1-800-858-7378. You may also contact the poison control center at 1-800-222-1222 for emergency medical treatment information.	

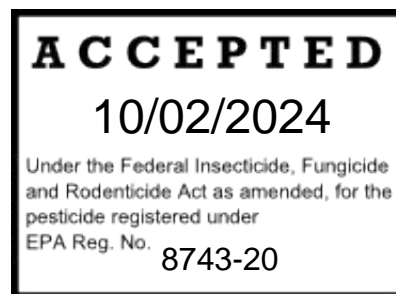
(See Side Panel for Additional Precautionary Statements and Usage Directions)

Manufactured By:
Brainerd Chemical Company Inc.
15 E. 5th Street, Suite 200
Tulsa, OK 74103

EPA Registration Number: 8743-XX

EPA Est. Nos.

Net Contents:
Lot Number:



(Note to Reviewer: The following optional referral statement may be organized in any order to be grammatically correct.) [See][Consult] [Additional][attached] [Product Information] [Bulletin][Sheet][insert][booklet][label] for [other][additional] [directions for use] [information] [claims][organisms][applications] [and] [proper] [use directions].

(Note to Reviewer: The words "peroxyacetic acid" may be replaced with "PAA", "hydrogen peroxide" may be replaced with "HP", Terrastat 5.523-S with this [Product] [Solution]"

For Institutional/Industrial sanitizing of previously cleaned hard, non-porous food contact surfaces in:

- Wineries, Breweries and Beverage Plants
- Meat and Poultry Processing / Packaging Plants
- Seafood and Produce Processing / Packing Plants
- Food Processing / Packing Plants
- Egg Processing / Packing Equipment Surfaces

For use as a sanitizer on food contact surfaces in contact with products labeled as organic.

For use as a coarse spray for surfaces to be sanitized.

For use as an antimicrobial container rinse to control beverage spoilage microorganisms.

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

- Wineries, Breweries and Beverage Plants
- Meat and Poultry Processing / Packaging Plants
- Seafood and Produce Processing / Packing Plants
- Food Processing / Packing Plants
- Egg Processing / Packing Equipment Surfaces
- Final Sanitizing Bottle Rinse
- Agriculture and Horticulture Industry

For use as a control in recirculating cooling water and evaporative coolers, reverse osmosis, nano & ultra-filtration and agricultural waters.

OPTIONAL STATEMENTS AND MARKETING CLAIMS

(Note to Reviewer: The following marketing claims may be used with the prefix "This product or "This product is (a) (an)".)

FOR SANITIZATION OF HARD, NON-POROUS SURFACES:

- For use as a sanitizer on hard, non-porous food contact surfaces in contact with products labeled as organic.
- Terrastat 5.523-S is for use as a coarse spray for hard, non-porous surfaces to be sanitized.
- Terrastat 5.523-S is for sanitizing hard, non-porous surfaces including packinghouse conveyers and harvesting equipment and containers.
- Terrastat 5.523-S Acid Sanitizer is for sanitization of shell eggs.
- Terrastat 5.523-S is for use as a sanitizer of hard surfaces in general commercial environments and as an antimicrobial rinse of Precleaned or New Returnable or Non-Returnable Containers.
- Terrastat 5.523-S is for sanitization of hard, non-porous surfaces in animal and poultry premises, trucks, coops, and crates

FOR USE IN PROCESSING WATERS TO CONTROL NON-PUBLIC HEALTH ORGANISMS:

- For Organic Production, Terrastat 5.523-S may be used in rinse or wash water on products labeled as organic in food processing facilities on commodities that will be further processed.
- Terrastat 5.523-S can be used for reducing non-public health microorganisms in processing waters for fruits and vegetables.
- Terrastat 5.523-S is for use as a dip or spray wash, or fog to control the growth of non-public health microorganisms that may cause decay and/or spoilage on raw, post-harvest and fresh cut, fruits and

vegetables.

- Terrastat 5.523-S is for use in process water that contacts raw, post-harvest, fresh-cut and processed fruits and vegetables to control growth of non-public health microorganisms.
- Terrastat 5.523-S is for use in agricultural water and irrigation systems to control growth of non-public health microorganisms.
- Terrastat 5.523-S may be used for the non-pesticidal purpose of cleaning room surfaces by fogging.

FOR USE AS AN ANTIMICROBIAL RINSE TO CONTROL BEVERAGE SPOILAGE MICROORGANISMS:

- Terrastat 5.523-S is for use as an antimicrobial rinse to control beverage spoilage microorganisms.
- Terrastat 5.523-S for food & beverage, wine processing equipment, tanks, vats, pails, pipelines and closed systems to control beverage spoilage microorganisms..
- Liquid formula allows for automatic dispensing and control. This helps reduce over-usage and saves employee time
- Removes mineral soils
- Removes mineral based soils
- Removes milk stone
- Removes mineral fouling soils
- Improved flux due to removal of mineral soils
- Removes mineral soils at lower temperatures

BEERSTONE AND SCALE REMOVAL, SANITIZER ON HARD, NON-POROUS SURFACES:

- Terrastat 5.523-S is very effective cleaner because of its dissolving action on beerstone, proteins, slime, yeast and other matter commonly found in brewery lines, tanks and hoses.
- This product is recommended for use as a sanitizer in beer fermentation and holding tanks, bottling or pre-mix dispensing equipment.
- Beerstone and scale can build up on pipelines, storage tanks, tank trucks, silos and processing equipment in the brewery industry. Use of this product will aid in the removal of this material from equipment and help maintain the efficiency of the operation as well as eliminate bacterial growth.
- Is for use as a sanitizer in bottling and beverage dispensing equipment, beer fermentation and holding tanks, sanitary filling of bottles, caps 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.
- Clear formula. (Note to Reviewer To be used only when no dyes are present)
- Contains no fragrances. (Note to Reviewer: to be used only with non-fragrance formulas)
- Is fragrance-free. (Note to Reviewer: to be used only with non-fragrance formulas)
- Formulated for effective poultry sanitization on hard non-porous surfaces.
- Is a concentrate that can be used with a mop and bucket, trigger sprayers, sponge or by soaking.
- Is easily and quickly dispersed in water to form a uniform solution.
- Is for use on floors, walls, tile, cages, crates, mats, litter boxes, floor coverings, or any hard, non-porous surfaces soiled by a pet.
- Will not leave grit or soap scum.

CLEANING AND DEODORIZATION MARKETING CLAIMS (Note to Reviewer: The following marketing claims may be used with the prefix "This product".)

- Cleans {and shines} {without bleaching} {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} {like dirt, grease and food stains}.
- Cleans rodent soiled areas. Inhibits bacterial growth on moist surfaces and deodorizes by killing microorganisms that cause offensive odors.
- Is a versatile cleaner and scale remover formulated for use on bath and therapy equipment {whirlpools}.
- Is for use in work areas including tool rooms and garages for odor control and light duty cleaning.
- {Maximizes} {Improves} labor results by effectively controlling odors.
- Provides long lasting freshness against tough {pet} odors including odors from litter boxes and pet accidents.
- Removes dirt.
- Aids in the removal of {Milkstone}{Beerstone}
- Removes stains.
- Use of this product will control unpleasant {malodors} {odors}.

SANITIZER CLAIMS FOR USE ON HARD, NON-POROUS SURFACES:

- This product is an effective no-rinse final sanitizer on pre-cleaned food contact surfaces.
- This product is for use as a sanitizer on food processing equipment and utensils.
- This product is for use as a sanitizer in bottling and beverage dispensing equipment.
- This product is for use as a sanitizer in sanitary filling of bottles and cans.
- This product is for use as a sanitizer in beer fermentation and holding tanks.
- This product is for use as a sanitizer in wineries for use on holding tanks, floors and processing equipment
- Effective sanitizer to clean equipment (either manually or CIP) in the food, beer, wine, and beverage industries
- The reduction of biofouling bacteria improves flux
- The reduction of biofouling bacteria can lead to improved flux
- The reduction of biofoulants leads to improved flux
- The reduction of biofoulants leads to improved flux resulting in increased production capacity
- Performs acid rinse and antimicrobial rinse in one labor saving step
- Convenient to use - provides acidified wash and antimicrobial rinse in one labor saving step
- This product is a cleaner, food contact sanitizer, for hard, non-porous surfaces.
- This product contains no phosphorous.
- This product cleans by removing dirt, grime, blood, urine, fecal matter and other common soils found in animal housing facilities, livestock, swine and poultry facilities, grooming facilities, farms, kennels, pet stores, veterinary clinics, laboratories, or other small animal facilities. It (also) eliminates odors leaving surfaces smelling clean and fresh.
- This product is an economical concentrate that can be used with a mop and bucket, trigger spray, sponge, or by soaking.
- This product will not leave a grit or soap scum.
- When used as directed, this product will deodorize surfaces in restrooms and toilet areas, behind and under sinks and counters, garbage cans and garbage storage areas, and other places where bacterial growth can cause malodors.
- This product is approved as a sanitizer in packing houses, and on food processing equipment and utensils. A potable rinse is not necessary when used as a sanitizer on food contact surfaces.
- This product is for use as a sanitizer on food contact surfaces, food processing equipment and utensils, on hard, non-porous surfaces. A potable water rinse is not required when used as a sanitizer on food contact surfaces.
- This product is for use as a sanitizer in bottling and beverage dispensing equipment.
- This product is for use as a sanitizer in sanitary filling of bottles, caps and cans.
- This product is for use as a sanitizer in beer fermentation and holding tanks.
- This product is for use as a sanitizer in wineries for use on holding tanks, floors, and processing equipment.
- This product is for use as a sanitizer in brewing clean-in-place systems
- Use this product on the multi-touch surfaces responsible for cross-contamination.
- This product is a concentrate formulation designed for use in commercial, institutional, and industrial operations.
- This product controls the growth of odor causing and slime forming bacteria.
- This product is formulated to effectively eliminate offensive odors caused by mold and mildew.
- Sanitizer
- Deodorizer
- Easy to use when used in accordance with the directions for use
- For sanitizing of hard, non-porous food contact surfaces, structures & equipment
- Contains no phosphates
- Sanitizes and deodorizes
- Reduces residue
- A post-harvest treatment for the prevention and control of plant pathogenic diseases on all fruits and vegetables and other agricultural crops in dump tanks, hydro coolers and process waters.
- A treatment for the prevention and control of plant pathogenic diseases on surfaces, equipment and structures used in processing post-harvest commodities.
- Controls the growth of odor-causing and slime forming bacteria
- A treatment for the prevention and control of algae & cyanobacteria in waters
- Controls algae blooms
- Controls odors
- Algaecide

- May be used in water features containing fish and plants
- Keeps water clean
- Rids water of algae
- Treats, controls, and prevents algae
- Use on water gardens, ornamental ponds, waterfalls, fountains, or stone water features
- Liquid algaecide for treating waterscapes
- Enhance water's appearance
- Removes algae from your water
- Fast-acting algae control
- Pond algaecide
- Reduces algae growth
- Inhibits growth of many types of algae
- Biodegradable
- Contains no metals
- For algae-free water
- Eliminates algae

Optional Graphics:

1. Orthodox Union hechsher:



2. GHS Pictograms:



PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: CORROSIVE. Causes irreversible eye damage. Causes skin burns. Do not get in eyes, on skin, or on clothing. May be fatal if swallowed, inhaled, or absorbed through skin. Do not breathe vapor or spray mist. Wear coveralls worn over long-sleeved shirt and long pants, socks, chemical-resistant footwear, rubber gloves, a NIOSH- approved elastomeric half mask respirator with organic vapor (OV) cartridges and combination N1, R, or P filters; OR a NIOSH-approved gas mask with OV canisters; OR a NIOSH-approved powered air purifying respirator with OV cartridges and combination HE filters, and chemical goggles. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PHYSICAL OR CHEMICAL HAZARDS: Strong oxidizing agent. Mix only with water. Terrastat 5.523-S is not combustible, but at temperatures exceeding 156 F, 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 the discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment facility authority. For guidance, contact your State Water Board or Regional Office of the EPA.

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

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

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), notification to workers, and Restricted-Entry Interval (REI). The requirements in this box only apply to the uses of this product that are covered by the Worker Protection Standard.

FOR ENCLOSED ENVIRONMENTS: There is a restricted entry interval of one (1) hour for this product when applied via fogging or spraying to growing plants, surfaces, equipment, structures and non-porous surfaces in enclosed glasshouses and greenhouses. PPE requirement for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, including plants, soil or water, is coveralls worn over long-sleeved shirt and pants, waterproof gloves and shoes plus socks. There is a restricted entry of zero (0) hours for pre-plant dip, seed treatment, soil drench, mop, sponge, dip, soak, rinse or other non-spraying application methods when used in enclosed environments including glasshouses and greenhouses.

FOR FIELD APPLICATIONS: Keep unprotected persons out of treated areas until sprays have dried.

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 protect agricultural plants on farms, forests, nurseries or greenhouses. Keep unprotected persons out of treated areas until sprays have dried.

§ 156.206 GENERAL STATEMENTS.

(a) Application restrictions. Each product shall bear the statement: "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." This statement shall be near the beginning of the DIRECTIONS FOR USE section of the labeling under the heading AGRICULTURAL USE REQUIREMENTS.

(d) State restrictions. Each product shall bear the statement: "For any requirements specific to your State, consult the agency in your State responsible for pesticide regulation." This statement shall be under the heading

(e) Spanish warning statements. If the product is classified as toxicity category I or toxicity category II according to the criteria in § 156.62, the signal word shall appear in Spanish in addition to English followed by the statement, “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.)” The Spanish signal word “PELIGRO” shall be used for products in toxicity category I, and the Spanish signal word “AVISO” shall be used for products in toxicity category II. These statements shall appear on the label close to the English signal word.

STORAGE AND DISPOSAL

Do not contaminate Water, Food or Feed by Storage and Disposal.

PESTICIDE STORAGE: Store product in a cool place and keep out of direct sunlight. Do not store on wooden pallets. NEVER RETURN Terrastat 5.523-S 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 closed at all times when not in use. Keep container out of direct sunlight. To maintain product quality, store at temperatures below 86°F. Do not store on wooden pallets.

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 AND DISPOSAL:

(Containers greater than 5 gallons) 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. 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.

(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.

(Stainless steel containers - tank trucks): Return for reuse. Refill the container with pesticide only. Do not reuse this container for other purposes.

PROCEDURE FOR LEAK OR SPILL: Stop leaks 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.

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, consult the agency in your State responsible for pesticide regulation.
Note: All volumes given in ounces are fluid ounces.

SANITIZATION

Terrastat 5.523-S is recommended for use in circulation cleaning and institutional/industrial sanitizing of previously cleaned hard, non-porous food-contact surfaces and equipment including food preparation surfaces, pipelines, tanks, vats, fillers, evaporators, pasteurizers, and aseptic equipment in:

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

This product is effective as a sanitizer when solution is prepared in water of up to 200 ppm hardness as CaCO₃. This product has demonstrated 99.999% reduction of organisms after 60 seconds' exposure period in the AOAC Germicidal and Detergent Sanitizing Action of Disinfectants study.

NOTE: For Mechanical Operations, prepared use solution may not be reused for sanitizing but may be reused for other purposes including cleaning. FOR MANUAL OPERATIONS fresh sanitizing solutions must be prepared daily or more often if the solution becomes diluted or soiled.

SANITIZING HARD, NON-POROUS FOOD CONTACT SURFACES

An effective sanitizer against *S. aureus* (ATCC 6538), *E. coli* (ATCC 11229) and *S. enterica* (ATCC 10708).

Clean equipment immediately after use:

1. Remove gross particulate matter with a warm water flush.
2. Wash equipment with detergent or cleaning solution.
3. Rinse equipment with potable water.
4. Prepare product solution by adding 1.7-2.5 fluid ounces of product to 5 gallons of water with a water hardness up to 200 ppm. This provides 171-251 ppm peroxyacetic acid and 694-1021 ppm hydrogen peroxide. Fill closed systems with diluted sanitizer solution and allow a contact time of (1) minute.
5. 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.
6. Allow surfaces to drain thoroughly before resuming operation. Rinsing not required.

FINAL SANITIZING BOTTLE RINSE

May be used as a final sanitizing rinse for plastic or glass returnable and non-returnable bottles / cans.

1. Wash bottles with detergent or cleaning solution and rinse with potable water.
2. Rinse bottles with a solution prepared by mixing 1.7-2.5 fluid ounces of product to 5 gallons of water with a water hardness up to 200 ppm. Allow contact time of (1) minute.
3. Allow to drain adequately.

ANTIMICROBIAL RINSE OF PRE-CLEANED OR NEW RETURNABLE OR NON-RETURNABLE CONTAINERS

To reduce the number of nonpathogenic beverage spoilage organisms including *Aspergillus versicolor*, *Byssoschlamys fulva*, *Pediococcus damnosus*, *Lactobacillus buchneri* and *Saccharomyces cerevisiae*.

1. Prepare solution by adding 6.5 to 25 fluid oz. to 5 gallons of water with a water hardness up to 200 ppm. This will provide 654 to 2515 ppm of peroxyacetic acid and 2657 to 10,218 ppm hydrogen peroxide.
2. Apply solution, allowing a contact time of (1) minute.
3. Allow containers to drain thoroughly and then rinse with sterile or potable water.

SANITIZATION OF EGG SHELLS INTENDED FOR FOOD

1. Wash eggs with a detergent.
2. Rinse thoroughly with potable water
3. Prepare a dilute solution by adding 1.7-2.5 fluid ounces of product to 5 gallons of water with a water hardness up to 200 ppm. This provides 171-251 ppm peroxyacetic acid and 694-1021 ppm hydrogen peroxide. The solution must be

equal to or warmer than the eggs, but not to exceed 130° F. Eggs that have been sanitized with this product may be broken for use in the manufacture of egg products without a prior potable water rinse. Eggs must be reasonably dry before casing or breaking. The sanitizing solution must not be reused for sanitizing eggs.

4. Apply dilute solution as eggs are gathered or prior to setting, as a coarse spray or flood to lightly wet all eggshell surfaces. Allow contact time of (1) minute.
5. Allow to drain dry.

SANITIZATION OF CONVEYORS, PEELERS, SLICERS AND SAWS FOR MEAT, POULTRY, SEAFOOD, FRUITS AND VEGETABLES

An effective sanitizer against *S. aureus* (ATCC 6538), *E. coli* (ATCC 11229) and *S. enterica* (ATCC 10708)

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. Scrape/prewash surfaces whenever possible.
3. Wash all items with a detergent.
4. Rinse thoroughly with potable water
5. Prepare sanitizer solution by adding 1.7-2.5 fluid ounces to 5 gallons of water with a water hardness up to 200 ppm.
6. Apply sanitizer solution to the return portion of the conveyor or to the equipment by using a coarse spray or other means of wetting the surfaces. Allow contact time of (1) minute. Control the volume of solutions to permit maximum drainage and to prevent puddles. The conveyor may still be damp when food contact occurs.
7. Allow equipment to drain adequately before reusing, a dry surface is not required. No rinse is needed.

TREATMENT OF FRUIT AND VEGETABLE PROCESS WATER SYSTEMS

This product can be used in water or ice that contacts raw or fresh, post-harvest or further processed fruits and vegetables (in accordance with FCN) 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 200 ppm residual peroxyacetic acid to the use solution in accordance with Food Contact Notification #1823. This can be accomplished by initially adding 4.0 fl. oz. per 10 gallons of water. The recommended concentration is between 30-150 ppm as peroxyacetic acid (0.58- 3.0 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. It is also recommended to 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 recommended to insure efficacy. A potable water rinse is not required.

FOG TUNNEL AND FOGGING APPLICATIONS OF PRODUCE FOR NON-PUBLIC HEALTH ORGANISMS:

Inject this product directly into the system at a rate of 20.0 fl. oz. per 100 gallons of water. (100 ppm peroxyacetic acid and 408 ppm hydrogen peroxide). Allow a contact time of 20-30 seconds with the fog. For best results, distribute produce in a single layer on the conveyor and ensure uniform distribution of fog across produce surface by either rolling the produce as it passes on the conveyor or by even distribution of the fog nozzles in the treated area. Do not rinse. Applicable for use on all types of post-harvest commodities.

TREATMENT OF SEED POTATOES (Not for use in California)

To control, treat or suppress plant bacterial and fungal diseases: bacterial soft rot, bacterial ring, bacterial ring rot, early blight, Fusarium dry rot, late blight, rot, silver scurf, for economic and aesthetic purposes. This product can be applied by dip or spray on harvested potatoes going into storage. As a dip: Use 1.16-2.15 fl. oz. of this product per gallon of clean water. Dip whole or cut tubers in the solution for 1-5 minutes. As a spray: Use 11.60-21.5 fl. oz. of this product per 10 gallons of clean water. 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 gallon of spray per ton of potatoes). Do not reuse already mixed solution; make fresh daily.

TREATMENT OF HARVEST POTATOES

To control, treat or suppress plant bacterial and fungal diseases: silver scurf, late blight, pink rot, early blight, bacterial soft rot, this product can be applied by dip or spray on harvested potatoes going into storage. Use 2.2-4.0 fl. oz. of this product per five gallons of clean water. Do not reuse already mixed solution; make fresh daily. If applying diluted solution via spray, spray over potatoes to achieve full and even coverage. Ensure full contact on all surfaces for 45 seconds.

SURFACES TREATED TO CONTROL THE SPREAD OF CITRUS CANKER

Use Terrastat 5.523-S to control the spread of citrus canker between inanimate surfaces and inanimate surfaces to plants. This product is for sanitizing surfaces including packinghouse conveyers and harvesting equipment and containers. This product is not for treatment of infected plants.

NON-PESTICIDAL CLEANING

All surfaces must be cleaned and sanitized prior to fogging.

FOGGING IN FILLING, PACKAGING, PROCESSING, STORAGE, WAREHOUSE, DISPENSING ROOMS, AND WORKER WELFARE ROOMS OR AREAS (NOT FOR USE IN CALIFORNIA)

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

1. Ensure room is properly ventilated.
2. Vacate all personnel from room during fogging and for a minimum of 2 hours after fogging.
3. Ensure there is no strong odor characteristic of acetic acid before having personnel return to work area.
4. Do not enter room until hydrogen peroxide concentrations are correctly tested and are below 0.5 ppm on a time-weighted average.
5. Fog area using one quart of a 0.12% solution of this product (0.93 fl. oz. of this product per 6 gallons of water) per 1,000 cu. ft. of room volume.
6. Allow surfaces to drain thoroughly before operations are resumed.

FOGGING – NON-PUBLIC HEALTH *(Not for use in California)*

This product can be applied by fogging to control the growth of non-public health spoilage and decay causing bacteria on hard, non-porous surfaces in beverage and food plants including meat and poultry processing facilities. All surfaces must be pre-cleaned prior to fogging.

The fog generated is irritating to the eyes, skin and mucous membranes. Wear a dust mist respirator when mixing the use solution and pouring it into the mechanical fogging apparatus. All food contact surfaces must be thoroughly rinsed with potable water prior to sanitizing with an EPA approved food contact sanitizer."

Directions for Fogging in Beverage and Food Handling Plants (including meat and poultry processing facilities):

Prior to fogging, food products and packaging material must be removed from the room or carefully protected. The room or building must be vacant of all personnel during and at least two hours after the fogging treatment. Calculate the volume of the room to determine volume of solution needed to fog (one quart per 1000 cu. ft. of room area). Prepare a solution containing 1.0-1.3 fl. oz. per 4 gallons of water and fog using a mechanical fogging apparatus. Fog product for length of time necessary to fill room based on fogging apparatus manufacturer directions. Surfaces must remain undisturbed for 5 minutes after room fill is achieved before initiating aeration of the room.

Do not enter the treated area for a minimum of 2 hours [or 8 air exchanges (ACH)] after fogging is completed. If the room or building must be entered prior to complete aeration, the individual must wear a self-contained respirator approved by NIOSH/MSHA, goggles, long sleeves, and long pants

ALKALINE DETERGENT CLEANING ADJUNCT (BOOSTER)

To Clean Food Processing Equipment, Terrastat 5.523-S is an effective cleaning booster (hypochlorite alternative) for use with alkaline detergents. It may be used as a cleaning additive for Clean-In-Place (CIP) operations involving the circulation cleaning of pipelines, tanks, vessels, evaporators, HTSTs, and other food processing equipment. For cleaning applications as a detergent booster, use 0.5 to 5.5 fl. oz. per gallon of water, to assist in the removal of organic soils. All hard, non-porous food contact surfaces treated with this boosted detergent must be thoroughly rinsed with potable water followed by sanitizing with an approved food contact surface sanitizer (including Terrastat 5.523-S).

AGRICULTURAL AND HORTICULTURAL USES

A Restricted-Entry-Interval of zero (0) hours is required for Terrastat 5.523-S in agricultural or horticultural uses. This product should not be mixed or combined with any pesticides or fertilizers. Upon soil contact, the diluted product decomposes rapidly to oxygen, carbon dioxide and water. This product may be harmful to fish if exposed on a continuous basis at concentrations greater than 1 ppm of active Peracetic acid. Meter Terrastat 5.523-S into pressurized pipes using a plastic or stainless-steel injection/backflow device installed upstream from the equipment to ensure thorough mixing prior to application. For open bodies of water, allow adequate mixing prior to product flow entering any body of water. If open pouring of this product is required, pour product close to the surface of the water as possible to reduce odor and exposure.

Treatment of Agricultural and Irrigation Water Systems: Use Terrastat 5.523-S to control sulfides, odor, slime, and algae in sand filters, humidification systems, storage tanks, ponds, reservoirs, canals. Apply Terrastat 5.523-S at 30 to 185 fluid ounces per 10,000 gallons of water. This provides 1.5 ppm to 9 ppm peroxyacetic acid. Repeat dose as necessary to maintain control. For prevention of algae, some systems may require continuous low-level dosing during warm, sunny periods (2 ppm to 5 ppm peracetic acid).

Drip Irrigation Systems: To clean slime and algae from drip system filters, tapes and emitters, add Terrastat 5.523-S at 22 to 34 fluid ounces per 1000 gallons. This provides 11 ppm to 17 ppm peroxyacetic acid. Use this product at the recommended dose for a minimum of 30 minutes during normal irrigation cycles. Upon irrigation cycle completion, discontinue use and flush the lines.

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 water systems, this product may be used at 1:13,000 to 1:2200 dilutions (5-30 ppm as peroxyacetic acid). Heavily fouled systems, including evaporative coolers or irrigation/drip lines may need shock doses of up to 100 ppm as peroxyacetic acid (1:640 dilution).

Cleaning Poultry, Swine, Livestock Water Systems (When the System is Not in Use): To remove scale, calcium, iron, magnesium, heavy soils, polysaccharides and deposits from vitamins and medications from livestock watering systems use Terrastat 5.523-S at 4.21-8.42 fl. oz. per 10 gallons of water. When used as directed, Terrastat 5.523-S will remove organic and inorganic deposits that reduce water flow and clog nipples. Allow system to run for 6 - 24 hours depending on the conditions. Following the cleaning process, rinse with potable water to remove the cleaning solution from the watering line, nipples and cups. Never mix Terrastat 5.523-S with any other product.

Cleaning Poultry, Swine, Livestock Watering Operating Systems (When Animals Are Present): After water lines have been cleaned, use Terrastat 5.523-S at 0.7-1.2 fl. oz. per 100 gallons of water to control mineral build up in watering lines. Never use Terrastat 5.523-S more than 5 consecutive days to clean the operating system. Never mix TERRASTAT 5.523-S with any other product. If cleaning the operating system, stop the use of Terrastat 5.523-S twenty-four (24) hours prior to vaccination or medication via the water line.

SANITIZING OF ANIMAL AND POULTRY PREMISES, TRUCKS, COOPS AND CRATES

This product is designed for use in animal hospitals, animal laboratories, kennels, pet shops, zoos, pet animal quarters, poultry premises, poultry hatcheries, and livestock quarters. When used as directed, this product is specifically designed to sanitize, deodorize and clean inanimate, hard, non-porous surfaces including walls, floors, sink tops, furniture, operating tables, kennel runs, cages and feeding equipment. In addition, this product will deodorize those areas that are generally hard to keep smelling fresh, including garbage storage areas, empty garbage bins and cans, and any other areas that are prone to odors caused by microorganisms.

Sanitizing of Poultry Premises:

1. For visibly soiled areas, a pre-cleaning step is required.
2. Prepare a fresh solution for each use.
3. Remove all poultry and feeds from premises, trucks, coops and crates.
4. Remove all litter and droppings from floors, walls and surfaces of facilities occupied or traversed by poultry.
5. Empty all troughs, racks and other feeding and watering appliances.
6. Thoroughly clean all surfaces with a detergent and rinse with water.
7. Prepare a use-solution by diluting 2.5-7.8 fl. oz. of this product per 5 gal of water and then saturate surfaces for a period of 10 minutes. Thoroughly scrub treated feed racks, troughs, automatic feeders, fountains and waters with a detergent and rinse with potable water before reuse.
8. Ventilate buildings, coops and other closed spaces.

9. Do not house poultry or employ equipment until treatment has been absorbed, set or dried.
10. All treated equipment that will contact food, feed, or drinking water must be rinsed with potable water before reuse.

See your technical representative for specific recommendations for all cleaning and rinsing requirements.

Sanitizing and Deodorizing of Animal Housing Facilities (Barns, Kennels, Hutches, Etc.)

1. Remove animals and feed from premises, vehicles, and enclosures.
2. Remove litter, waste matter from floors, walls and surfaces of barns, pens, stalls, chutes, and other facilities and fixtures occupied or traversed by animals. Empty all troughs, racks and other feeding and watering equipment.
3. Thoroughly clean all surfaces with soap or detergent and rinse with water.
4. Prepare a use-solution by diluting by diluting 2.5 fl. oz. of this product per 5 gal. of water and then saturate surfaces with a mop, brush or coarse spray. Allow to remain wet for 10 minutes.
5. Immerse all hard, non-porous types of equipment used in handling and restraining animals, as well as forks, shovels and scrapers used for removing litter and manure.
6. Ventilate buildings and other closed spaces.
7. Do not house livestock or employ equipment until treatment has dried.
8. Thoroughly scrub all treated feed racks, mangers, troughs, automatic feeders, fountains and waterers with soap or detergent, and rinse with potable water before reuse.

CONTROL OF SLIME FORMING BACTERIA IN RECIRCULATING AND COOLING WATER SYSTEMS (COOLING TOWERS, EVAPORATIVE CONDENSERS, PASTEURIZERS AND AIR WASHERS)

Severely fouled systems must be cleaned before adding this product. This product must be added in the system directly and not mixed with any other chemicals or additives. Discontinue the use of chlorine or bromine products prior to using this product. Contamination with other chemicals could result in product decomposition. Add this product at a point in the system where uniform mixing and even distribution will occur.

For slug treatment add 18.5 oz. of this product per 1000 gallons of process water. Repeat as necessary until microbiological control is evident. Thereafter, to maintain control, use 0.3 to 1.4 lbs. (4.0-17.6 oz.) of this product per 1000 gallons of process water (2-9 ppm active peroxyacetic acid) as a continuous or intermittent slug treatment. Continuous dosing methods usually require 2-5 ppm active peroxyacetic acid (4.0-10 fl. oz. per 1000 gal of process water) to achieve adequate control.

CLEANING: To remove sessile bacteria from cooling systems it is necessary to clean slime and slime-forming bacteria from the surfaces of all areas of water contact. This can be accomplished by treating the recycled water with 7.0-21 lbs. (95-297 fl. oz.) of this product per 1000 gal of water (48-150 ppm active peroxyacetic acid) for 4-8 hours during normal tower operating cycles. This procedure can be used for online or offline cleaning. When finished bleed down the system until the PAA level is <5-10 ppm, then normal chlorine or bromine or PAA treatments can begin. This treatment must be done at least once or twice each year depending on exposure conditions.

AIR WASHERS: This product may be used to control bacteria and biofouling in industrial air washing/scrubbing systems. The air washer must have operational and effective mist elimination systems. Prior to use of this product, heavily fouled systems must be pre-cleaned using the appropriate cleaner. Continuous dosing methods will require 2- 7 ppm and intermittent dosing methods require 7-14 ppm (as peroxyacetic acid), depending on the type of system and the level of microbiological control desired.

EVAPORATED OR CONDENSED WATER: This product may be used to treat SWEET or COW water (e.g., condensate of whey) collected from evaporated or condensing water systems in food plants. Typically, the dosing regimen would be using intermittent or continuous methods at 2-14 ppm as peroxyacetic acid.

REVERSE OSMOSIS (RO). ULTRA FILTRATION (UF) AND OTHER MEMBRANE CLEANING

This product may be used in the treatment of ultra-filtration (UF) and reverse osmosis (RO) membranes and other similar type membranes and their associated piping systems. This product may be added continuously in food, beverage, and drinking water systems for RO (reverse osmosis) systems only and in accordance with the instructions below.

This product is not for use in kidney dialysis equipment. This product may 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 or concentration of peracetic acid solutions.

Batch Treatment of NF, UF and RO Systems: Isolate incompatible equipment, including 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 (644 ppm peroxyacetic acid) for heavily fouled systems. The typical treatment solution dosing of this product is 1-2 oz. per 5 gallons of water (100-200 ppm peroxyacetic acid). Recirculate the prepared 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 98 ppm active peroxyacetic acid, which equals 1 oz. of this product per 5 gallons of feed water. Do not use the intermittent feed method for on-line use for potable water or direct food contact systems. Rinse the system with RO permeate or potable water until residual concentration is below 1 ppm.

RO Continuous or Intermittent Addition: For continuous addition methods for RO systems, use 2-5 ppm active peroxyacetic acid (36-90 ppm as product), which equals 1.8-4.4 oz. of this product per 430 gallons of process water. For occasional intermittent feed, do not exceed 98 ppm active peroxyacetic acid, which equals 1 oz. of this product per 5 gallons of feed water. Do not use the intermittent feed method for on-line use in potable water or direct food contact systems.

USE ON GRANULAR ACTIVATED CARBON BEDS AND DEIONIZING (DI) SYSTEM RESIN BEDS *(Not for use in California).*

To reduce or eliminate most microbiological contamination of Granular Activated Carbon (GAC) beds and Deionizing (DI) Systems without negatively affecting the GAC or DI resin, use this product as directed. All new systems must be soaked in process water for at least 12 hours before sanitizing. Drain and refill system with a solution containing 150-450 ppm (as peroxyacetic acid) by adding 3.0-9.0 fl. oz. of this product in 10 gal of water. Typically, the system would be backwashed and circulated through the GAC or resin beds during and/or after adding this product. Add product as quickly as possible to the backwash process if a metering pump is used. Backwash and circulate for 20-30 minutes. Stop the backwash process and allow system to stand for 60 minutes. Drain system. Refill with fresh water and soak for 1-4 hrs. or more, to make sure all residual peroxygen is dissipated. Small amounts of sodium metabisulfite may be used to neutralize any trace amounts of peroxygen. For potable water systems, total residual peroxide must be less than 0.5 ppm before operations resume.

WATER DAMAGE RESTORATION

Use Terrastat 5.523-S to control the growth of odor causing bacteria and fungi on hard, non-porous surfaces in water damage restoration situations. This product is suitable for cleaning the following materials: carpets, carpet cushion, sub floors, trim, frame lumber, tackless strip and paneling.

Sewer Backup and River Flooding: During mitigation procedures prepare a solution of this product by adding 1 fl. oz. of the product to 1 gallon of potable water, allowing for the diluting effect of absorbed water within the saturated materials. Clean visibly soiled, hard non-porous surfaces with Terrastat 5.523-S solution by wiping, or mopping. Saturate all affected materials with the solution before cleaning and extraction. Allow surfaces and materials to remain visibly wet with solution for ten (10) minutes. Follow with a thorough extraction. Dry rapidly and thoroughly. Use proper ventilation.

Control of Bacterial Growth on Hard, Non-Porous Surfaces: This product is effective at inhibiting the growth of bacteria. Prepare a solution of this product by adding 0.5 - 1.0 fl. oz. per 1 gallon of water. This product can be used on floors, walls and other hard, non-porous surfaces including tables, chairs, countertops, bathroom fixtures, sinks, shelves, racks, carts, refrigerators, coolers, glazed tile, and use sites listed on this label made of linoleum, vinyl, glazed porcelain, plastic (including polypropylene and polyethylene), stainless steel, or glass.

UN3109, Organic Peroxide Type F, Liquid (peroxyacetic acid, <26% hydrogen peroxide (<17%)), 5.2 (8)