

# HM 4005 Antimicrobial

## A SILANE QUATERNARY AMMONIUM SALT

For use as an antimicrobial preservative under EPA and FDA Regulations to preserve finished food contact articles\* (Food Preparation Surfaces, Polymeric Tubing for Beverages, Activated Carbon Water Filters) subject to FDA Regulations.

EPA Reg. No. 83019-3

EPA Est. 83019-PA-001

ACTIVE INGREDIENT: 3-(trihydroxysilyl) propyldimethyloctadecyl ammonium chloride... 5.0%  
INERT INGREDIENTS: ..... 95.0%  
TOTAL: .....100%

KEEP OUT OF REACH OF CHILDREN

### WARNING

| FIRST AID  |   |
|--|---|
| Have product container or label with you when calling Poison Control Center or doctor, or going for treatment. |   |
| If in eyes:  | <ul style="list-style-type: none"><li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>Remove contact lenses, if present, after first 5 minutes, and then continue rinsing.</li><li>Call a Poison Control Center or doctor for treatment advice.</li></ul> |

### PRECAUTIONARY STATEMENTS

#### HAZARD TO HUMANS AND DOMESTIC ANIMALS.

**WARNING: CAUSES SUBSTANTIAL BUT TEMPORARY EYE INJURY.** Do not get in eyes or on clothing. Wear appropriate protective eyewear such as goggles, face shield, or safety glasses. 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.

#### PRODUCT FEATURES AND BENEFITS

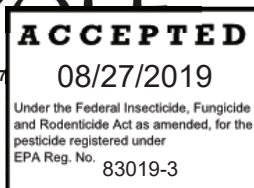
HM 4005 Antimicrobial imparts durable biostatic activity to the surface of a wide variety of substrates. HM 4005 Antimicrobial is effective against mold, mildew and algae as a static agent. Increased efficiency – through proper application, durable bacteriostatic, fungistatic and algistatic surfaces can be attained with a minimum amount of HM 4005 Antimicrobial. Provides freshness and combats deterioration and discoloration caused by bacteria, fungi and algae.

LOT NO. \_\_\_\_\_

NET CONTENTS \_\_\_\_\_

 BIOSAFF®

GELEST BIOSYSTEMS, LLC  
11 East Steel Road, Morrisville, PA 19067  
215-547-1015



MADE IN U.S.A.

### PRECAUTIONARY STATEMENTS

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product 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.

Every effort should be made to contain accidental spills of powder to the immediate area. Many spills may be cleaned up alone or with sand or absorbent materials by sweeping and collection in a waste bin. The material may then be disposed of by incineration or landfill.

Inactivation of solutions containing HM 4005 Antimicrobial may be accomplished by addition of an anionic surfactant, or detergent in quantity equivalent to that of HM 4005 Antimicrobial in solution.

#### DIRECTIONS FOR USE:

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

#### FOR USE AS AN ANTIMICROBIAL UNDER EPA REGULATIONS

**FOR COMMERCIAL APPLICATIONS IN HOMES, OFFICES, AUTOMOBILES AND INSTITUTIONS AND FOR INDUSTRIAL USE ONLY,** This product is registered as a microbiostatic agent for material preservation; neither this product nor the articles treated with this product may state or imply any public health claims. Articles or substances treated with this product will be exempt from FIFRA regulation pursuant to 40 CFR 152.25(a) if the intended use for incorporating this material into a treated article or substance is for the protection of the article or substance itself.

**APPROVED USES:** HM 4005 Antimicrobial may be applied to or incorporated into manufactured products listed below for use in industrial, institutional, commercial or residential locations for non-food contact uses

Plastics, fiberglass, metals, glass, wood, ceramics, stone, natural materials, composites: Including air filters for furnaces, air conditioners, air purification devices, automobiles, and recirculating air handling systems; aquarium filters; automotive and vehicular parts; roofing materials (tiles, shakes, shingles, granules, stone, membranes, felt, underlayment and synthetic overcoats); building materials and components (including siding, wallboard, wood and wood composites, insulation and non-food contact cabinetry); ceiling tiles; concrete products; paints and coatings, thin films, mastics and sealants, cementitious materials (including caulk, grout and cement and grout mixtures non-food contact conveyor and humidifier belts; non-food contact countertops; fiberglass ductboard for air handling systems; floor covering; flooring; general purpose (non-food contact) containers; furniture; bathroom and non-food contact kitchen hardware; mats; plumbing supplies and fixtures; sheet and formed glass.

Fibers, fabrics (natural and synthetic, woven and non-woven), leather and household materials (natural and synthetic): Including buffer pads (abrasive and polishing); mattress cover pads, filling and ticking; pillow covers; sheets; blankets; bedspreads; fiberfill for upholstery, apparel, recreational gear, quilts and pillows; curtains; draperies; carpet and carpet underlay; rugs; upholstery; towels; shower curtains; toilet tank and seat covers; wall covering fabrics and wallpaper (including vinyl) for non-food contact surfaces; umbrellas; fire hose fabric; non-woven disposable diapers; wiping cloths; pre-moistened towelettes

and tissue wipes (these do not impart pesticidal properties); apparel including outerwear, sportswear, sleepwear, socks, hosiery, undergarments, gloves and uniforms; footwear (boots, shoes and components); sports equipment and athletic gear; cloth for sails, ropes, tents and other outdoor equipment; sand bags; awnings; book covers; pictures.

#### HOW TO USE:

**MSDS INFORMATION:** BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET CAN BE OBTAINED BY WRITING TO GELEST OR BY CALLING (215) 547-1015. A MATERIAL SAFETY DATA SHEET FOR A TYPICAL USE DILUTION AQUEOUS SOLUTION IS ALSO AVAILABLE.

Wear goggles or face shield, protective clothing, and rubber gloves when handling the material. Use with proper ventilation.

HM 4005 Antimicrobial can be incorporated into or applied onto organic and inorganic substrates. HM 4005 Antimicrobial can be used to give a treatment 0.01 to 1.0 percent by weight of active ingredients. HM 4005 is a ready to use formulation and in most cases can be used as is without dilution. However, aqueous solutions of lower concentrations can be prepared for surface treatment by simply adding HM 4005 to water with stirring. NOTICE: Poor agitation when adding this silane to water can result in locally high concentrations. This process can be sped up by adequate stirring of the mixture. Surfaces can be treated with the aqueous solution by brushing, dipping, padding, soaking, spraying or fogging until adequately wet or applying by foaming techniques. After applying treatment, the surface should be allowed to dry at temperatures from ambient to a maximum of 160°C (320° F) to effect complete curing of silanol groups and to remove water or solvents. Curing of HM 4005 may be accelerated or enhanced with heat or catalysis. For each application, determine optimum application and drying conditions, such as time and temperature before use. If desired, reapply HM 4005 Antimicrobial if odor, staining and discoloration due to bacteria, mold or mildew occur.

Incorporate HM4005 Antimicrobial directly into formulations used to make end-use products, or dilute with water or alcohol and then apply it to the organic and inorganic surfaces to give 0.01 to 1.0 percent by weight of active ingredient.

#### \*FOR USE AS AN ANTIMICROBIAL TO PRESERVE FINISHED FOOD CONTACT ARTICLES SUBJECT TO FDA REGULATIONS

Incorporate HM 4005 Antimicrobial as an antimicrobial additive at or below the indicated maximum concentration into the polymeric manufactured products listed below that are used for manufacturing, packing, packaging, transporting, handling and/or holding food if such use is not intended to have any antimicrobial effect in the food itself. Do not incorporate HM 4005 Antimicrobial into any food or drinking water contact application listed on this label unless the substance is approved, with associated use conditions, for food contact in 21 CFR 174-186 (inclusive) as amended, or in the United States Food and Drug Administration's Food Contact Substance Notification System, as amended.

This Food Contact Substance (FCS) can be used as an additive without food type or temperature limitation in food preparation surfaces (where the FCS is either incorporated into the resin, a food contact laminated layer, or applied to the surface as part of a coating). The FCS may be used at a maximum use level of 1 active weight percent of the resin, laminate, or coating.

Use: Food contact coatings, films and laminates

Products: Appliances and equipment, barrier fabrics, building materials and components, collection and storage equipment (such as conveyor belts, piping systems, silos, tanks and process vessels), cookware, countertops, food wrap (including coated deli paper, coated meat interleavers and plastic wrap), general purpose containers, glazing for cement tile, glazing for vitreous china used in plumbing fixtures (such as sinks and countertops), industrial equipment, natural and synthetic fibers and fabrics, packaging, paper products (such as wipes, tissues, wall coverings, towels), plastic film, sinks

Maximum Concentration: 1% active weight percent of the resin, laminate, or coating.

Polymeric tubing for the transfer of beverages. The FCS may be used at a maximum use level of 1 active percent of the finished tubing.

Use: Food contact molded plastic parts

Products: Beverage dispensing equipment tubing, beverage processing equipment tubing

Maximum Concentration: 1% active weight percent of the finished tubing

Repeat use activated carbon water filters. The FCS may be used at a maximum use level of 0.25 active weight percent of the carbon block.

Use: Water filter

Products: Activated carbon water filters

Maximum Concentration: 0.25% active weight percent of the carbon block

### **STORAGE AND DISPOSAL**

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

**STORAGE:** Store in original, tightly closed container in an area inaccessible to children and away from food or feed. HM 4005 RTU is moisture sensitive. Keep tightly closed until ready to use. Reclose tightly after each use. Store in original, unopened containers at or below 25°C (77°F).

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. 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 DISPOSAL: Non-Refillable Metal Container-**Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent). Then offer for recycling if available or reconditioning if appropriate or puncture and dispose in sanitary landfill, or by other procedures approved by state or local authorities. **Non-Refillable Plastic Containers-**Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent). Then offer for recycling if available or reconditioning if appropriate or puncture and dispose in sanitary landfill, or if allowed by state or local authorities, by burning. If burned, stay out of smoke. **Non-Refillable Glass Containers-**Non-refillable container. Do not reuse or refill this container. Triple rinse (or equivalent). Then offer for recycling if available or dispose in a sanitary landfill, or by procedures approved by state and local authorities.

**NOTICE:** GELEST BIOSYSTEMS, LLC warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated in the labeling when used in accordance with directions under normal conditions of use; but this warranty of fitness for a particular purpose does not extend to the use of this product contrary to written instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use. **GELEST BIOSYSTEMS, LLC SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING THE WARRANTY OF MERCHANTABILITY.**

{Abbreviated Label for 100 gram size}

#### **HM 4005 Antimicrobial**

EPA Reg. No. 83019-3  
EPA Est. 83019-PA-001

ACTIVE INGREDIENT: 3-(trihydroxysilyl)  
propyldimethyloctadecylammonium  
chloride.....5.0%  
INERT INGREDIENTS:.....95.0%  
TOTAL:.....100.0%

KEEP OUT OF REACH OF  
CHILDREN

#### **WARNING**

Lot No: \_\_\_\_\_ Net Contents: \_\_\_\_\_

Please see enclosed sheet for full  
label information.

GELEST BIOSYSTEMS, LLC  
11 East Steel Road, Morrisville, PA 19067  
215-547-1015 CHEMTREC: 800-424-9300

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|                    |  |
|--------------------|--|
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8/8/2017