



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

May 19, 2020

David Swain  
Agent for  
Gelest Biosystems, LLC  
11 East Steel Rd  
Morrisville, PA 19067

Subject: Label and CSF Amendment – Alternate AI source and modified directions for use  
Product Name: HM 4100 Antimicrobial  
EPA Registration Number: 83019-1  
Application Date: February 14, 2020  
Decision Number: 560181

Dear Mr. Swain:

The amended label and CSF referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, are acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Please note that the record for this product currently contains the following CSF(s):

- Basic CSF dated 2/14/2020

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 the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. 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) list 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. Therefore, should the Agency find or if it is brought to our attention that a website contains false

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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 Compliance.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Tara Flint via email at [flint.tara@epa.gov](mailto:flint.tara@epa.gov) or Eric Miederhoff at [Miederhoff.eric@epa.gov](mailto:Miederhoff.eric@epa.gov).



Eric Miederhoff  
Product Manager 31  
Regulatory Management Branch I  
Antimicrobials Division (7510P)  
Office of Pesticide Programs

Enclosure

**ACCEPTED**

05/19/2020

September 25, 2019

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 83019-1

# HM 4100 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. 83019-1      EPA Est.No. 83019-PA-001

ACTIVE INGREDIENT: 3-(trihydroxysilyl) propyldimethyloctadecyl ammonium chloride:.....	84%
OTHER INGREDIENTS.....	16%
TOTAL: .....	100%

KEEP OUT OF REACH OF CHILDREN

### CAUTION

<b>FIRST AID</b>	
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, then continue rinsing.</li> <li>• Call a Poison Control Center or doctor for treatment advice.</li> </ul>

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear goggles or safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

#### 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 4100 Antimicrobial may be accomplished by addition of an anionic surfactant, or detergent in quantity equivalent to that of HM 4100 Antimicrobial in solution.

LOT NO. \_\_\_\_\_ NET CONTENTS \_\_\_\_\_

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Note to reviewer: All text in brackets [...] is optional and may or may not be included on a final label. All text in braces {...} is administrative and will not appear on a final label.

## PRODUCT FEATURES AND BENEFITS

HM 4100 Antimicrobial imparts durable biostatic activity to the surface of a wide variety of substrates.  
HM 4100 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 4100 Antimicrobial.  
Provides freshness and combats deterioration and discoloration caused by bacteria, fungi and algae.

## 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.

**PROTECTION OF FINISHED PRODUCTS AND INTERMEDIATE CONCENTRATES:** HM 4100 Antimicrobial can be used as an antimicrobial additive in (1) finished products and formulations listed below at levels consistent with their listing; and (2) intermediate concentrations up to 40% by weight (400 lbs. of HM 4100 Antimicrobial per 1,000 lbs. (i.e., as a master batch) in substances intended for further processing in an industrial environment into the finished products and formulations listed below consistent with the permitted finished product concentration. This rate applies only to intermediate manufacturing/industrial uses.

**APPROVED USES:** HM 4100 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, sand, 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 premixes); 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; silica sand (for use in swimming pool filters)

**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; nonwoven 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; tarps; awnings; book covers; pictures.

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## 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 SAFETY DATA SHEET CAN BE OBTAINED BY WRITING TO GELEST BIOSYSTEMS, LLC OR BY CALLING (215) 547-1015. A 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 4100 Antimicrobial can be applied to organic and inorganic surfaces as a dilute aqueous solution to give 0.01 to 1.0 percent by weight of active ingredients. Aqueous solutions can be prepared by simply adding the antimicrobial agent to water with stirring. NOTICE: Poor agitation when adding this silane to water can result in locally high concentrations, which may form gel particles. When in water, particles of HM 4100 will swell and become dispersed in water. This process can be sped up by increasing the temperature of the water to 160-190° F. Surfaces can be treated with the aqueous solution by brushing, dipping, soaking, or spraying until adequately wet. 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 polymer 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 antimicrobial if odor, staining and discoloration due to bacteria, mold or mildew occur.

Incorporate HM4100 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.

HM4100 Antimicrobial can be diluted in industrial, institutional or commercial water based formulas used to treat clean items. Concentrate may not be used in Residential locations. Only manufactured product treated with the antimicrobial concentrate to deliver 0.01% to 1.0% by weight of dry fabric may be used in residential locations.

Washable Linens, Draperies, Fabric, Bedding and Apparel:

Always treat only clean items and use only fresh rinse water.

Wash Tub: HM4100 Antimicrobial can be diluted in water based formulas used to treat clean items. Use wash basin or tub big enough to completely soak the item you are treating. Add an appropriate amount of solution to treat the textile or apparel with 0.01%-1.0% by weight of dry fabric. Completely submerge items in solution for 3 minutes. Remove items and dry. Test for staining and color-fastness of fabrics by treating and drying a small concealed area prior to application. Do not reuse solution after dipping/soaking. The substrate can be dried at room temperature or in clothes dryer at the appropriate setting for the items.

Washing Machine: HM4100 Antimicrobial can be diluted in water based formulas used to treat clean items during the softening/rinse cycle. Solution should be optimized to achieve between 0.01-1.0% of active ingredient by weight of dry fabric. Run the full softening/rinse cycle to treat the fabrics, then allow to dry overnight or use a dryer under the appropriate heat setting for the fabrics being treated. Test for staining and color-fastness of fabrics by treating and drying a small, concealed area prior to application.

For treating silica sand: Treat by spraying sand with dilute solution of product, or immersing sand into dilute solution of product (to provide up to 0.1% active ingredient by weight). After applying treatment, allow sand to cure 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.

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

Incorporate HM4100 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

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incorporate HM4100 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 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 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 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 or disposal.

**STORAGE:** Store in original, tightly closed container in an area inaccessible to children and away from food or feed. HM 4100 is moisture sensitive. Keep tightly closed until ready to use. Reclose tightly after each use. When stored in original, unopened containers at or below 25°C (77°F), HM 4100 Antimicrobial has a minimum shelf life of 24 months from date of shipment.

**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.

*{The appropriate container handling statement below will be selected}*

### **CONTAINER HANDLING:**

[For containers less than or equal to 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 this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

[For containers greater 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. Fill the container ¼ full with water. Recap 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. Turn the container over onto its other end and tip it back and forth several

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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.

{Lot code may appear on either the container or label}



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

**MADE IN U.S.A.**

**NOTICE:** GELEST BIOSYSTEMS, LLC warrant 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 DISCLAIM ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING THE WARRANTY OF MERCHANTABILITY.**

[Optional Graphic – following graphic may or may not appear on label]



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