

FOCUS on Antimicrobials

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Antimicrobials are protective agents registered with the U.S. Environmental Protection Agency that may be added to everyday products, including durable coated fabrics, to inhibit (1) the growth of microorganisms such as mold and mildew that can stain surfaces, lead to their deterioration and cause odors, and (2) the growth of bacteria that could spread disease.

Q: WHY ARE ANTIMICROBIALS USED IN COATED FABRICS?

A: As with most products we come in contact with, coated fabrics can harbor bacteria and fungi (mold and mildew). With contract upholstery, such microorganisms can grow on the polymer surface or the fabric backing. The addition of antimicrobials to the polymer coating formulation by the coated fabrics manufacturer can inhibit such growth when combined with the regular – and proper – use of cleaners and disinfectants to remove surface growth.

Q: WHERE DO YOU SUGGEST ANTIMICROBIALS BE USED AND WHY?

A: Antimicrobials have important functions in hot, humid environments and in upholstery applications in healthcare, outdoor, marine and transportation. In each of these, the ability to inhibit mold and mildew from growing on the fabric's surface and backing may be important to the specifier. In healthcare, some of these ingredients work to inhibit the growth of disease-causing bacteria.

Antimicrobials can also be instrumental in the prevention of pink staining caused by a dye excreted by a certain class of bacterial microorganisms called actinomycetes that can be absorbed by PVC (vinyl) compounds.

Q: ARE ANTIMICROBIALS REGULATED AND MONITORED FOR SAFETY?

A: Yes, the U.S. Environmental Protection Agency (EPA) Antimicrobial Division evaluates the effect of antimicrobials on humans and other organisms during its registration evaluation process. When the EPA approves an antimicrobial for registration, the agency concludes its use “will not cause unreasonable adverse effects on humans or the environment when applied according to the label directions and restrictions.”¹ Product labels are reviewed carefully by the EPA, state agencies and suppliers to ensure that the instructions for safe handling are clear and understandable.



¹ Pesticide Registration Manual – Overview of Requirements for Pesticide Registration and Registrant Obligations, U.S. Environmental Protection Agency



Q: HOW DO I KNOW IF A COATED FABRIC CONTAINS AN ANTIMICROBIAL?

A: Your coated fabric manufacturer's data sheet should indicate whether the product contains an antimicrobial. If not, ask.

Q: WHY HAVE THERE BEEN EFFORTS TO REMOVE ANTIMICROBIALS FROM COATED FABRICS?

A: In the wake of a broader effort to quell opposition from those who oppose the use of chemicals in consumer products, manufacturers have responded to requests from some customers to remove all antimicrobials from certain coated fabric product lines. It is important to note that the antimicrobials used in coated fabrics are not topical treatments, but rather are tightly embedded in the polymer compounds and have been used safely for decades. Before a decision is made to select coated fabrics without them, their value in the intended application should be carefully considered.

Q: WHAT TEST METHODS ARE USED TO DETERMINE IF A COATED FABRIC IS RESISTANT TO FUNGI AND BACTERIA?

A: The industry consensus standards CFFA-U-201F and CFFA-MARINE/VINYL-201D reference test methods to determine the effectiveness of an antimicrobial in coated fabrics.

Mold and Mildew: CFFA Standard Test Method 120, based on ASTM G-21, is the test for mildew resistance. Test specimens are inoculated with a mixed fungal spore suspension of *Aspergillus braziliensis*, *Penicillium funiculosum*, *Chaetomium globosum*, *Aureobasidium pullans* and *Trichoderma virens*, then incubated at 84° F and 85 percent relative humidity for 28 days.

Bacteria: CFFA Standard Test Method 300, based on AATCC TM 147, is the test for bacterial resistance. Test specimens are streaked with *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Salmonella choleraesuis*, and *Pseudomonas aeruginosa*, then incubated at 99° F for 18-24 hours.

Pink Stain: CFFA Standard Test Method 121, based on ASTM E-1428, is the test for pink stain. Specimens are exposed to an actinomycete, *Streptovorticillium reticulae*, then incubated in a Petri dish for 14 days at 84° F.

Q: CAN I USE DISINFECTANTS ON COATED FABRICS WITHOUT DAMAGING THE EXISTING ANTIMICROBIALS?

A: Yes, antimicrobial disinfectants can be used for cleaning and disinfecting purposes by a facility's environmental services operation. The most common are quaternary ammonium chemicals, or quats; chlorine bleach; and hydrogen peroxide. However, care must be taken when such disinfectants are used on coated fabrics to avoid damage to the surface finish and shorten the expected service life. CFFA Standard Test Method 100, Accelerated Exposure to Disinfectants is the test for resistance to disinfectants. To extend service life, CFFA recommends rinsing after each use, or at least on a weekly or monthly maintenance basis. Please refer to CFFA resource [FOCUS on Healthcare Surface Disinfection](#) for further information on this topic.

