

KILLING BACTERIA ON PAINTED SURFACES

Advancements in coating technology to help prevent the spread of certain harmful bacteria

By Steve Revnew, Sherwin-Williams

Infection-prevention professionals use a number of techniques to kill harmful pathogens in health care settings. Now, recent advancements in technology have added a new weapon to the arsenal when it comes preventing the spread of disease-causing bacteria — microbicidal paint with the capability to kill bacteria on painted surfaces.

Coatings today are more advanced than ever before, and can be a key part of the solution for hospitals and other health care environments seeking ways to overcome some of their biggest challenges. Among the concerns of those working or spending any time in health care facilities are harmful bacteria such as Staph (*Staphylococcus aureus*), MRSA (Methicillin-resistant *Staphylococcus aureus*), *E. coli* (*Escherichia coli*) and others.

It's important to be aware of the role that microbicidal paint can play and how this technology differs from that of paints with antimicrobial and antibacterial properties, in order to drive the most impactful outcome.

Paint technologies and terminology

Several terms that are used to describe various types of coatings are often misused or misunderstood. Here are the significant differences between antimicrobial, antibacterial and microbicidal paints.

Antimicrobial: When microbes grow on the painted surface, they can stain and deteriorate it, thus reducing the coating's effectiveness. Coatings that contain an antimicrobial can inhibit the growth of these microorganisms, such as mildew and mold, protecting the film itself from degradation. In addition, antimicrobial agents inhibit the growth of bacterial odor.

The term antimicrobial can be used in a variety of product claims across industries. As such, products with a public or non-public health claim must go through appropriate testing by product type to demonstrate efficacy.

Antibacterial: A type of antimicrobial, antibacterial agents are used to inhibit the growth of bacteria. However, in paint, antibacterial agents typically inhibit only the growth of the common microbes that make up harmful bacteria, thus only protecting the paint film itself.

Microbicidal: Generally speaking, microbicidal substances or compounds go a step further by actually killing microscopic organisms on the surface. Paints formulated with these properties are designed to kill microorganisms, such as bacteria, on painted surfaces. Any product that claims to kill microorganisms must be registered with the Environmental Protection Agency (EPA).

For example, [Sherwin-Williams Paint Shield](#) is the first microbicidal paint registered with the EPA based on results from a third-party, EPA-inspected, Good Laboratory Practice (GLP) lab. This product kills greater than 99.9 percent of Staph (*Staphylococcus aureus*), MRSA (Methicillin-resistant *Staphylococcus aureus*), *E. coli* (*Escherichia coli*), VRE (Vancomycin-resistant *Enterococcus faecalis*) and *Enterobacter aerogenes* within two hours of exposure on a painted surface. It continues to kill 90 percent of these bacteria even after repeated contamination for up to four years when the integrity of the surface is maintained.

Unlike antimicrobial paint, this paint has an active ingredient — quaternary ammonium compound (Alkyl Dimethyl Benzyl Ammonium Chloride) commonly known in the healthcare industry as “quat” — that kills five disease-causing bacteria. Maintaining its stability for use in coatings was key to making this new paint a reality.

This advancement in technology means hospitals and other healthcare facilities now have the ability to continuously kill harmful bacteria on painted surfaces. It's a passive method of protection that works in coordination with other cleaning and sterilization protocols.

With today's advanced coating technologies, health care professionals can expand their array of options when striving to prevent the spread of disease-causing bacteria within their facilities.

(706 WORDS)

Steve Revnew, senior vice president, product innovation at Sherwin-Williams, has been in the product-innovation market space for more than 15 years. A chemist by training, Revnew began his career in the Sherwin-Williams research and development labs before venturing into the world of marketing and sales. Revnew has led the development of many Sherwin-Williams industry-leading products, including ones designed to provide multi-functional capabilities in health-care facilities. A member of the National Association of Home Builders and the U.S. Green Building Council, he also served on the Painting and Decorating Contractors of America's Board of Directors and as the Chairman of the PDCA National Associates Board. Revnew has a B.S. in chemistry from Eastern Michigan University and an MBA from Baldwin-Wallace College.