

Antimicrobial Copper: The First Touch Surfaces Approved by the U.S. Environmental Protection Agency (EPA) to Make Human Health Claims

Antimicrobial Copper surfaces kill more than 99.9% of disease-causing bacteria

After rigorous testing that demonstrated antimicrobial efficacy, the U.S. EPA approved the following claims for Antimicrobial Copper surfaces:

Laboratory testing has shown that when cleaned regularly, Antimicrobial Copper surfaces

- Continuously reduce bacterial contamination, achieving 99.9% reduction within two hours of exposure.
- Kill greater than 99.9% of Gram-negative and Gram-positive bacteria within two hours of exposure.
- Deliver continuous and ongoing antibacterial action, remaining effective in killing greater than 99.9% of bacteria within two hours.
- Kill greater than 99.9% of bacteria within two hours, and continues to kill more than 99% of bacteria even after repeated contamination.
- Help inhibit the buildup and growth of bacteria within two hours of exposure between routine cleaning and sanitizing steps.

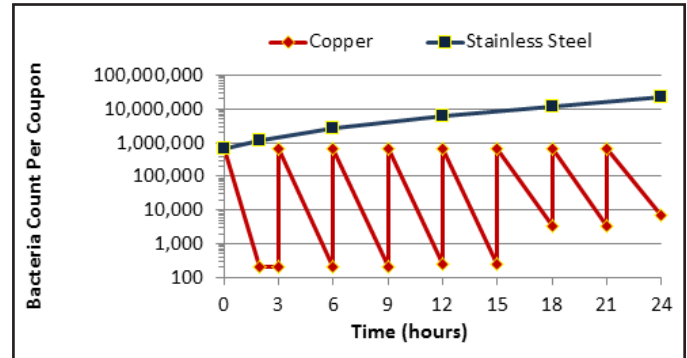
Previously, only liquids, aerosols, gases, and powders could make human health claims

Antimicrobial Copper's effectiveness was demonstrated against six bacteria:

- Methicillin-Resistant *Staphylococcus aureus* (MRSA),
- Vancomycin-resistant *Enterococcus faecalis* (VRE),
- *Staphylococcus aureus*,
- *Enterobacter aerogenes*,
- *Pseudomonas aeruginosa*
- *E. coli* O157:H7.

3 Rigorous testing protocols verified antimicrobial efficacy

- Efficacy as a Sanitizer: measures surviving bacteria on surfaces after two hours
- Residual Self-Sanitizing Activity: measures surviving bacteria on surfaces before and after six wet and dry wear cycles over 24 hours
- Continuous Reduction of Bacterial Contamination: measures surviving bacteria after repeatedly inoculating surfaces eight times in a 24-hour period without intermediate cleaning



Results of the Continuous Reduction of Bacterial Contamination Test. MRSA was continuously killed on copper, even after repeated inoculations. On the contrary, it readily survived and accumulated on stainless steel. The survivors seen after 18 hours on copper were the result of shielding by dead MRSA.

Over 450 copper alloys registered as antimicrobial materials

- Over 3,000 Antimicrobial Copper alloy samples tested
- Each alloy has a unique set of mechanical and physical properties and can be fashioned into an assortment of products

The EPA requires the following statement to be included when making public health claims related to the use of Antimicrobial Copper Alloys

"The use of Antimicrobial Copper surfaces is a supplement to and not a substitute for standard infection control practices; users must continue to follow all current infection control practices, including those practices related to cleaning and disinfection of environmental surfaces. Antimicrobial Copper has been shown to reduce microbial contamination, but it does not necessarily prevent cross-contamination."

EPA determined that these products pose no risk to public health; they have been in use for centuries, and no harm from their use is known.

EPA Registration Numbers 82012-1 to 6



Copper Development Association
Copper Alliance

Antimicrobial Copper

