

Antimicrobial Copper: Everything Old is New Again

If the song lyric, “everything old is new again,” has become a cliché, it is because the saying rings true. Good ideas from the past – and even a few bad ones – are reintroduced and updated by every generation to suit their specific needs. It is true in fashion, see: leg warmers; in music, see: Jay-Z’s rendition of the Sinatra classic, “Empire State of Mind;” and it’s true in technology, see: antimicrobial copper.

Antimicrobial copper may not be as recognizable a reintroduction as the others, but it has been part of our history for much longer. According to ancient texts, the Egyptians used copper to clean wounds as early as 2400 B.C.; two millennia later the Greek doctor Hippocrates also recommended using copper to treat wounds; in the eighteenth century the British Navy began sheathing the hulls of their ships in copper to prevent the build up of algae and barnacles; and the copper solution that was first used to protect grapes from fungus in nineteenth century France is still being used today. Using copper for its pathogen-fighting abilities is nothing new, but now, in the 21st century, copper’s antimicrobial property has been confirmed by modern science.

Laboratory testing has shown that copper and its alloys, brass and bronze, kill more than 99.9 percent of bacteria*, such as the superbug Methicillin-resistant *Staphylococcus aureus*, or MRSA, within two hours. What this means in the real world is that high-traffic touch surfaces in schools, hospitals, and public facilities of all kinds, can be made inherently antimicrobial (as long as they are cleaned regularly of dirt or residue that can prevent contact with the surface).

Cross-contamination of bacteria and viruses is how 80 percent of illnesses are spread. When someone with a cold or the flu sneezes or coughs into his hand and then opens a door, the next person to touch that doorknob runs the risk of becoming infected. Frequent hand washing is important to reducing the risk of transmitting germs; another tool is to make the surface antimicrobial. Door handles, push plates, countertops and other frequently touched fixtures are commonly made of stainless steel, aluminum or plastic – materials that can harbor pathogens for days, even weeks, until they are disinfected, usually with harsh chemicals. Surfaces made of uncoated copper, brass or bronze, however, begin neutralizing bacteria* immediately, killing more than 99.9% within two hours. The use of copper products in public facilities is opening a new line of defense against the unbridled growth of infectious organisms*.

*The Environmental Protection Agency has registered copper, brass and bronze as antimicrobial and is allowing public health claims to be made about their effectiveness against *Staphylococcus aureus*, MRSA, *E. coli* O157:H7, *Enterobacter aerogenes* and *Pseudomonas aeruginosa*. Copper alloys are a supplement to existing infection control practices and are not a replacement for good hygiene and surface disinfection. Copper alloy surfaces have been shown to reduce microbial contamination, but they do not necessarily prevent cross-contamination.