

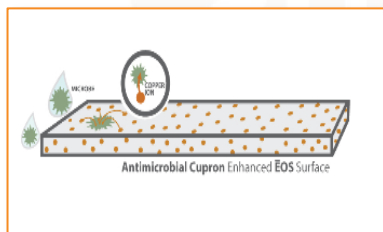


## The Powerful Protection of EOS<sup>CU</sup> – The Only Biocidal Hard Surface Available

With the rise of hospital acquired infections (HAIs) and antibiotic-resistant microbes, new infection control methods are necessary. Norfolk, VA-based EOS Surfaces, a hard surface manufacturer, saw an opportunity to develop new technologies to help reduce the incidence of HAIs. EOS Surfaces partnered with Cupron Technologies, a copper-based technology that harnesses the antimicrobial powers of copper within a polymer structure, to develop EOS<sup>CU</sup>, the first hard surface proven to kill bacteria\* 24 hours a day, 7 days week. The only surface of its kind, EOS<sup>CU</sup> adds a layer of continuous, active protection against harmful bacteria.\*

### How It Works

EOS<sup>CU</sup> is embedded with cupreous oxide, a naturally-occurring biocidal that effectively deactivates a broad spectrum of microbes, just by exposure to its ions. In addition to deactivating microbes, the ions also interfere with the microbes' numerous biological defense mechanisms in such a way that makes antimicrobial resistance highly unlikely.



That means that EOS<sup>CU</sup> is a self-sanitizing surface that eliminates over 99.9% of bacteria\* within two hours of exposure, even after repeated contamination. EOS<sup>CU</sup> has all of the advantages of a solid surface – durability, seamless fabrication and a beautiful aesthetic – with the unparalleled ability to continuously kill bacteria. The durable, non-porous nature of the product and the active ingredients embedded throughout the material allow it to be easily refinished, repaired and cleaned, without losing efficacy.

### The EOS<sup>CU</sup> surface:

- Provides the highest level of active bacteria\* reduction found in any surface
- Actively kills greater than 99.9% of Gram-negative and Gram-positive bacteria\* within 2 hours of exposure
- Continually reduces bioburden, even after surface recontamination
- Is always working without added or new human processes
- Is the only synthetic hard surface EPA-registered for public-health claims against bacteria\* contamination

EOS<sup>CU</sup> can be used in a variety of healthcare settings, including acute-care and specialty hospitals, outpatient facilities, nursing homes, assisted-living facilities, medical and dental offices and research facilities. As a molded product, it can be installed in many capacities within these settings including, but not limited to, countertops, vanities, bedside tray tables, hospital bed rails and shelving.



For more information, go to [www.cupron.eos-surfaces.com](http://www.cupron.eos-surfaces.com).

\*Testing demonstrates effective antibacterial activity against *Staphylococcus aureus* (ATCC 6538), *Enterobacter aerogenes* (ATCC 13048), Methicillin-resistant *Staphylococcus aureus* (MRSA-ATCC 33592), *Escherichia coli* O157:H7 (ATCC 35150) and *Pseudomonas aeruginosa* (ATCC 15442).

*The use of EOS<sup>CU</sup> 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. EOS<sup>CU</sup> has been shown to reduce microbial contamination but it does not necessarily prevent cross contamination. This product must not be waxed, painted, lacquered, varnished or otherwise coated.*



## The Benefits of Copper

Copper is an essential nutrient in the human body, and naturally antimicrobial. The first recorded medical uses of copper date back to the ancient Egyptians, Romans, and Aztecs, who used it for health, wellness and biocidal purposes.

### The Superior Antimicrobial Capabilities of Copper

Copper's innate bacteria-killing characteristics make it a natural antimicrobial agent. The element in its most effective form, copper oxide, eliminates bacteria through ions that damage bacterial cells. When bacteria and copper oxide ions come into contact, the ions weaken the outer membrane of the bacteria cell through the process of oxidation, causing the cell to rupture and die.

Not all antimicrobial products are created equal. Many products claim to be antimicrobial, but the majority of those antimicrobials only inhibit *odor*-causing bacteria. In contrast:

- Preventive | Biocidal Surfaces and copper alloys (e.g., brass and bronze) are the only solid surface materials registered by the U.S. Environmental Protection Agency (EPA) to make public health claims.<sup>1</sup>
- Cupreous oxide, which is embedded in EOS<sup>CU</sup>, is a biocidal that effectively deactivates a broad spectrum of microbes, just by exposure to its ions.<sup>2</sup> In addition to deactivating microbes, the ions also interfere with the microbes' numerous biological defense mechanisms in such a way that makes antimicrobial resistance highly unlikely.
- Unlike coatings or other treated materials, the antibacterial efficacy of the copper oxide won't wear away. It offers long-term protection, whereas antimicrobial coatings are fragile and can deteriorate or wear off after time.<sup>2</sup>

### How Copper Antimicrobials Help in Healthcare Settings

Hospital-acquired infections are a threat to public health safety. The Centers for Disease Control (CDC) estimates that on any given day, 1 in 25 hospital patients has at least one hospital-acquired infection. About 99,000 hospital patients die each year from infections acquired during hospitalization.<sup>3</sup> For decades, the only options to combat transmitting bacteria and viruses were related to hand hygiene and the cleaning and disinfecting of surfaces that harbor germs.

Copper is a Preventive | Biocidal and can therefore be more efficacious in helping reducing the spread of hospital-acquired infections. Copper alloy surfaces, including EOS<sup>CU</sup>, that are registered with the Environmental Protection Agency (EPA) are proven to continuously kill 99.9% of bacteria within two hours of contamination. This means that high-traffic surfaces that often harbor infectious bacteria, such as countertops, tabletops and bed rails, can continuously self-sanitize, which reduces the risk of infection and lowers the bioburden in a facility by keeping these surfaces clean and disinfected. Further, the efficacy of copper is not impacted by abrasions or other physical damage, and it does not require special cleaning procedures or maintenance to maintain its effectiveness. This ease of use and long-term reliability is part of what makes copper products like EOS<sup>CU</sup> an industry leader in preventing the spread of bacteria.

### Why EOS<sup>CU</sup>

Today, we can benefit from copper's antimicrobial properties while still enjoying the aesthetics of a hard surface, through EOS<sup>CU</sup>. With a vision to be the most trusted Preventive | Biocidal surface available, EOS Surfaces formed an innovative partnership with Richmond, VA-based Cupron Inc., whose technology utilizes and integrates the qualities of copper oxide into solid and polymeric material products during manufacturing. These copper-infused polymers are embedded into EOS solid surface materials, transforming them into antimicrobial products. The partnership between EOS Surfaces and Cupron created EOS<sup>CU</sup>, the first EPA-registered synthetic hard surface that works continuously to kill 99.9% of bacteria in less than two hours, even after recontamination. **For more information, go to [www.cupron.eos-surfaces.com](http://www.cupron.eos-surfaces.com).**

<sup>1</sup> Cupron, (n.d.). *Copper's Benefits*. Retrieved from: <http://www.cupron.com/cupron---technology/power---of---cupron/coppers---benefits.htm>  
<http://www.cupron.com/cupron---technology/power---of---cupron/coppers---benefits.htm>.

<sup>2</sup> U.S. EPA Public Health Registration 82012--1 through 82012--6:  
<http://www.epa.gov/pesticides/factsheets/copper---alloy---products.htm>.

<sup>3</sup> "The Direct Medical Costs of Healthcare--Associated Infections in U.S. Hospitals and the Benefits of Prevention," R. Douglas Scott II, Division of Healthcare Quality Promotion National Center for Preparedness, Detection, and Control of Infectious Diseases Coordinating Center for Infectious Diseases Centers for Disease Control and Prevention, March 2009.



## The Importance of EPA Registration for Public Health Claims

### What Is EPA Registration for Public Health Claims?

An Environmental Protection Agency (EPA) Registered Public Health Claim is the highest standard for making statements regarding a product's impact on harmful bacteria and any implication of beneficial impact on the health of individuals. An EPA registration number tells consumers that the product has gone through rigorous testing and found not to be a threat to consumer health or the environment.<sup>1</sup>

### How to Get an EPA Registration

It is difficult and costly to get an EPA Registration. Products have to submit test samples of their product to an EPA-approved laboratory that tests the efficacy of the product claims. Central to the testing is the distinction that a manufacturer's end product, not just the antimicrobial used on it, is submitted to the laboratory for testing.

- The efficacy test methods provide a demanding challenge to the product, as the level of bacteria used in the tests are at least 1,000 times greater than the contamination level typically found on surfaces in health care facilities.
  - Thousands of samples need to be provided to the EPA for testing.
  - Samples have to achieve a zero-fail rate, exhibiting an ability to kill an EPA-assigned range of harmful bacteria within the two-hour time frame while also withstanding a series of comprehensive abrasion techniques without losing efficacy over time. The products are tested:
    - Under various environmental conditions
    - With different cleaning protocols
    - For efficacy after repeated exposure
- If a product fails this testing, the EPA will issue a fine to the manufacturer or initiate a removal of the product from the marketplace.<sup>2</sup>

### Why Does It Matter?

While there are many antimicrobial products in the marketplace, there are only two hard surfaces capable of making these claims. The registration of EOS<sup>CU</sup> (Cupron Enhanced EOS Surfaces) means that it can uniquely make the following public health claims:

- This surface continuously reduces bacterial contamination, achieving 99.9% reduction within two hours of exposure.
- This surface kills greater than 99.9% of Gram-negative and Gram-positive bacteria within two hours of exposure.
- This surface delivers continuous and ongoing antibacterial action, remaining effective in killing greater than 99.9% of bacteria within two hours.
- This surface kills greater than 99.9% of bacteria within two hours, and continues to kill more than 99% of bacteria even after repeated contamination.
- This surface helps inhibit the buildup and growth of bacteria within two hours of exposure between routine cleaning and sanitizing steps.

For more information about EOS<sup>CU</sup>, go to [www.eoscu.com](http://www.eoscu.com).

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<sup>1</sup> *About Pesticide Registration*. (n.d.). Retrieved from U.S. Environmental Protection: <http://www2.epa.gov/pesticide-registration/about-pesticide-registration.html>.

<sup>2</sup> *Antimicrobial Testing Program*. (2014, August). Retrieved from U.S. Environmental Protection Agency: <http://www.epa.gov/oppad001/antimicrobial-testing-program.html>.