



## Cleaning CuSalus® Products Made with CuVerro® Antibacterial Copper Alloys

Copper and copper alloys are active surfaces and will develop an oxide called a patina over the course of 2-4 weeks if washed and cleaned using existing agents and protocols. Once established, the patina is stable and protects the component from further oxidation unless it comes into contact with strong reagents. The developed patina does not reduce efficacy of copper's antimicrobial effect as confirmed through laboratory testing and clinical trials.

**EACH FACILITY SHOULD USE ITS NORMAL DISINFECTION PROTOCOLS**  
**NO SPECIALIZED CLEANING PROTOCOL IS REQUIRED TO MAINTAIN COPPER'S ANTIMICROBIAL EFFICACY**

There are three types of cleaning products to consider:

**Hospital Detergents** – these will clean grease and other soil from surfaces and should always be used prior to disinfection.

- Most cleaning products are proprietary and will have instructions for use – always refer to manufacturers' instructions.
- Items should be cleaned, dried (disinfected as necessary) and inspected before use.
- If applying disinfectant after normal cleaning, it is common to wash with clean water and dry between these steps to ensure optimum activity of disinfectant.
- Cleaning wipes are single use products and should be disposed of after use.
- Some products may combine disinfectants with detergents and allow single-step use.

**Hospital Disinfectants** - these will disinfect the surface of the copper and generally contain:

- Alcohols - not corrosive to copper alloys, but not active against all microbes.
- Bleaches - containing chlorine or with the active ingredient sodium hypochlorite; the solution is not corrosive to copper alloys when used correctly.
- Quaternary ammonium – such compounds do not damage copper alloys.
- Ammonium chloride - is of little concern for copper when used in normal dilute formulations.
- Phenol and ammonia - are rarely used organic chemicals and are not harmful to copper.

**Other disinfection techniques:**

- Hydrogen peroxide (solution or vapor - HPV) has no long-term effect on copper alloys.
- Steam may be used for cleaning or disinfection and will not harm copper alloys.

## Cleaning CuSalus® Products Made with CuVerro® Antibacterial Copper Alloys - continued

- Formaldehyde is sometimes used for laboratory disinfection and fumigation and is not deleterious to copper or copper alloys.

**Metal Polishes and Cleaners** - these will brighten the appearance of the copper and copper alloys. In addition, a simple Scotchbrite® pad (7448 Ultra Fine or 7447 General Purpose) will remove any deep stains prior to cleaning and disinfection.

- Citric acid-based cleaners are preferred as they disinfect and remove tarnish without leaving a residue.
- Proprietary polishing products, such as Brasso, will clean the copper but are not recommended as they may leave a residual film which inhibits the antimicrobial effect of copper for a period of time. Removal of this residue can be difficult but may be achieved with alcohol wipes.
- Disinfectant products containing metal-ion chelators, such as EDTA, should be avoided, as these partially and temporarily inhibit copper's efficacy.

### **Sustainability**

CuVerro® is made from up to 100% recycled copper material and is 100% recyclable. In fact, nearly all of the copper mined to date is still in circulation because the recycling rate of copper is higher than that of any other engineering metal.

The bactericidal properties of copper are inherent, so no additives are required. For healthcare environments especially, copper provides the assurance of no VOCs (volatile organic compounds), PVC (poly vinyl chlorides), phthalates or other pollutants that can adversely impact air quality. In keeping with the environmentally friendly properties of copper, no glue sealants, or adhesives are used in the manufacturing processes of CuVerro®.

Copper has played a role in Sustainable Building, and has been one of the materials of choice for energy efficiency and sustainability, and a mainstay in solar, wind and wave renewable energy systems.

The EPA has evaluated the acute toxicity of copper and found there to be "no risk to public health." Since early human existence, copper has been an essential material in many applications.

**Testing demonstrates effective antibacterial activity against: Methicillin-Resistant Staphylococcus aureus (MRSA), Vancomycin-resistant Enterococcus faecalis (VRE), Staphylococcus aureus, Enterobacter aerogenes, Pseudomonas aeruginosa, and E. coli O157:H**

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For additional information concerning the benefits of antibacterial copper, please visit [www.copperalloystewardship.com](http://www.copperalloystewardship.com)

CuSalus is a registered EPA establishment, producing antibacterial copper products in full compliance with 7 U.S.C. §136e.

EPA Facilities No. 87753-CT-001

The use of a copper alloy surface 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. The Copper Alloy surface material has been shown to reduce microbial contamination, but it does not necessarily prevent cross-contamination.

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