
Antimicrobial Copper Alloy Touch Surfaces

Guidance on Cleaning and Disinfection

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Antimicrobial copper surfaces are a supplement to, and not a substitute for, standard infection control practices and users should continue to follow all current infection control guidelines, including those related to cleaning and disinfection of environmental surfaces.

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 according to results from laboratory testing and clinical trials.

There are three types of cleaning products to consider – see below. For any product specific information, it is recommended that the manufacturer is contacted.

Disinfectant products containing metal-ion chelators, such as EDTA, should be avoided, as these partially and temporarily inhibit copper's efficacy. Copper Alliance is working with leading companies to support the development of cleaning and disinfection products that work synergistically with copper alloys.

1) 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.

2) 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 vapour – HPV) has no long-term effect on copper alloys.
- ◆ Steam may be used for cleaning or disinfection and will not harm copper alloys.
- ◆ Formaldehyde is sometimes used for laboratory disinfection and fumigation and is not deleterious to copper or copper alloys.

3) Metal polishes and cleaners – these will brighten the appearance of the copper and copper alloys.

- ◆ 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.

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