

# PPG COPPER ARMOR™

ANTI-VIRAL & ANTI-BACTERIAL\* INTERIOR PAINT

## TECHNICAL BULLETIN

### SUMMARY:

- Terms like “anti-microbial”, “anti-bacterial”, and “anti-viral” have become ubiquitous in the current lexicon. However, they tend to be interchanged and overused when describing products. These terms are distinct and can imply different levels of efficacy when it comes to sanitizing surfaces and killing microorganisms.
- It is also critical to understand the rigor of Environmental Protection Agency (EPA) testing and registration requirements as they relate to these types of claims. Registration with the EPA and describing a product as “anti-viral” or “anti-bacterial” signifies a much more thorough review of data than simply claiming “anti-microbial properties”.
- PPG *Copper Armor* with Corning® Guardiant® copper ion technology is registered with the EPA as an Anti-Viral & Anti-Bacterial Interior Paint. It kills 99.9% of viruses and bacteria\* on the painted surface within 2 hours of exposure and continuously sanitizes the surfaces for up to 5 years<sup>^</sup>.



### ANTI-VIRAL & ANTI-BACTERIAL VS. ANTI-MICROBIAL:

Many paint products in the market use the term “anti-microbial”. Within the PPG portfolio, products such as PURE PERFORMANCE® and SPEEDHIDE® ZERO include anti-microbial claims. However, there is a significant difference between these types of products and an EPA-registered, anti-viral and anti-bacterial product such as *Copper Armor*. “Anti-microbial” implies that a product contains a biocide but the purpose of that biocide is to protect the paint film from microorganisms to help prevent undesirable effects like discoloration. In such products, the paint itself is protected, not the user. Anti-microbial products will only slow or inhibit the growth of microorganisms; they will not kill them.

Conversely, *Copper Armor*, which has gone through rigorous EPA testing protocols, can make claims that benefit public health. This product has been proven to actually kill germs and microorganisms and is allowed, by the EPA, to make public health claims. Therefore, *Copper Armor* goes beyond simple anti-microbial claims to achieve anti-viral and anti-bacterial properties.

### KILLS 99.9% OF VIRUSES AND BACTERIA

For a product to reach a 99.9% viral and bacterial kill threshold, it must meet the EPA test method that measures microbial activity within a 2-hour timespan. *Copper Armor* passed this test and will kill 99.9% of the following microbes (also listed on product label):

- Pseudomonas aeruginosa
- Enterococcus faecium
- Acinetobacter baumannii
- MRSA
- A. Baumannii
- E Coli
- SARS Cov-2
- Staphylococcus aureus
- Klebsiella pneumonia
- Enterobacter
- VRE
- K aerogenes
- FCV

*Copper Armor* kills the aforementioned viruses and bacteria within 2 hours of exposure to the painted surface. *Copper Armor* is also highly effective at killing resistant strains such as MRSA and other ESKAPE pathogens which are the leading causes of hospital acquired infections. *Copper Armor* is only intended to supplement current sanitation and disinfection practices. It is not meant for use as a replacement for EPA-registered disinfectants. Regular cleaning and/or disinfection practices currently in place should be continued.



## CONTINUOUSLY SANITIZES FOR 5 YEARS<sup>^</sup>

Traditional liquid based disinfectants treat the surface at the time of application but are not effective at killing viruses and bacteria beyond that point of application. Liquid disinfectants require constant reapplication to remain effective. Although *Copper Armor* is not intended to replace traditional cleaning methods, it is a continuously active supplemental layer of protection that has long lasting efficacy against bacteria and viruses for up to 5 years between regular cleaning and disinfecting. The EPA test required to claim 5 years of effectiveness is a simulation that is intended to represent a degree of normal physical wear, as well as reproduce potential effects resulting from repeated exposure to cleaning materials over a period of 5 years.

Surfaces coated with *Copper Armor* passed the EPA test, meaning they are effective at killing viruses and bacteria for up to 5 years as long as the integrity of the coating is maintained.

## RESISTANT STRAINS

With regard to new anti-viral and anti-bacterial products, there is consistently skepticism as to whether the new product will contribute to resistant strains. This growing global concern over microbes developing resistance to new anti-viral and anti-bacterial products tends to slow the acceptance of a new product in market.

One of the biggest benefits of copper is that it has been present in civilization for thousands of years without showing any signs of contributing to resistant strains. The copper element is used in building materials, decorations, clothing and countless other common applications throughout society. When microbes land on a copper-containing surface, the copper ions (electrically charged particles) prevent cell respiration, disrupt the cell membrane, and destroy the DNA and RNA within. This means that the microbe has almost negligible probability to mutate and develop resistance to copper. *Copper Armor* derives anti-viral and anti-bacterial properties from Corning Guardian, a copper and glass additive. It uses no additional chemicals beyond those found in a standard wall paint.



\* Kills 99.9% of bacteria *Staphylococcus aureus* (Staph), *Pseudomonas aeruginosa*, *Enterococcus faecium*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Enterobacter aerogenes*, Methicillin-resistant *Staphylococcus aureus* (MRSA), Vancomycin-resistant enterococci (VRE), *Escherichia coli* (E. coli), and *Salmonella*, and viruses Feline Calicivirus and SARS CoV-2 within 2 hours of exposure to paint surfaces.

<sup>^</sup> Effective for up to 5 years based on test method "Protocol for the Evaluation of Bactericidal Activity of Antimicrobial Coated Surfaces" (MRID 51062601) as long as the integrity of the surface is maintained and is part of a comprehensive infection control and hygiene program. Cleaning agents typically used to maintain painted surfaces are permissible including multi-purpose, bleach, and peroxide cleaners. Quaternary ammonium (quats) disinfectants should be avoided.

