

Self-sanitizing Interiors



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Most of us are blissfully unaware of the microorganisms that share our living environments. Fighting off germs that are common to our home environments strengthens our immune systems. Advance years or conditions of bodily stress can weaken or overwhelm the immune system. This is why it is crucial for medical care and senior living facilities to maintain exceptionally hygienic environments. In social gatherings each individual faces unfamiliar germs. Educational and public facilities, as well as public transit systems are also major factors in the spread of disease.

All “germs” are not created equal. Bacteria, molds and fungi are complete living organisms. They carry on their life functions within their own cells. Viruses, on the other hand, are not complete and can only carry on reproduction and metabolism when inside a host organism. That is why antibiotics are not effective on viruses. This distinction becomes important in regard to the term “antimicrobial”. Where a manufacturer claims a product to be “antimicrobial” the product may or may not include effectiveness on viruses dependent on its killing mechanism. When in doubt, check with the manufacturer.

Over the last few decades advances in science technology have made it possible to see matter and life forms down to the level of atoms and molecules. This led to the discovery and study of virus particles. It also launched a new research field called nanotechnology. It was discovered that the electrostatic and covalent bonding of some metallic molecules could be harnessed to create superior antimicrobial products. This gave rise to the manufacture of a myriad of “antimicrobial” products.

In 2007 announcements of coatings based on titanium oxide appeared. These coatings work when visible light energizes the titanium oxide particles, posing an oxidizing lethal barrier to microbes. Original forms required UV light, newer forms are effective with indoor incandescent or fluorescent lighting. It is available in ready to use spray products for application to many surfaces, turning them into round the clock warriors in the fight against the spread of bacterial and viral diseases.

Silver is a natural element and is non toxic to humans in the applications discussed below. Most healthcare professionals have heard about Crypton fabrics. This is one of several applications built on silver ion chemistry. Others include:

- » **Silver ion based disinfectants** which have been recommended by the U. S Centers for Disease Control for use in the battle to control the spread of H1N1 virus (Swine Flu).

- » **Transparent interior coatings** for use on manufactured products such as painted metal and plastic surfaces. They provide easy to clean surfaces that resist penetration of water, oils and stains. Effectiveness is sustained even after repeated washings and is an excellent choice for such things as public transit and healthcare applications.
- » **Silver coated steel**, for use in items like furniture and ventilation systems, can have a significant impact on control of airborne microbes.
- » **Silver based powder coatings** formed by adding silver compounds to resins can be used in the manufacture of many materials such as metal and plastics. These materials are used for such things as the manufacture of food processing equipment, medical and pharmaceutical related items, healthcare furniture, handrails, and endless others.

There are a wide range of options in furniture, wall coverings, floor coverings and window treatment that will provide the built in effectiveness of these technologies; transforming the entire facility into a virtual self-sanitizing germ free environment.

This article is an overview of a wealth of information available on line. Keyword searches: nanotechnology, silver ion coating, titanium oxide coating, polymeric coatings, interior coating, antimicrobial powder coating.