

Specification Sheet

Problem

Ongoing worldwide efforts at controlling environmental contamination with the most recent and dangerous emerging infectious agent (2019-nCov [now officially COVID-19]) are undermined by the use of inadequate disinfection procedures. This is due to widespread dependence on conventional antimicrobial formulations that offer only short term protection of surfaces that become contaminated with corona viruses.

Solution

The OxiScience team developed these unique solutions (US Patent #10,028,482 [2018]) to take full advantage of the superior germ-killing effectiveness of chlorine (Cl) atoms. The technology does this by binding active Cl into biodegradable coatings that endure on disinfected surfaces.

Evidence from previous coronavirus epidemics caused by human-adapted Cov variants (SARS, MERS) shows that infectious viral particles can persist on surfaces exposed to infected patients for up to 9 days.

Current disinfectants, of which the most powerful and popular is aqueous chlorine (Cl) as hypochlorite bleach, are known to be effective at inactivating coronaviruses rapidly, and to a high level in the laboratory. But once applied to targeted surfaces they disappear within minutes by evaporation (e.g., bleach, ethanol, isopropanol) or chemical degradation on exposure to air (e.g., chlorine dioxide). If excreted viruses in droplets land on OxiScience -treated surfaces that continue to display germ-killing amounts of Cl for weeks after a single application there is a high likelihood of virus inactivation to a useful degree in preventing contagion. Treated surfaces are safe to touch and it's easy to apply with traditional equipment and methods.

Scientific data collectively provide a solid basis for incorporating OxiScience persistent disinfectant protection into current infection control efforts not only for 2019 -nCov, but for all the germs, old or emerging, that continue to plague at-risk populations everywhere, both human and animal (e.g., influenza, COVID-19, ASF, norovirus).

The active ingredients in the MACS formulation are safe for prolonged skin contact, and do not cause irritation or sensitization. The major functional active is a registered US EPA biocidal compound. The polymeric agents used to enhance binding to fibers are US FDA-GRAS listed (Generally Regarded As Safe) and are safe enough to be incorporated into many consumer cosmetic and food products. An extensive review of the contact and environmental safety of the MACS active compound class is included in EPA Document-HQ-OPP-2013-0220-0008.

