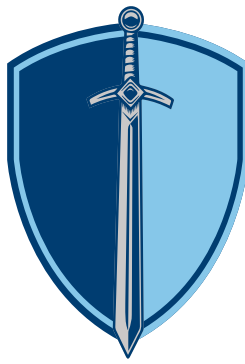




**VIRUS
DEFENDER**
ANTIMICROBIAL PROTECTION



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SAFE TOUCH
SURFACE

Product Description

1.0-mil gloss clear polyester over-laminate with a permanent adhesive. The face film incorporates Sciescent Agion® antimicrobial technology into the top coating to inhibit growth of viruses, bacteria, mildew, and fungi. Depending on the microorganism, Sciescent Agion® technology has been shown to initially reduce microbial population within minutes to hours while maintaining optimal performance for years. It can be washed with mild detergents without losing efficacy. Non-toxic and non-harmful to human skin.

APPLICATIONS

- Menus, counter mats, table place-mats
- Shopping cart handles
- Salad Bar Sneeze Guards
- Labels and stickers
- Elevators
- Overlaminates virtually any printed or unprinted material to provide antimicrobial benefits to any flat high touch surface

INTENDED FOR USE IN

- Ambulances
- Hospitals
- Hotels/Motels
- Cafeterias / Restaurants
- Medical / Dental Offices
- Schools and Colleges
- Health Clubs
- Day Cares / Nurseries
- Nursing Homes
- Retail Businesses

FEATURES AND BENEFITS

- No instances of resistant bacteria
- Interrupts cell metabolism, multiplication, and inhibits membrane transport processes.
- Decreases growth by 99.99%
- Non-volatile controlled mechanism using silver zeolite
- Non-irritating/Non-toxic
- Good UV resistance

TARGETED CONTROL OF:

VIRUSES: Sars coronavirus, human coronavirus 229E, H5N1 avian influenza

BACTERIA*: Bacillus cereus, Bacillus thuringiensis, Mycobacterium tuberculosis, Legionella pneumophila, Escherichia coli, Klebsiella pneumoniae, Salmonella gallinarum, Salmonella typhimurium, P. gingivalis, Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus faecalis, Streptococcus agalactiae, Streptococcus mutans, Pseudomonas aeruginosa, Proteus mirabilis, Proteus vulgaris, Vibrio parahaemolyticus, Saccharomyces cerevisiae, Enterobacter aerogenes, Trycophyton malmsten, Chaetomium globosum, Aureobasidium pullulans, Gliocladium virens.

YEAST AND MOLD*: Stachybotrys, Aspergillus niger, Candida albicans, Penicillium funiculosum

*Specific testing and verification should be performed against a targeted control

The above information is based on research believed to be reliable, but does not constitute a warranty. All material should be tested by the purchaser to determine suitability of the product for their purposes.



Agion Antimicrobial Efficacy Against Coronavirus is Tested and Published

The technology is deployed in the EU, Canada and United States in FDA cleared N95 respirator

February 10, 2020

The novel coronavirus (nCoV) outbreak in China has prompted several inquiries to Sciessent regarding the ability of Agion Antimicrobial to inactivate viruses. This white paper summarizes some university and government research previously completed on the antiviral properties of Agion.

Initial Research

The first half of the 2000's was marked by viral outbreaks that included H5N1 avian influenza, norovirus on cruise ships and the SARS coronavirus. Sciessent (formerly Agion Technologies) engaged with university researchers, industry partners and government organizations to investigate the ability of Agion to inactivate viruses. At the time the Chinese Center for Disease Control was looking for approaches to control the coronavirus and evaluated the Agion powder for efficacy. Around the same time Sciessent began working with Prof. Charles Gerba at the University of Arizona and to evaluate antiviral properties of Agion.

A Note on Terminology

Viruses are not living organisms; they must enter a living cell to multiply. Therefore, antiviral agents are said to "inactivate" viruses, not "kill" them.

Test Results

Chinese CDC (2003)

- Complete inactivation of SARS coronavirus in 2 hours
- *VERO E6 cell substrate, using virus CPE method*

University of Arizona (2004)

- 90% reduction of human coronavirus 229E in 1 hour
- 99% reduction of human coronavirus 229E in 2 hours
- 99.999% reduction of human coronavirus 229E in 24 hours
- *TCID50 technique, monitoring MRC-5 cell monolayers for cytopathic effects*

Chinese Academy of Agricultural Sciences (2006)

- 99% reduction of H5N1 avian influenza in 10 minutes
- *Klein-Defors suspension eradication test*

Published Research

A portion of the above results were published by Professor Gerba and his team in the peer-reviewed scientific journal *Food and Environmental Virology*:

[Assessment of the Antiviral Properties of Zeolites Containing Metal Ions, Food Environ Virol \(2009\) 1:37–41](#)

Abstract

The antiviral properties of zeolite (sodium aluminosilicate) powders amended with metal ions were assessed using human coronavirus 229E, feline infectious peritonitis virus (FIPV), and feline calicivirus F-9. Zeolites containing silver and silver/copper caused significant reductions of coronavirus 229E after 1 h in suspension. The silver/copper combination yielded a $>5.13\text{-log}_{10}$ reduction within 24 h. It was also the most effective ($>3.18\text{-log}_{10}$) against FIPV after 4 h. Other formulations were ineffective against FIPV. On plastic coupons with incorporated silver/copper-zeolites, $>1.7\text{-log}_{10}$ and $>3.8\text{-log}_{10}$ reductions were achieved for coronavirus 229E and feline calicivirus within 24 h, respectively. Silver/copper zeolite reduced titers of all viruses tested, suggesting that it may be effective against related pathogens of interest [i.e., SARS coronavirus, other coronaviruses, human norovirus (calicivirus)]. Of note, it was effective against both enveloped and nonenveloped viruses. Metal-zeolites could therefore possibly be used in applications to reduce virus contamination of fomites and thus the spread of viral diseases.

Note: Springer Nature is making Coronavirus research free, including the above article.

Agion in Polyester Fiber

During this time Sciesent worked with Foss Manufacturing (now Foss Performance Materials) to develop a polyester fiber with Agion embedded into the fiber itself. The fiber, named Fosshield, was incorporated into N95 respirator media as an approach to limit contamination of the respirator by the wearer or those around them. Further antiviral efficacy testing was performed on the respirator media construction.

N95 Respirator Media Test Results

- 99.98% reduction of coronavirus in 4 hours*
- 99.6% reduction of adenovirus in 1 hour*
- 99.999% reduction of haemophilus influenzae in 1 hour*
- 99.8% reduction of feline calicivirus (norovirus surrogate) in 4 hours*

**Results based on testing of samples containing Agion Antimicrobial*