



shieldplus

protective cleaning system

by Panaz™

Antimicrobial cleaning system

Scientifically proven effective
against the coronavirus

Hygienic protection derived from 15 years research, development and sales



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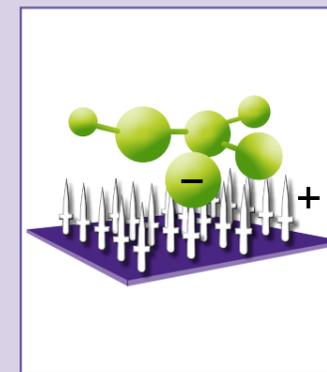
Why is Shieldplus so effective?

Shieldplus is an antimicrobial nanotechnology protection that acts on the physical structure of a bacteria or virus by piercing the cell wall. This non-migrating technology is based upon the application of a permanent, durable coating that attaches to the surface for up to 90 days. The coating attracts, pierces, deactivates and electrocutes the biochemicals within each microbe, bacteria or virus on contact. This includes the coronavirus (certification on page 9).

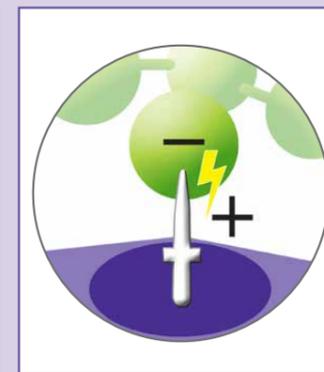
It functions differently to the vast majority of antimicrobials that work by migrating (or leaching) from the surface they are applied to. These conventional leaching types of antimicrobials, such as silver and copper, leave the surface and chemically enter or react with the micro-organism, acting as a poison. These initially

are effective, but they are used up and depleted in the process of working, washing and drying. This depletion may be harmful in encouraging the micro-organism to mutate or become immune to the treatment. Not only do they deplete but they also take time to do their job (up to 4 hours) and they are environmentally harmful.

How it works:



Negatively charged microorganisms are attracted onto the positively charged molecular coating of Shieldplus.



Cell wall is pierced, killing the microbe and preventing growth and proliferation.



Shieldplus provides a safe and optimal antimicrobial protection, even after frequent cleaning.

What is the difference between antimicrobial and antibacterial?

Anti-bacterial products like soap or some cleaning sprays and detergents destroy and prevent the short term development of bacteria. Antimicrobial products, such as hand sanitisers, work on a broader spectrum of bacteria, fungi, parasites and some viruses. Shieldplus by Panaz cleaning systems goes a step further by providing broad spectrum anti-microbial protection on surfaces or fabric for up to 90 days, including against the coronavirus.



shieldplus
by Panaz™
protect

Multi Surface Antimicrobial Protection



Scientifically proven effective against the coronavirus

This water-based technology forms an invisible, protective, layer delivering a unique antimicrobial barrier that kills bacteria and viruses immediately on contact, including the coronavirus, and a light spray offers long-term protection that is effective for up to 90 days.

Shieldplus Protect is safe for use on both fabrics and hard surfaces. With a light application, this spray-on treatment provides a protective layer

by suppressing bacteria, viruses and mould whilst simultaneously enhancing the stain-resistant properties of the surface.

Easy to use:

- 1 Shieldplus Protect is ready to use straight from the bottle.
- 2 Apply to new or freshly cleaned areas.
- 3 Apply directly and evenly distribute with a cloth to the area to be treated.
- 4 Allow to dry thoroughly.



shieldplus
by Panaz™
laundry

Wash In Long Lasting Antimicrobial Protection



Scientifically proven effective against the coronavirus

Shieldplus Laundry brings all the 90 day antibacterial and antiviral benefits of Protect to the washing cycle together with the added benefit of an integral fabric conditioner.

Shield Plus Laundry will add a new level of cleanliness to clothes, towels, sheets, pillowcases and all aspects of your laundry.

Easy to use:

- 1 Shieldplus Laundry is ready to use straight from the bottle.
- 2 Wash clothes as normal ensuring there is a rinse cycle.
- 3 Pour 1 capful per wash load straight into the rinse cycle drawer.
- 4 Allow to dry thoroughly or for optimum results tumble dry.



In the Workspace

As work environments change and become more mobile and collaborative, companies are providing shared spaces to offer a versatile and flexible mode of working. With the increase of shared workstations comes the need to minimize the spread of harmful bacteria.

Recent studies have indicated the following:

- More than 10 million germs are located around the average workstation, including seating.
- 72% of people report going to work despite being sick.
- 80% of infections can be transmitted by touch.
- Workers in open plan offices reported taking 63% more sick days than those in private offices.



In Cruise & Hospitality

Hospitality environments by their very nature are public areas and frequented by many people. Providing hospitality guests with a clean and secure environment can only enhance their experience and wellbeing and bring a sense of comfort to the hotel operations team.

The costs associated with bacterial or virus outbreaks and the reputational damage it causes can be very significant. Any opportunity to minimise this risk by instigating a hygiene protocol along with protective fabrics will reduce damage significantly

In Healthcare

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In Education

Educational facilities now host students from home countries and from a broad array of geographical locations around the world. It is essential that the facilities offered to them while they learn, socialise and sleep create the safest environment possible. The use of Shieldplus on furnishings and upholstery is an effective and durable anti-microbial answer to provide a barrier and reduce infection.



Routes to infection

The routes to infection are many and diverse and it is difficult to quantify the role of the environment in the transfer of infection. Some research reports suggest that 19% of contamination is attributed to the immediate environment, others as much as 40%. The greatest risk for people is contamination in the immediate vicinity or from airborne particulates.

We all know that 'coughs and sneezes spread diseases' but so do contaminated surfaces.

How long the new coronavirus can live on surfaces

Surface	Lifespan
Paper and tissue paper**	3 hours
Copper*	4 hours
Cardboard*	24 hours
Wood**	2 days
Cloth**	2 days
Stainless steel*	2-3 days
Polypropylene plastic*	3 days
Glass**	4 days
Paper money**	4 days
Outside of a surgical mask**	7 days

* At 69.8 F to 73.4 F (21 C to 23 C) and 40% relative humidity.

** At 71 F and 65% relative humidity.

The responsible choice

Extensive testing and verification lie at the foundation of our claims. Certificates demonstrating the speed, the efficacy and the safety of our products are readily available. Including demonstrable effectiveness against the Nora and Coronavirus.

Many antimicrobials are literally toxic. Shieldplus has been tested to ISO 10993-5:2009 Biological evaluation of medical devices Part 5: Tests for in vitro cytotoxicity and proven non-toxic.

Panaz has conducted these tests to provide assurance that the final product is safe to use.

Key features and benefits

Bonded

Resilient to high temperatures and abrasion.

No Migration

Won't leach into the environment or transfer to other articles or to the skin - no "zone of inhibition".

Variety of end uses

Can be applied to varying surfaces.

Active Hygiene

Controls the development of dust mites by destroying some fungi necessary in the dust mite's food chain.

Tried and tested

No arsenic, heavy metals, polychlorinated phenols.

Not a chemical poison

More than 15 years in the market.

Mechanical deactivation

Does not induce microbial mutation or bioaccumulation.

Effective Quality Control

simple analytical and visible test is available to detect the presence of the anti-microbial.

Unmatched safety profile

Not harmful for human and environment, important toxicity data is available.

Odourless and colourless

Effective against Coronavirus ISO 18184:2019 test certification

MSL
Microbiological Solutions Limited

Test Identification Reference: J001354 ISO 18184:2019

ISO 18184:2019 Textiles- Determination of antiviral activity of textile products

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Test Identification Reference: J001354 ISO 18184:2019

Name of Product	Test information	Deviation
093 Satin filament		
009 Untreated control		
Batch Number & Expiry Date	N/S	
Date of Delivery	05/02/2020	
Period of Analysis	23/05/2020-28/05/2020	
Manufacturer / Supplier	Panaz Ltd	
Storage Conditions	Ambient	
Appearance of the Product	White cotton	
Neutralisation Method	Dilution	
Product Diluent	N/A	
Test Concentrations	Neat as supplied	
Test Temperature	25°C ± 1°C	
Temperature of Incubation	37°C ± 1°C	
Identification of the Viral Strains:	Feline corona virus, Strain Munich	
Contact Times	15 minutes	

Test Result Summary

The test fabric showed an overall log reduction of 0.34 (92.80%) when tested against Feline coronavirus with a 15 minute contact time.

The test results on this report refer only to the items tested as supplied by the customer. This report shall not be reproduced except in full and with written approval of Microbiological Solutions Ltd. All reports are archived for a minimum of 2 years. The sample will be retained for 1 month unless otherwise requested in writing.

	Feline coronavirus	COVID-19 (SARS-CoV2)
Realm	Riboviria	Riboviria
Order	Nidovirales	Nidovirales
Family	Coronaviridae	Coronaviridae
Genus	Alphacoronavirus	Betacoronavirus
Species	Alphacoronavirus 1	COVID-19

The members of the family Coronaviridae are enveloped and have a positive sense RNA genome. Coronaviruses have a distinct morphology with an outer 'corona' of embedded envelope spikes. These viruses cause a broad spectrum of animal and human disease.

Andrew M.G. King, Michael J. Adams, Eric B. Carnoy, and Ellen I. Lefkowitz. Virus Taxonomy. Classification and Nomenclature of Viruses, Ninth Report of the International Committee on Taxonomy of Viruses. 2012 ISBN 9780123846684

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Test Identification Reference: J001354 ISO 18184:2019

Scope
This standard outlines the test method for the determination of the antiviral activity of the textile products against specified viruses.

Method
A 20mmx20mm sample of test material is cut (overall mass should be 0.40g and can be made up with extra material if required). 9 control pieces are required and 6 test pieces. 3 pieces of each material are used to test the effect of the fabric on cells without virus (cytotoxicity), 3 control pieces are used to recover the starting titre of virus. The remaining pieces are inoculated with 200µl of virus at a concentration of "10⁷ TCID₅₀" (giving a final concentration of 10⁷) and left for the contact time. Following the contact time, the fabric is recovered in 20ml of cell culture media and enumerated onto an appropriate cell line. TCID₅₀ is calculated following the appropriate incubation time. Antiviral activity is calculated by comparison of the antiviral test material to the immediate recover from the control fabric.

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MSL
SOLUTION PROVIDERS

Statement on the use of a Coronavirus surrogate in Virology testing by MSL

Due to the markets demand to combat the pandemic, manufacturers are being asked to provide proof that their product is effective against SARS-CoV2 or COVID19. MSL is working every day to help towards this goal in any way we can.

Currently the strain of the organism related to the pandemic poses a significant threat to people handling it outside of high-level research laboratories, it is therefore not available commercially for use in public laboratories. In this case like this and other outbreaks before it, the position of the industry is to use a suitable surrogate in its place which would represent the target strain and would therefore have representative results of a products performance.

This has been the case previously in similar situations, like combatting Ebola in Central Africa where Respiratory syncytial virus was used as a surrogate in testing as Ebola was for obvious reasons limited in access. This testing was widely accepted by competent authorities and healthcare services.

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Image 1: Table of comparison between the pandemic strain and the MSL surrogate organism

For Coronavirus claims MSL uses Feline coronavirus for the surrogate organism, there are several reasons for this. 1) It poses no risk to our staff. 2) It shares a strong family design to the outbreak strain with only small differences in RNA. 3) It is currently used in other EN methodologies, so it has been tested in ring trial and was proven to provide reliable and repeatable results.

These points allow us to say that any result on Feline coronavirus would be representative of the results achieved on the pandemic strain if it was tested and that they are repeatable by other labs.

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For further information and to purchase Shieldplus™
Cleaning System products, please consult the
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