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HELLO HEALTH!

ANTIMICROBIAL TREATMENTS - HEALTHGUARD®

BACTERIA, FUNGI AND MOULDS: THE BACKGROUND

Bacteria and fungi are a major component of the unseen world of microorganisms. Sometimes they lend a helping hand, other times they destruct, causing disease.

Moulds are ubiquitous and affect millions of people. They are known triggers of allergies like asthma, eczema, psoriasis, emphysema, glue ear, conjunctivitis and hay fever. Microscopic and invisible to the human eye, microbial growth infests mattresses, lounge suites, pillows, carpets, walls, ceilings and many other substrate.

HEALTHGUARD® PROVIDES THE REAL SOLUTION WITH PREMIUM PROTECTION.

HealthGuard® is a concentrated antimicrobial finish especially formulated for use in the textile industry, to protect a broad spectrum of bacteria, yeast, mould and algae's.

It is the only product which is registered with the APVMA in Australia for antimicrobial activity, meaning that we are the only antimicrobial fabric that can be used in Australia with recognition from the Australian Government.

MAIN FEATURES & BENEFITS

- A safe, non-invasive, bi functional anti-fungal and anti-bacterial treatment which increases product life-span.
- Can be applied with fluorocarbon finishes, flame retardant finishes and all resin systems and softeners normally used in textile finishing.
- A non-irritant with no side effects and does not emit Volatile Organic Compounds (VOC's).
- Does not contain heavy metals like TriButyl Tin Oxide (TBO) or Organo Chlorines.
- It is safe for humans and the environment. When treated articles are disposed or discarded they rapidly biodegrade and leave no harmful residues for our future generations to inherit.
- Eliminates Golden Staph, MRSA A129.
- Hypo-allergenic.
- Anti-allergy.
- All testing of treated articles is carried out externally by Universities and accredited testing institutes for quality assurance credibility purposes.
- Globally recognised and trusted.
- Proudly Australian Made & Owned.

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TEST RESULTS & PROTOCOLS:
Over 25 years-worth of antimicrobial tests from world recognised testing institutes. All testing is undertaken independently.

AATCC 147 is a qualitative test used to detect antimicrobial activity of textile materials, see image 1.

Specimens of the test material, including corresponding untreated controls of the same material, are placed in intimate contact with growth agar which has been previously streaked with test organism.

After incubation, a clear area of interrupted growth underneath and along the sides of the test material indicates antibacterial/fungal activity of the specimen.

AATCC 147 Test Organisms: S. aureus, A. niger ...

Other organisms can also be used depending on the intended end-use.

In a world where general health issues are becoming more and more critical HealthGuard® provides a safe, effective and environmentally sound solution to a wide range of common health problems caused by ineffective bacteriological controls.
HealthGuard® is a revolutionary group of multi-functional products that safely and organically control the levels of bacteria, spores, viruses and moulds.

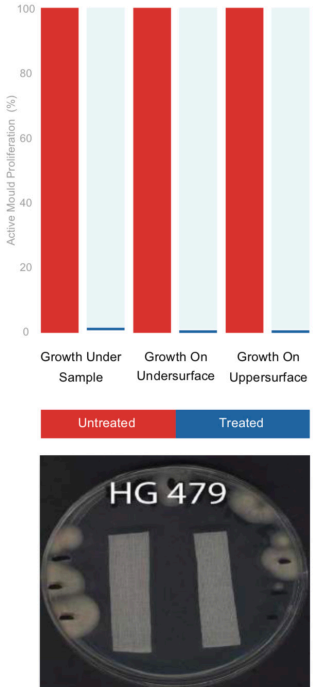

Image 1

Tests have proven that HealthGuard® inhibits a wide range of microorganisms, including:

BACTERIA
- Bacillus subtilis
- Enterobacter aerogenes
- Escherichia coli
- Klebsiella pneumoniae
- Proteus vulgaris
- Pseudomonas aeruginosa
- Pseudomonas fluorescens
- Staphylococcus aureus (including MRSA A129)

YEAST
- Candida albicans
- Saccharomyces cerevisiae

MOULDS
- Aspergillus niger
- Chaetomium globosum
- Penicillium funiculosum
- Ulocladium consortiale

ALGAE
- Chlorella pyrenoldosa
- Anabaena cylindrica

** Microbes mentioned are only representative of various groups of fungi and bacteria and do not form an all-inclusive list.*

Reported by
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TEST SPECIES

Antibacterial Activity of HealthGuard® treated fabrics against E.Coli and Methicillin Resistant Staphylococcus Aureus (MRSA), before & after laundering.

Antibacterial activity of HealthGuard® treated fabrics against E.coli and Methicillin Resistant Staphylococcus Aureus (MRSA) before & after laundering.

RESULTS

HealthGuard® was proven to be very effective against E. Coli and Methicillin Resistant Staphylococcus Aureus (MRSA) showing on average 10mm inhibition zone before washing, 8mm inhibition zone after 10 washes and no inhibition zone + no growth beneath disc after 50 washes.

HealthGuard® was proven to be very effective against E.Coli and Methicillin Resistant Staphylococcus Aureus (MRSA) all samples showed no inhibition zone+no bacterial growth beneath disc before wash and after wash and after 5, 10 and 15 washes and some showed no inhibition zone + no bacterial growth beneath disc after 20 washes.

Test Results:

Antibacterial Activity Assessment – AATCC 147:1998

Sample	Test Bacteria	T (mm)	D (mm)	W (mm)	Contact Area
(A)	Staphylococcus Aureus ATCC No. 6538	28	25	1.5	No Growth
(B)	Staphylococcus Aureus ATCC No. 6538	32	25	3.5	No Growth
(C)	Staphylococcus Aureus ATCC No. 6538	30	25	2.5	No Growth
(D)	Staphylococcus Aureus ATCC No. 6538	30	25	2.5	No Growth
(E)	Staphylococcus Aureus ATCC No. 6538	35	25	5	No Growth
(F)	Staphylococcus Aureus ATCC No. 6538	29	25	2	No Growth
(G)	Staphylococcus Aureus ATCC No. 6538	33	25	4	No Growth

Note
1: W =(T – D) / 2
W = Width of clear zone of inhibition in mm.
T = Total diameter of fabric specimen and clear zone in mm.
D = Diameter of the fabric specimen in mm.
2: Staphylococcus aureus:
Sample (A) ~ (G)
No bacterial colonies in the contact area, Clear zone of inhibition beyond specimen edge.

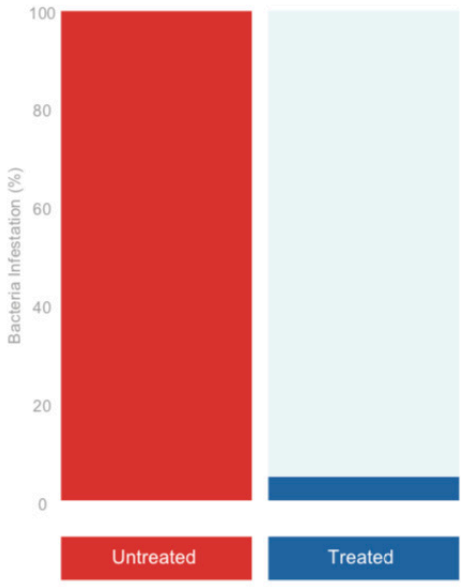

Image 2

** The graph above is a compressed summary of an independent test undertaken at SGS Taiwan Ltd*

ANTIMICROBIAL

Petri dishes were filled with nutrient agar, fresh bacteria cultures – Escherichia coli G 106, Klebsiella 40 pneumoniae G311 ATCC 13883, Staphylococcus aureus MRSA A129 – were then suspended in the agar. See image 2.

The dishes were dried at 37°C for 30 minutes. Samples of treated and 0 untreated fabrics were then placed directly onto the contaminated areas.

This arrangement was incubated at 37°C for 24 hours.

Testing is undertaken at Prince of Wales Hospital Hong Kong, Queensland University Australia and Monash University Australia.

**Image 2 above shows a mean indication of the combined results of many tests.*

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