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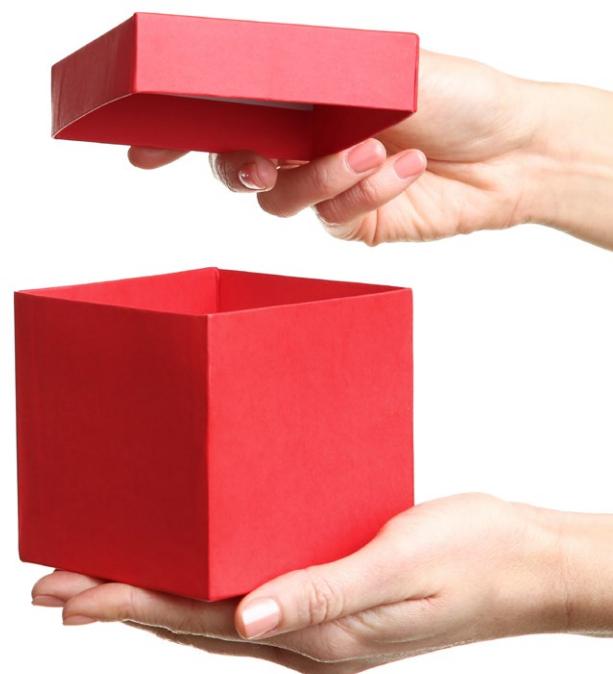
TECHNICAL SERVICES DOCUMENT



ANTIMICROBIAL PROTECTION
BY JAMES CROPPER

TARGET SECTORS

Packaging, Stationery, Publishing,
Healthcare Documents





ANTIMICROBIAL PROTECTION
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SILVER TREATED PAPERS PROVIDE PRODUCT PROTECTION

Micro-organisms are unavoidably present in the air we breathe. Many strains can be airborne and easily transmitted from one person to another. Most are rendered harmless by the protective effects of our immune system - some bacteria are even beneficial. But several species of pathogens can cause serious infectious diseases.

Since 2006, James Cropper has been producing a range of innovative papers incorporating Biomaster® antimicrobial technology from the UK's leading additive specialist, Addmaster.

PaperGard by James Cropper harnesses our expertise and now gives reassurance to customers in a wide range of applications, from premium boxes for luxury brands to greetings cards and envelopes.

Whilst the viability of Coronaviruses is not strong on paper compared to other surfaces, with in-built antimicrobial protection the level of risk of cross-contamination from people's hands is significantly reduced.¹

PaperGard by James Cropper with Biomaster® technology provides an integrated solution that gives protection to the paper surface for the life of the product, of particular importance for products used in sensitive environments or that are subject to cross-contamination from multiple handling.

The use of antimicrobial paper technology is highly effective against pathogens such as MRSA and E-coli, reducing the risk of build-up of harmful organisms 24 hours a day, 7 days a week. Recent testing by an independent laboratory has also shown its viral efficacy against Feline Coronavirus, showing a reduction in viability of 95% within two hours.

APPLICATION SUITABILITY

PaperGard by James Cropper is designed for use in applications where surface protection is a priority and where reducing risk from bacteria or viral contamination may be a consideration, including but not exclusively:

- Shopping bags
- Folding boxes
- Greetings cards
- Envelopes
- Medical stationery
- Folders and leaflets
- Other products subject to multiple handling

PRINT SUITABILITY

Suitable for all major print and converting processes relating to the product application.

What is PaperGard?

PaperGard provides surface protection for paper, it is treated with Biomaster antimicrobial silver ion technology which inhibits the growth of bacteria, Norovirus and Feline Coronavirus. Both paper faces are protected with the inbuilt silver ion treatment.

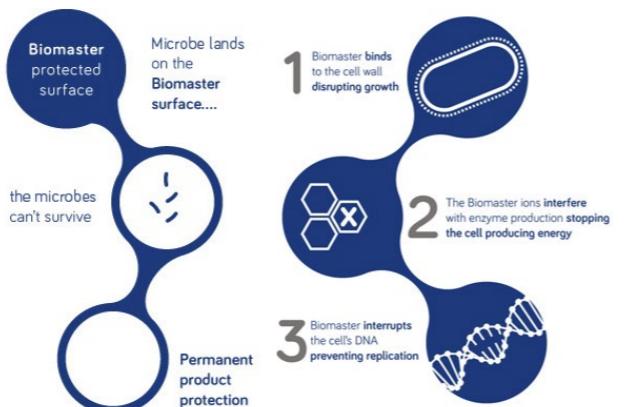
How does Biomaster protection work?

Biomaster technology has been developed to fight harmful micro-organisms. When the micro-organisms come into contact with a Biomaster protected surface, the silver ions prevent them from growing, producing energy or replicating, and therefore they die.

What is the science behind PaperGard?

Unlike antibiotics, micro-organisms are unable to build up a resistance to the way in which silver ions disrupt their growth.

- Silver ions bind to the cell wall of the micro-organism; preventing growth
- Silver ions interrupt enzyme production; stopping the microbe from producing energy
- Silver ions interrupt the cell's DNA; preventing DNA replication and new cell formation
- This process does not allow the micro-organisms to develop any resistance



How effective is Biomaster on paper?

In tests and clinical trials the Biomaster treatment has been proven to reduce the overall level of MRSA and E.Coli bacteria on the paper surface by up to 99.99% using the ISO 20743 testing method to determine antibacterial activity conducted in an independent, internationally recognised laboratory.

The latest testing with Feline Coronavirus, using the ISO 18184 testing method to determine antiviral activity, shows papers containing the PaperGard technology were proven effective at reducing the viability of the viral strain by over 95% in only two hours.

Why test against Feline Coronavirus?

Feline Coronavirus and COVID-19 are members of the Coronaviridae family of viruses which cause a broad spectrum of animal and human disease.

This group of viruses are enveloped and rely on a protective lipid coating and are amongst the easiest types of virus to deactivate.

Biomaster has yet to be tested against COVID-19 on product surfaces and currently there is not yet a suitable method validated for COVID-19, however the result clearly demonstrates the antiviral efficacy of silver ion technology against a member of the Coronaviridae family.

Is silver ion technology safe?

Yes. It is based on technology recognised for centuries with no harmful effects and is used widely in medical, food and water applications.

- Non-toxic
- Phthalates free
- REACH compliant
- EN-71 compliant
- Non-leaching

What can silver treatment protect against?

Independent laboratory tests have proven the technology to inhibit the growth of bacterial and specific viral strains including:

- Feline Coronavirus
- Norovirus
- Staphylococcus aureus (MRSA)
- Salmonella
- Legionella
- Campylobacter
- E.coli
- Vancomycin-resistant Enterococcus (VRE)

How long is the treatment effective for?

The silver ion treatment in Papergard is effective for the life of the product, it is incorporated into the paper during manufacture and it cannot be removed with any amount of wear and tear. It becomes an integral part of the material.



Why did we choose Biomaster technology?

We choose to use Biomaster technology for PaperGard because it offers the assurance of fast, effective, long-lasting and highly active antimicrobial protection. Our Biomaster-treated papers inhibit microbial growth making them hygienic for the life of the product.

What's the difference between antimicrobial and antibacterial?

An antimicrobial inhibits the growth of micro-organisms such as bacteria, specific viruses and moulds. An antibacterial specifically prevents the growth of bacteria.

Does the treatment affect a product in any way?

No. You can't see, smell or even taste it!

What happens if I over-print the product?

Print with minimal surface coverage is absolutely fine.

For complete over-printing or overall coating with a varnish we recommend the addition of the treatment into the print or varnish itself. Together with Biomaster we can provide recommendations and solutions for specific conversion processes. We can also produce varnished papers on-site with the PaperGard treatment.

How do I know my product has protection?

You can rest assured that when you stipulate PaperGard treatment on your product, there is a chain of custody in production to verify the legitimacy of our material.

If required, certification can be organised via an independent laboratory.



Can silver ion technology safeguard against Coronavirus?

Testing against the COVID-19 virus is obviously very difficult due to the infectious nature of this virus (and the associated precautions required for handling). Definitive scientific confirmation of activity against this virus will only be available when the strain has been released by the relevant health authorities, and testing conducted.

We do, however, have data showing activity for PaperGard (>95% inactivation within 2 hours) against another coronavirus. The microbiology firmly suggests that if the silver ion technology is effective against Feline Coronavirus on porous surfaces such as paper (which it is), then the active agent will also be highly effective against COVID-19.

¹ New England Journal of Medicine: telegraph.co.uk/health-fitness/body/does-coronavirus-live-different-surfaces/

ENVIRONMENTAL CREDENTIALS



Controlled
Wood Sources



Fully Recyclable



CONEG
Compliant



Antimicrobial



94/62/CE &
EN71-3 Compliant



REACH
Compliant
(EC No 1272/2008)



Elemental
Chlorine Free



CHP Recycling
Energy

MILL CERTIFICATIONS

ISO 14001 cert. no. EMS 57536

ISO 9001-2000 cert. no. FM 10048

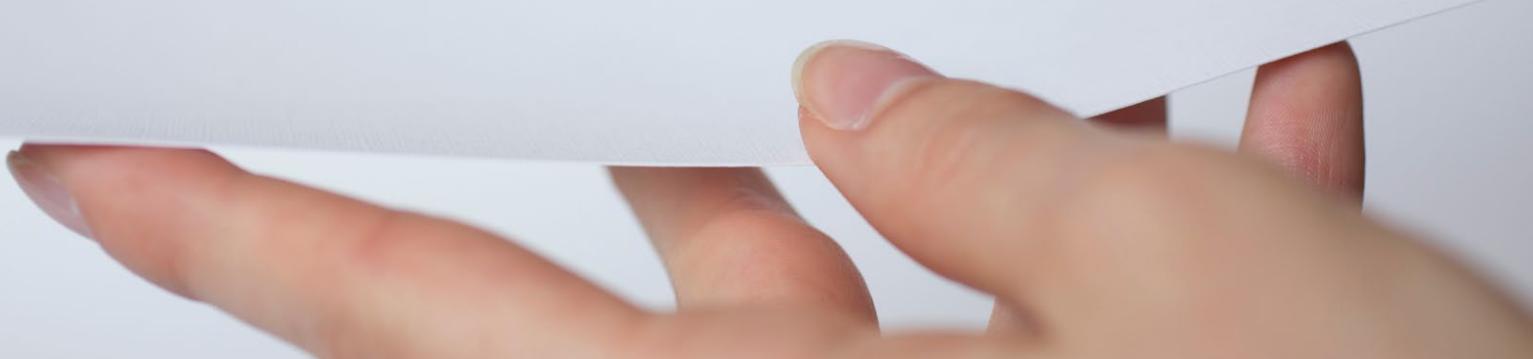
ISO 50001:2011 cert. no. ENMS 623280

OHSAS 18001 cert. no. OHS 93474

FSC® STD-40-004 cert. no. TT-COC002177

PEFC/ 16-44-002 cert. no. BMT-PEFC-0252

Manufactured in Great Britain



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[PAPERGARD](#)