

**JAMES
CROPPER**

EST. 1845



TECHNICAL SERVICES DOCUMENT

PaperGard™

**ANTI-VIRAL | ANTI-BACTERIAL
PRODUCT PROTECTION**

TARGET SECTORS

Packaging, Stationery, Publishing,
Healthcare Documents

MANUFACTURED IN GREAT BRITAIN



REDUCING RISK OF SURFACE TRANSMISSION OF THE COVID-19 VIRUS

PaperGard™ is now proven to be effective at reducing the presence of SARS-CoV-2, the virus that causes Covid-19, on the surface of paper.

The latest test results show that the PaperGard™ protected papers reduced the viability of the viral strain by over 95% in only 15 minutes, and by 99.9% within 2 hours when tested against ISO 18184.

PaperGard™ utilises technology that is built into the paper during manufacture, without affecting its appearance. The latest test results demonstrate that there need not be a compromise of hygiene over beauty in the paper products available to brands.

Respiratory viruses can be transmitted where someone touches a surface that has been contaminated. Recent studies show Coronaviruses can remain viable on metal, glass, wood, textiles, plastic and paper surfaces from several hours to a number of days .

With in-built anti-viral and anti-bacterial product protection, the silver ions present within the paper continually work to control and reduce microbial surface contamination giving added assurance for the lifetime of the product.

Whilst PaperGard™ has been regularly used for the production of medical and healthcare documents since 2006, this technology can be applied across the portfolio of paper products manufactured by James Cropper, including papers and boards for premium packaging or greetings cards that are subject to a lot of handling.

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:

- Folding boxes
- Shopping bags
- 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.

ABOUT PAPERGARD™

PaperGard™ incorporates Biomaster® anti-microbial technology from the UK's leading additive specialist, Addmaster. Biomaster is highly effective against the growth and proliferation of bacteria and enveloped viruses on porous surfaces such as textiles and paper.

How effective is silver ion technology on paper?

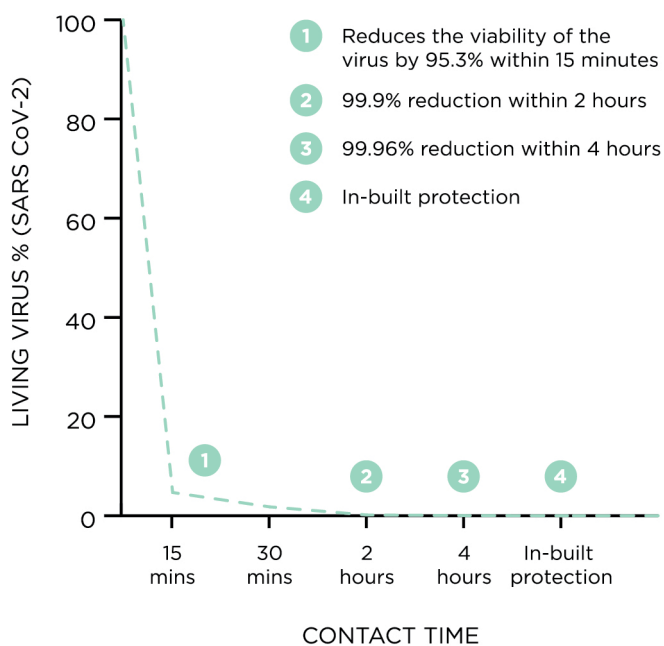
The latest testing with SARS Cov-2 (the COVID-19 virus), using the ISO 18184 testing method to determine anti-viral activity, shows papers containing the PaperGard™ technology were proven effective at reducing the viability of the viral strain by over 95% in just 15 minutes.

In tests and clinical trials PaperGard™ with Biomaster 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 anti-bacterial activity conducted in an independent, internationally recognised laboratory.

Can silver ion technology safeguard against Coronavirus?

We have data showing that PaperGard™ (>95% inactivation within 15 minutes) is highly effective against SARS Cov-2, the virus responsible for Covid-19, on the paper surface.

PaperGard™ anti-microbial technology is effective 24/7 for the lifetime of the treated article. PaperGard™ can therefore complement current hygiene guidance offering additional product protection.



What can silver treatment protect against?

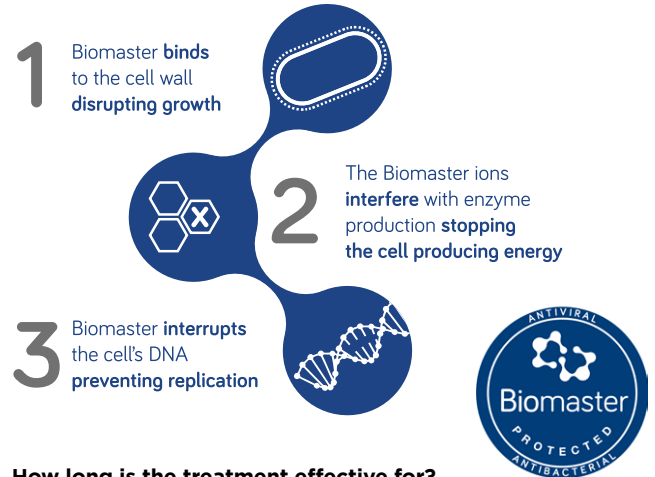
Independent laboratory tests have proven the technology to inhibit the growth of bacteria and viruses including:

- Staphylococcus aureus (MRSA)
- Salmonella
- Legionella
- Campylobacter
- E.coli
- Vancomycin-resistant Enterococcus (VRE)
- Norovirus
- Feline Coronavirus
- SARS Cov-2

What is the science behind PaperGard™ paper?

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

1. Silver ions bind to the cell wall of the micro-organism; preventing growth
2. Silver ions interrupt enzyme production; stopping the micro-organism producing energy
3. Silver ions interrupt the cell's DNA; preventing DNA replication and new cell formation



How long is the treatment effective for?

The silver ion treatment in PaperGard™ is effective for the life of the product, it is built 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.

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.

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.

What is Coronavirus?

According to the World Health Organization, Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV).

The 2019 Novel Coronavirus (COVID-19) is a new strain of coronavirus that was first identified during an investigation into an outbreak in Wuhan, China.