Steri-Guard Coatings® (with Biomaster)

Steri-Guard® (with Biomaster® Antibacterial Protection) treated surfaces inhibit the growth bacteria and mold, preventing odours and making them more hygienic and durable.

When bacteria come into contact with a **Steri-Guard®** protected surface, the silver ions prevent them from growing, producing energy or replicating, therefore they die.

Steri-Guard® is incredibly durable, long lasting and highly active. When added, it is dispersed throughout the entire item and becomes an integral part of the product.

The active agent is Inorganic and non-leaching which means that, unlike organic antimicrobial technologies, it stays within the item to which it is added.
The controlled release of the active ingredient provides maximum antibacterial protection for the lifetime of the product.

Steri-Guard® (with Biomaster® Antibacterial Protection) has been successfully tested on most common organisms in more than 2,000 applications.

Here are the main strains tested and their properties:

Acinetobacter baumannii
Pathogenic bacteria, resistant to most antibiotics. Can cause severe pneumonia and infections of the urinary tract, blood stream and other parts of the body.

Aspergillus niger

causing respiratory diseases and cutaneous and subcutaneous infections.

Candida albicans
Saprophytic yeast found in the nasopharynx and faeces. Causes thrush and skin infections.

Campylobacter
Gram negative, pathogenic bacteria, commonly found in uncooked chicken Causes Campylobacteriosis, resulting in cramps, fever, diarrhoea and occasional death.

Enterococcus faecalis

humans, especially in the nosocomial (hospital) environment.

Enterobacter aerogenes

including most types of infections. It is generally found in the human gastrointestinal tract and does not generally cause disease in healthy individuals.

Extended spectrum beta lactamases (ESBL)
Enzymes which have built up a form of resistance to commonly used antibiotics, such as penicillin. ESBL enzymes are produced by two different forms of bacteria: E. coli (Escherichia coli) plus Klebsiella pneumoniae. The term ESBLs is used to refer to the types of bacteria that create ESBL enzyme.

Escherichia coli
Facultative anaerobic gram-negative bacillus serotype, found in animal intestines and faeces. Strain 0157 H7 is particularly pathogenic, causing gastroenteritis, sometimes fatal. Klebsiella pneumoniae: Aerobic gram-negative bacillus, part of the normal intestinal flora of animals and humans.
Pathogenic, causing hospital and community acquired infections.

Legionella
Gram negative, aerobic, pathogenic bacterium. Infection can lead to Legionellosis (Legionnaires Disease or Legion Fever) which can also lead to pneumonia.

Listeria monocytogenes
Gram positive aerobic non spore-forming bacillus, found in the intestinal tract of humans. Pathogenic if it enters the bloodstream, causing Listeriosis.

Methicillin Resistant Staphylococcus Aureus (MRSA)
Aerobic Gram-positive coccus. Part of the normal flora of the skin, intestinal and genital tracts and mucous membranes of warm-blooded animals. An opportunistic pathogen causing a wide variety of infections. There are currently 27 known pathogenic serotypes of MRSA, each highly contagious and resistant to most antibiotic treatments. Common in hospital acquired infections.

Proteus vulgaris
Aerobic Gram-negative bacillus, part of the normal human intestinal flora. Pathogenic, causing urinary tract and intestinal infections.

Pseudomonas aeruginosa
Aerobic Gram negative bacillus, colonies forming a characteristic blue green pigment with a urine like odour. Ubiquitous in nature. Pathogenic, a major cause of hospital acquired infections.

Salmonella enteritidis
Gram negative bacillus, with over 1000 known pathogenic serotypes, causing entericor typhoid fever in humans. Found in the gut of animals, birds, and human carriers. Infection is passed through poor hygiene.

Salmonella typhimurium
Can cause diarrhoea, which usually does not require antibiotic treatment. However, in people at risk (i.e. infants, small children, the elderly) Salmonella infections can become very serious, leading to complications.

Trychophyton mentagrophytes
Saprophytic fungus causing dermatophytosis, athlete's foot and other chronic skin infections.

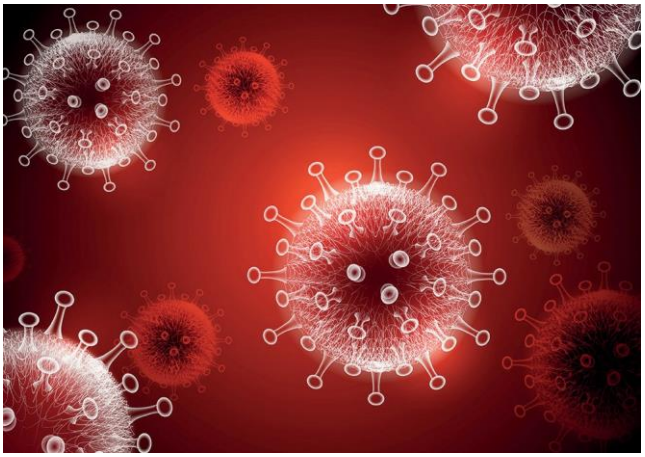
Vancomycin resistant enterococci (VRE)
Bacterial strains of the genus Enterococcus that are resistant to the antibiotic Vancomycin.

Biomaster
SARS-CoV-2 testing update

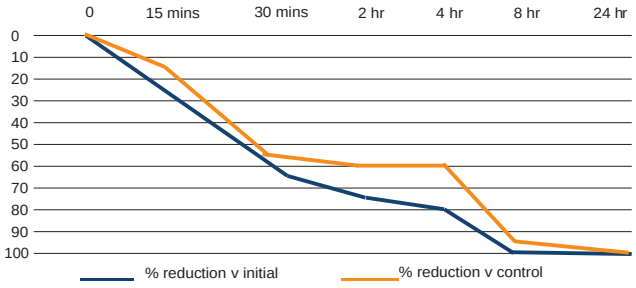
SARS-CoV-2 is a member of the Coronavirus family and the virus that causes Covid-19.

Until very recently, only Government laboratories were licensed to handle the SARS-CoV-2 virus, due to the virility and danger of the strain. However, selected Class 3 laboratories around the world are now able to test products to the viral ISO standard.

Our new test results confirm our expectations as to how different substrates would react. Therefore, depending on whether your surface is porous or non-porous we would suggest the data points for testing as shown in the graphs below.



ISO 21702:2019 SARS-COV-2 FOR NON-POROUS SURFACES



Non-porous substrate with Biomaster showed a 60% reduction of SARS-CoV-2 in 2 hours and >99% in 24 hours.

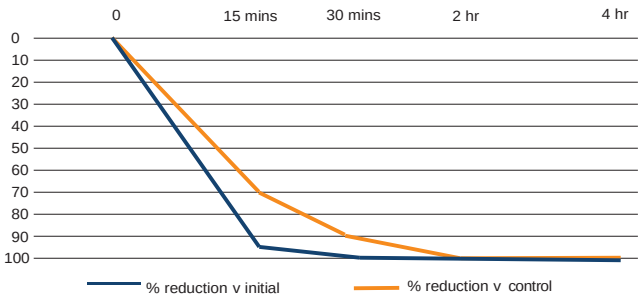
The **non-porous** results indicate times points of 8 hours and 24 hours would be recommended.

It is not a requirement to state less than 24 hours to make a claim and so we suggest 24 hours should always be one time point to make a high percentage ISO 21702 result.

The graphs are also based on ABS which was chosen as one of the most difficult polymers to get activity in, due to its tight crystalline structure and low moisture content, so other flexible polymers may show effectiveness at lower time points such as 2, 4 or 6 hours.

If samples are tested at 6 hours rather than 8, we will also get results sooner as this can be done in one day / shift in the laboratory. Therefore, we would suggest time points of 6 and 24 hours for non-porous substrates.

ISO 18184:2019 SARS-COV-2 FOR POROUS SURFACES



Porous substrate with Biomaster showed a 68% reduction of SARS-CoV-2 in 15 minutes and >99% in 4 hours.

For **porous surfaces** our results indicate that from 15 minutes upwards significant percentage reductions can be seen.

We still recommend a 24 hour test, but as the time points below 6 hours are easy for the laboratory to administer and show excellent efficacy you may want to consider 1 and 2 hours as well.

With this robust set of data we can guide you through the testing protocol to achieve the best results for your product against the actual SARS-CoV-2 viral strain.

As a Biomaster partner you will also get free of charge regulatory and marketing support to ensure any product claims you make are within the biocidal regulatory guidelines.