



Muraspec
WALLCOVERINGS

Biomaster[®]

Antimicrobial Technology

Permanent antimicrobial
protection for your product

Biomaster technology guarantees fast, effective and long lasting antimicrobial protection



Bacteria, both good and bad, are a fact of life and they are all around us.

Most bacteria are rendered harmless by the protective effects of our immune systems and some are beneficial. But several species of pathogenic bacteria, such as Campylobacter, MRSA, E.coli, Legionella, Listeria and Salmonella can cause serious infectious diseases.

Independently tested in thousands of applications, Biomaster is proven to inhibit the growth of these harmful bacteria and many others.

Easily incorporated into any plastic, textile, paper, paint or coating, Biomaster becomes an integral part of the manufacturing process to provide effective and lasting antimicrobial protection for the lifetime of the product.

Antimicrobial products are used in many environments such as hospitals, care homes, schools, gyms and offices – in fact anywhere where large numbers of people gather together and share equipment is a potential application for antimicrobial technology.

Biomaster is also used extensively in meat processing, consumer packaging and in the food service industry to reduce the risk of food poisoning.

Our range of unique formulations can be blended to suit just about any application where it is necessary to reduce microbial contamination from bacteria, moulds or fungi.

If you have an application that could benefit from antimicrobial protection, Biomaster are the industry leaders in providing the technical and marketing support you need to ensure the launch of your product is successful.

Silver is a natural antimicrobial

Biomaster pioneered the modern day use of silver-ion technology and is recognised as the world's leader in this field.

The benefits of silver as a natural antimicrobial, however, have been known since the time of the Pharaohs. Silver has been used for thousands of years to prevent the growth of bacteria without the high toxicity associated with other metals.

In ancient Greece, Hippocrates, often called the Father of Medicine, wrote that silver had both healing and anti-disease properties.



In the Middle Ages, the wealthy would feed their children using a silver spoon to give them protection against disease.

It's believed that this gave rise to the

phrase 'born with a silver spoon in your mouth'.

It was also thought that the use of silver cutlery would provide protection against the plague.

American pioneers travelling west kept their water and milk fresher for longer by putting a silver coin in the storage barrels, and early settlers in Australia placed silver forks or spoons into their water tanks in order to keep the water clean.

Up until the introduction of antibiotics in 1938, colloidal silver was used by physicians as a mainstream antibiotic treatment. More recently, NASA used silver to purify water on the space shuttle.

How does it work?

When bacteria come into contact with a Biomaster protected surface,



the silver ions prevent them from growing, producing energy or replicating, therefore they die

Biomaster Antimicrobial Protection 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.

Silver is inorganic and non-leaching which means that, unlike organic antimicrobial technologies, it stays within the item to which it is added and doesn't leach out. The active ingredient provides maximum antimicrobial protection for the lifetime of the product.



Round the clock antimicrobial protection at work, in the home, at leisure and in industry

Protection in the home

Home is where the heart is; it's also where the germs lurk.

It is impossible to keep every surface clean all of the time but Biomaster inhibits the growth of harmful bacteria around the clock.

It can easily be introduced into almost any item found around the home and is used in everything from kitchen units and household appliances to meat thermometers and wall and floor coatings and coverings.

Protection in healthcare

Healthcare associated infections such as MRSA acquired during hospital stays are the most common complications of hospital care and one of the most serious patient safety concerns.

Biomaster is used extensively in hospitals, dental surgeries, care

homes and GP practices around the world in products ranging from beds to cubicle curtains, nurse call systems to wall and ceiling paints, flooring and door handles to showers, pull cords and even case note folders.

Protection for food and catering

Throughout the food chain, good hygiene practices are essential to prevent the spread of E.coli, Campylobacter, Listeria and Salmonella. Biomaster reduces food contamination from bacteria - and the risk of food poisoning - throughout its preparation, processing, packing and distribution. For example, it will inhibit bacterial growth on the outer packaging of fresh meat products through every stage between farm and fork.

Restaurants also use Biomaster antimicrobial technology in kitchen surfaces, appliances, flooring and wall

paint and even in the coating on their menus.

Protection in the office

Wherever large numbers of people gather together, the chances of exposure to germs and the risk of cross-infection increase. Some office germ hot-spots carry more harmful bacteria than the average toilet seat.

Biomaster is easily added to any frequently handled item in the workplace, giving complete and ongoing protection against harmful bacteria.

Protection in education

Even if a nursery or a classroom starts out clean, germs can build up throughout the day. Harmful bacteria collect on frequently touched surfaces, especially in areas where there is a lot of hand-to-mouth contact, such as the school dinner table.

Biomaster antimicrobial protection can easily be added into commonly shared objects such as calculators, pencils, erasers, rulers and other classroom supplies that could otherwise transfer infection.

Protection in manufacturing

Controlling contamination is an essential and fundamental part of any manufacturing process.

Biomaster antimicrobial technology is used in thousands of clean rooms, critical areas and controlled industrial environments, finding application in diverse industries from biomedical, pharmaceutical, electronic and optical to automotive, aerospace and packaging.

Major companies using Biomaster technology to control contamination in their manufacturing processes include Sony, Johnson & Johnson, Motorola, Roche, IBM, Pfizer, Rolls-Royce, Nestle, Intel, Nokia, Honda, BMW and Heinz.



Versatile and long-lasting protection for plastics, textiles, paper and coatings

Awareness of the need to improve hygiene levels is increasing and demand for antimicrobial products is growing.

Extending your range with a product offering the benefits of built-in and lasting antimicrobial protection can

help you open up new markets and increase your market share.

Biomaster Antimicrobial Technology is easily incorporated into any plastic, textile, paper, paint or coating, making it an integral part of the finished

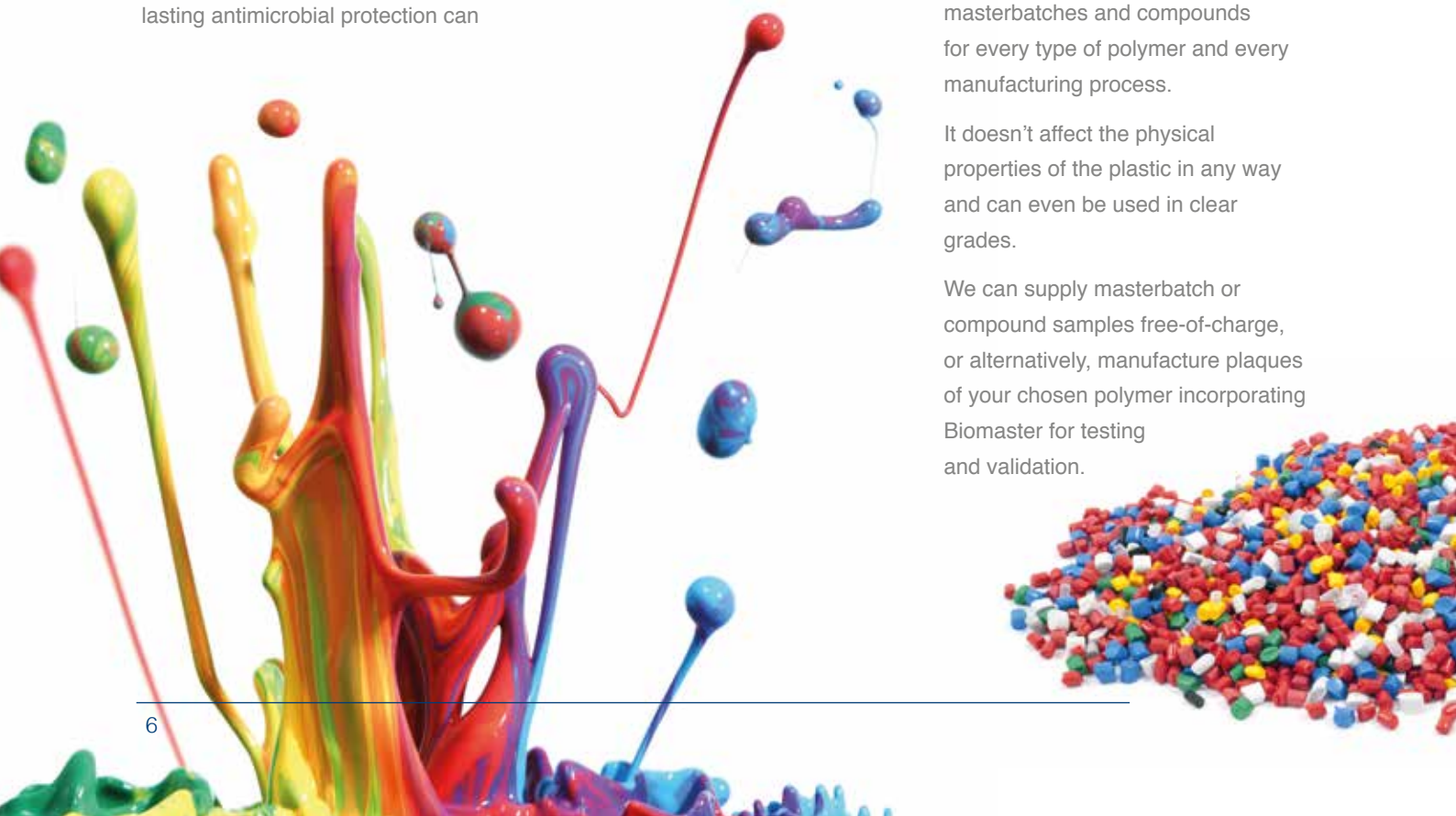
product and a compelling benefit that will add real value and differentiate your brand.

Protection for polymers

Biomaster has developed masterbatches and compounds for every type of polymer and every manufacturing process.

It doesn't affect the physical properties of the plastic in any way and can even be used in clear grades.

We can supply masterbatch or compound samples free-of-charge, or alternatively, manufacture plaques of your chosen polymer incorporating Biomaster for testing and validation.



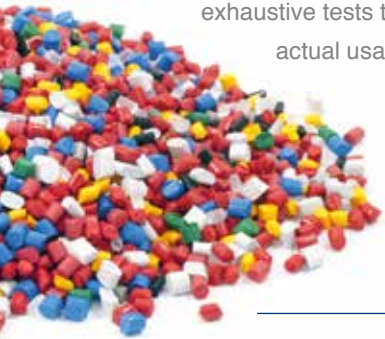
Protection for textiles

Biomaster can be added to any textile or fabric at any stage of production without affecting the characteristics of the material. It provides durable and effective protection against both harmful and odour-causing bacteria.

Treated items don't have to be washed as often and can be washed at a lower temperature, thereby saving water and energy, causing less damage to the fabric and increasing durability, whilst retaining the antimicrobial benefit associated with much hotter wash cycles.

To confirm efficacy prior to production we conduct

exhaustive tests that simulate the actual usage of the article.



Protection for paper and board

By its very nature, paper is inherently difficult to clean, which makes it a perfect breeding ground for bacteria and a known source of cross contamination.

The Biomaster paper grade additive is unique and can be applied either during manufacture or in post-treatment to provide effective, lasting antimicrobial protection, reducing the risk of cross contamination and preventing bacterial build-up in storage.

Protection for coatings

Biomaster is also easily added to any water, solvent, oil or powder based paint, coating, ink or lacquer to inhibit the



growth of micro-organisms such as bacteria, yeast and mould, making them more hygienic, durable and ideal for use in both hygiene critical and high traffic environments.



Tested and compliant

We know Biomaster is highly effective at reducing bacteria levels but it is essential you are just as confident that your finished product is effective.

That's why our antimicrobial testing to the latest ISO standards is completely independent and conducted only at leading microbiology laboratories.

The Biomaster regulatory service will ensure your product complies with all the relevant legislation for biocidal products including:

- Biocidal Products Regulation (BPR)
- Environmental Protection Agency (EPA)
- Food and Drug Administration (FDA)

We also work closely with our customers to ensure they comply with the required regulations regarding the manufacture, importing and marketing of products incorporating Biomaster.

Discover the power of antimicrobial branding with our free marketing support service

Regular cleaning regimes are all well and good, but it's impossible to keep every surface clean all of the time. Any public contact point is only as clean as the last person to touch it.

If your product is handled frequently or is used in a high-traffic environment, you can do the right thing for your customers by giving it an inbuilt first line of defence against bacterial cross-contamination.

Adding Biomaster can also increase the value of your product by at least 20% and grow your product range for relatively little extra cost.

As your strategic partner, we'll help you take your product to market, quickly and effectively.

Our expert marketing support service is available to all customers free of licence fees.

We'll give you all the support needed to ensure the launch and on-going

promotion of your antimicrobial product is both easy and successful.

We have extensive experience of introducing antimicrobial products around the world. We understand what is important to your customers and how to communicate the benefits of antimicrobial protection.

Customers using the Biomaster Antimicrobial symbol in their marketing materials can rest assured that all of their claims are valid and regulatory requirements are fulfilled.

Whether you are looking for a product line extension, increased pricing leverage or market share growth, co-branding with the trusted Biomaster Protected symbol in your marketing strategy will give your product the clear competitive advantage that only the recognised leader in antimicrobial technology can offer.

We are investing heavily to raise the awareness and benefits of the Biomaster brand and demand for antimicrobial protected products is growing.

To find out more about how we can help grow your business, call us today.



Our expertise in antimicrobial technology

Biomaster pioneered the development of permanent antimicrobial protection into new substrates such as plastics, coatings, textiles and paint and continues to create innovative technologies that provide long-term defence against harmful bacteria.

We have developed a range of unique formulations blended specifically for each end application to provide maximum performance and durability.

Rather than giving you an off-the-shelf solution, our antimicrobial additives are bespoke.

We'll discuss the requirements of your product, taking into account such factors as performance criteria, how and where it will be manufactured and sold, before formulating a solution.

Excellence is achieved by the enforcement of strict standards and meticulous quality control, supported by the specialist skills of our experts in the fields of microbiology, chemistry and polymer science.

Our knowledge of antimicrobial additives and of the regulatory support required is unrivalled within the industry.

We can develop an antimicrobial solution for your product, including testing and marketing collateral, in as little as four weeks.



Trusted globally by major brands



Biomaster antimicrobial additives are exported globally and our growth has been recognised by the Queens Award for Enterprise in International Trade.

We are the only antimicrobial additive supplier to be honoured in this way.

Biomaster is the acknowledged leader in antimicrobial technology and the trusted partner of global brands.

Our worldwide network of distributors are chosen specifically for their knowledge of antimicrobial additives and local regulations.

No matter where you are located, the experts in antimicrobial technology are there to help.



Biomaster® is a registered trademark of:

Addmaster (UK) Ltd
Darfin House
Priestly Court
Staffordshire Technology Park
Stafford ST18 0AR
United Kingdom

T: +44 (0)1785 225656

F: +44 (0)1785 225353

E: info@addmaster.co.uk

W: addmaster.co.uk



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