

Victrex Joins Forces with Addmaster to Offer a New Line of Antibacterial Plastics

Victrex has joined forces with Addmaster, a leader in the supply of silver-based biocides, to produce a line of antibacterial polymers designed to control the growth of bacteria and fungi on plastic surfaces. The new VICTREX[®] PEEK[™] polymer-based VEG027 products use Addmaster's patented Biomaster silver-based antimicrobial concentrate. The inorganic nature, small particle size and high temperature tolerance of the additive makes it ideal for use in a wide range of medical and food-handling applications.

Silver as a Biocide

The Biomaster biocides are based on silver-containing inorganic materials. These typically contain up to 10 times more silver than other silver biocides, and consequently can be used at very low concentrations. Silver, which has been used for thousands of years as an antibacterial agent, becomes "active" in the presence of moisture. Bacteria can only exist in the presence of moisture. As all "normal" environments contain moisture, the silver ions diffuse into the moisture layer and become active against any bacteria present.

Key Features

In addition to offering exceptional antimicrobial protection, the new VEG027 products have one of the best overall property profiles of any high performance material on the market today. The unique combination of properties includes exceptional mechanical performance at high temperatures, superior wear characteristics and outstanding chemical and steam resistance. This means that components made with VEG027 products can last longer than other materials in the most demanding environments.

• Temperature Performance

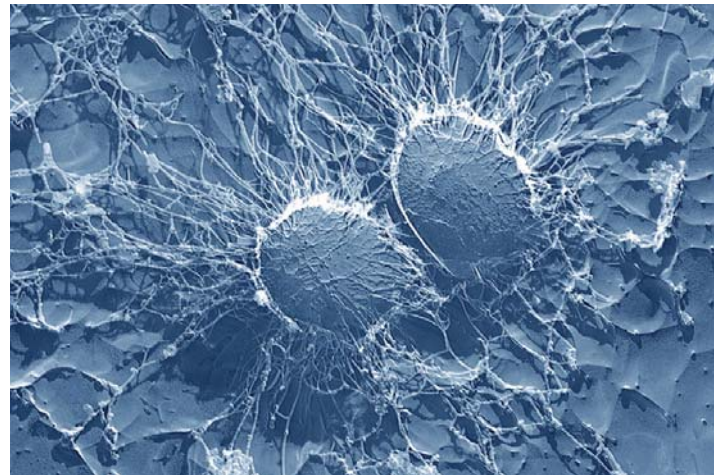
Outstanding property performance across a broad range of temperatures from -195°C (-319°F) to 300°C (572°F).

• Chemical and Steam Resistance

Insoluble in all common solvents. Excellent resistance to a wide range of chemicals.

• Wear Resistance Without Lubrication

Excellent wear resistance coupled with a low coefficient of friction. Non-galling nature allows the polymer to be used in aggressive wear applications.



staphylococcus aureus

Antimicrobial Performance

Biomaster additives provide exceptional antimicrobial performance in a wide range of polymeric systems. Products incorporating Biomaster at very low addition levels actively inhibit bacterial growth and typically show 99.9% reduction within 24 hours. The controlled release of the silver ions provides maximum long term activity. The antimicrobial concentrate has been successfully tested against over 50 common organisms including MRSA, E.coli, Salmonella, Listeria, Pseudomonas and Aspergillus Niger.

Additive Benefits

- Anti-wash (does not wash out)
- Effective against bacteria, fungi, yeast and algae
- Heat stable
- Highly active
- Long term durability
- Silver ion released on demand

Typical Applications

- Hospital equipment
- Healthcare furnishings
- Synthetic textiles for bed linen
- Soap and tissue dispensers
- Toilet seats
- Electronic handsets
- Hospital laundry sacks
- Water filter housings
- Surgical aprons and gloves
- Door handles
- Medical packaging

Why Incorporate Antimicrobial Additives?

Protection of Patients in Hospitals

Over recent years there has been an increasing concern over Hospital Acquired Infections (HAIs). These infections are caused by a wide range of bacteria. There is a particular concern about the number of cases of Methicillin-Resistant Staphylococcus Aureus (MRSA). This is a strain of Staphylococcus Aureus that has built up resistance to Methicillin — the strongest type of Penicillin available. It has also been shown that bacteria such as MRSA can survive up to 38 weeks or even longer on contaminated surfaces.

Food and Hygiene

Bacteria are very easily spread from surface to surface by hand-contact and other methods. This is particularly relevant to food-preparation areas where a large number of potentially lethal bacteria can be present such as E.coli. Antimicrobials are also used to combat the growth of fungi, yeasts and molds.

Regulatory

Biomaster registrations:

- BgVV (BfR)
- BPD
- EPA
- FDA
- Class 1 Medical Devices

VICTREX® PEEK VEG027 Products (Provisional Data)

Property	Test Method	Test Condition	Units	Result
Melt Flow Index	ISO 1133	400°C/2.16Kg	g/10min	3
Tensile Modulus	ISO 527	23°C	GPa	3.7
Tensile Strength	ISO 527	23°C	MPa	100
Tensile Elongation	ISO 527	23°C	%	30
Notched Izod Impact Strength	ISO 180	23°C	kJ/m ²	7.0
Flexural Modulus	ISO 178	23°C	GPa	4.1
Flexural Strength	ISO 178	23°C	MPa	160
Specific Gravity	ISO 1183			1.3

The data below shows the change in population following contact with the surface of the samples listed for 24 hours at 35°C under a RH of >95%

Method	Species	Reduction (Initial) %
JIS Z 2801:2000	E coli	99.89
JIS Z 2801:2000	MRSA	≥99.95



Victrex plc is the leading manufacturer of high performance materials, including VICTREX® PEEK™ polymer, VICOTE® Coatings and APTIV™ film. These materials are used in a variety of markets and offer an exceptional combination of properties to help processors and end users reach new levels of cost savings, quality, and performance.

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Addmaster is Europe's leading supplier of new additive technology for the plastics, paint, paper, textiles and coatings industries.

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