

BY ANTONIA R. BELL



The Feel-Good Factor

IN RECENT YEARS there have been major advancements in fabric innovations and high-tech textiles. One particular branch of this development has been wellbeing. Classed as health, beauty or added comfort aspects that add value to clothing – rather than active or performance wear capabilities such as moisture management - wellbeing features are wide and varying. Some of these are the application

of fragrances or skin softeners to textiles, as well as insect repellents and antimicrobials. Other potential applications include dyes, vitamins, phase change materials, and in specific medical applications, antibiotics, hormones and drugs.

With so many added benefits to today's apparel, picking out clothing is no longer purely about aesthetics.

Agion Technologies (Antimicrobial and Anti-Odor)

Using nature's antimicrobial, silver, Agion's antimicrobial technology provides built-in protection that resists the growth of microbes. The technology operates at the surface of a product through the controlled release of silver ions which attack microbes and inhibit their growth.

Agion's antimicrobial technology incorporates silver ions in a zeolite carrier. The silver ions exchange with other positive ions from the moisture in the environment, implementing a release of silver "on demand". This mechanism delivers only when needed for long lasting effects.

The zeolite crystal carrier is multi-faceted and provides a three dimensional release mechanism that provides the release of silver ions independent of particle orientation in the substrate. Furthermore, the zeolite crystals are randomly oriented and distributed through the surface of a fiber, polymer or coating.

In conditions that support bacterial growth, positive ions in ambient moisture exchange with silver ions at reversible bonding sites on the zeolite. The exchanged silver ions can then control microbial growth.



ment handles microbial based odors and ambient, absorbed odors. It is available in a fabric finish, and can also be easily incorporated during the finishing step in the manufacturing process. In addition, Agion has patented a solution to keep white fabrics white during manufacture, with no discoloration. The treatment is compatible with most fabrics, does not impact drape or hand, and can be used in conjunction with other finishes.

Agion Active regenerates its effectiveness with each wash and dry cycle, and is designed to last the useful life of the product.

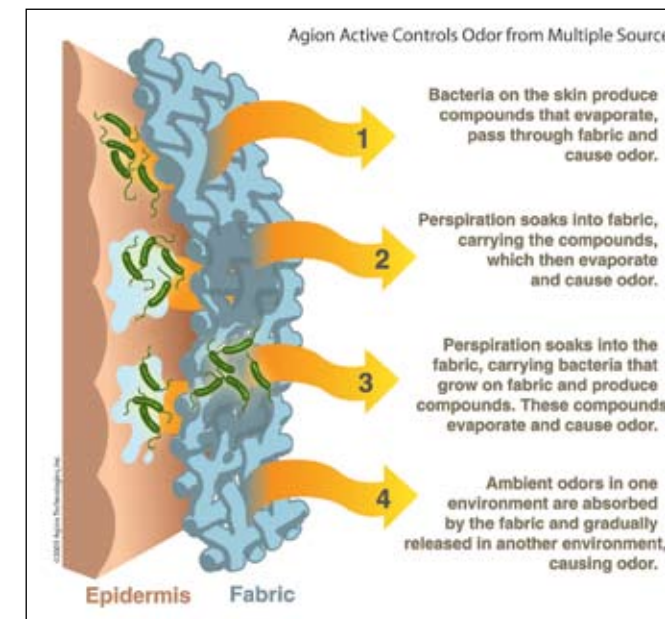
Get Info: Ariane@matternow.com

Insect Shield (Insect Repellent)

With one of its original intentions being to help protect children from insect-borne diseases, Insect Shield offers a durable, effective and convenient solution to insect repellent to help battle insects and, thus, insect-carried diseases such as West Nile virus, malaria and Lyme disease.

Insect Shield Repellent Apparel is the first U.S. Environmental Protection Agency- (EPA) registered insect-repellent clothing. Both Insect Shield apparel and gear products combine the Insect Shield process with a proprietary formulation of the insect repellent, permethrin. This results in effective, odorless insect protection that lasts the expected lifetime of a garment.

Permethrin is a man-made version of a natural insect repellent that is found in certain chrysanthemum plants. The Insect Shield process binds a

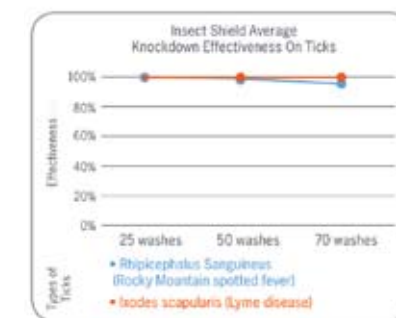
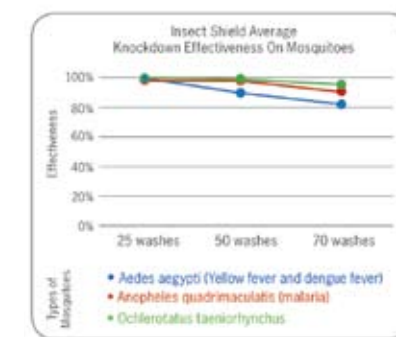


Silver ions attack unwanted microbes in three ways, preventing the growth of a destructive population. They prevent respiration by inhibiting transport functions in the cell wall, inhibit cell division (reproduction), and disrupt cell metabolism.

According to Agion Technologies, depending on the microorganism, Agion's antimicrobial technology has been shown to initially reduce microbial population within minutes to hours, while maintaining optimal performance for years.

Agion's silver antimicrobial is Cradle to Cradle Silver Certified, giving a third party testament to the environmentally friendly nature of Agion. Additionally, Agion Technologies offer a variety of silver-based technologies to suit various manufacturing and product requirements.

There is also Agion Active, a technology developed to provide intense (industrial strength) defense against odor. The textile treat-



proprietary permethrin formula tightly to fabric fibers. Permethrin has been used in the United States as a U.S. EPA-registered product since 1977, with an excellent safety record, in products such as lice shampoos for children and flea dips for dogs.

Insect Shield Repellent Apparel is registered as repelling mosquitoes, ticks, ants, flies, chiggers, and midges, while Insect Shield Repellent Gear is registered to repel mosquitoes, ticks, fleas, and flies. Testing has been carried out on many species and varieties of these insects, including those that can carry dangerous diseases.

The technology puts just enough protection where it is needed, repelling bugs with only a small amount of long-lasting active ingredient. Compared to spraying, fogging, or topical insect repellents that can readily come off while bathing or wading through a body of water, Insect Shield products can help reduce overall pesticide and repellent use. In addition, the Insect Shield process utilizes a proprietary system designed for no loss of active ingredient into the environment.

Insect Shield products are long lasting. In fact, the EPA granted Insect Shield extended durability claims for its apparel registration, through 70 washings. Similar to the dye in colorfast clothing, the Insect Shield active ingredient is designed to stay in the garment. For Insect Shield gear, repellency remains effective through 6 months of exposure to weathering, or through 25 launderings for washable items. Additionally, Insect Shield-treated products have a long shelf life, with garments



Insect Shield Women's Merch

Insect Shield Men's Merch

stored for ten years showing no loss of repellent effectiveness.

Insect Shield protection is invisible, odorless and colorless, and does not change the feel of the garment. Products can be washed normally in a home laundering, and repellent apparel can be bleached, starched or pressed without effect on the repellent quality. However, products should not be dry-cleaned, as this removes some of the active ingredient, thereby reducing the insect repellent efficacy of the apparel.

Get Info: janinerobertson@insectshield.com

Nano-Tex's Resists Static (Anti-Static)

Resists Static is a technology best suited for synthetic fabrics such as polyester, nylon, fleece, or other static-prone fabrics such as satin. Each fiber in a fabric is fundamentally transformed through nanotechnology, resulting in a fabric that eliminates static shock and static cling. In addition, dust, lint and pet hair are not attracted to fabrics treated with Resists Static.

Surface resistivity influences the accumulation of electrostatic charge of a fabric. Resists Static uses positively and negatively charged atoms to reduce surface resistivity of the fabric.

Fabrics treated with Resists Static technology retain their natural hand and feel, and can "breathe" naturally. The technology is also durable, exceeding 30 home launderings.

Get Info: stenzel.tom@nano-tex.com

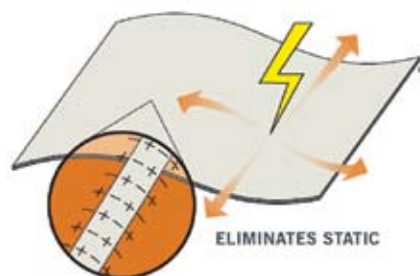
Nano-Tex's Neutralizer (Anti-Odor)

Neutralizer technology eliminates odor on and through a fabric so the wearer can stay fresh throughout the day.

Nano-Tex's approach does not kill bacteria like antimicrobials, does not mask odors like perfumes and fragrances, and does not rely on non-specific odor absorption like carbon. Rather, Neutralizer technology envelopes odor to neutralize smell, and then discharges the odor in home laundering.

Specialized molecular structures intercept odor molecules caused from perspiration. They clutch these odor molecules to prevent offending scents from being released into the air, and create a filter that captures body odor traveling through the fabric.

The odor molecules are then released in the wash, thus regenerating the odor-eliminating capacity back to its original state. It



works exclusively on body odor, attracting, isolating, and neutralizing these odors immediately.

Through nanotechnology, each fiber is transformed and the nanoscale "odor pockets" are permanently attached to the fabric's fibers, providing long lasting durability.

Nano-Tex says their Neutralizer is a "green" choice as it does not use harsh chemicals to kill bacteria, nor release silver particles into the environment.

The technology is durable beyond 30 home launderings, recharges easily in the wash, contains moisture management properties, and maintains its performance over time. Additionally, Neutralizer allows fabrics to breathe naturally and retain their natural softness.

Get Info: stenzel.tom@nano-tex.com

Devan Chemicals' eSCENTial (Fragrance and Skincare)

Through micro-encapsulation, Devan Chemicals offers a range of product options, from fragrances to skincare, for textile application.

Micro-encapsulation is a process in which microscopic droplets or particles are wrapped with a protective polymeric coating or melamine shell. Basically, micro-encapsulation provides a tiny container that protects its contents from evaporation, oxidation and contamination until release is triggered.

Microcapsules can be applied by padding, exhaustion, spray, printing, and even during the rinse cycle of a washing machine. For most applications the capsule diameter would be in the range of 3-8



microns – invisible to the naked eye.

The eSCENTial Collections comprise 6 different fragrance categories. Smell is the strongest of the five senses and the company states that "once [a smell is] identified, we may be excited, soothed, relaxed, comforted, refreshed, revitalized, or even alarmed. Using the sense of smell by building a fragrance into a textile or garment can stimulate a powerful and emotive sense."

The eSCENTial Designed Collections have been developed by professional perfume creators and include the Aromatherapy Collection,

the Freshness Collection, the Pure Nature Collection, the Fruity Collection, the for Him Collection, and the for Her Collection.

The company suggests that one way that brands can make their products harder to copy is by including fragrances in them. In this way, brands can also develop a personal fragrance to increase their recognition and reinforce their concept through the marketplace. They state that "because fragrances are working actively on our emotions, they can be designed to be a decisive factor purchase and increase the buying trigger at the consumer level."

Adding skin benefits to a textile is also possible by applying encapsulated moisturizers, vitamins, or Aloe Vera for example. The use of encapsulated cosmetic oils is especially recommended to add skin benefits to hosiery, nightwear and sportswear.

The Aloe Vera that Devan uses for textile micro-encapsulation is from recognized high quality sources approved by the International Aloe Science Council in Texas. The company says that Aloe Vera has a moisturizing effect, regenerates and promotes suppleness of the



skin, protects, soothes and cares for the skin, and has a beneficial effect on blood circulation.

Bladderwrack (a brown algae) is another option. Rich in nutrients that are all said to work towards improving the tone and look of the skin, bladderwrack also contains a number of minerals such as magnesium, potassium, calcium, iron and iodine. According to Devan, iodine is said to stimulate the thyroid gland to produce thyroxin which in turn regulates cellular vitalization, toxins and cholesterol elimination, and fat settling in the body. Other claimed benefits of bladderwrack are activating the metabolism, aiding in the development of suppleness of the skin, and improving blood flow.

Vitamin E – known for its antioxidant capabilities – can also be micro-encapsulated. Antioxidants protect vital cell structures by neutralizing molecules called free radicals. Free radical damage can occur throughout the body's several systems. Antioxidants like Vitamin E work to neutralize free radicals and stabilize cell membranes by providing the electrons needed to complete the unstable cell.

Get Info: Alain.Langerock@devan.net