Resistex® Silver is obtained by covering a nylon continuous filament with a layer of 99.9% pure silver. The silver yarn obtained thanks to this procedure is then used combined with traditional textile fibres such as cotton, polyester and nylon.

FEATURES

Silver has been used for centuries to prevent and treat a wide variety of diseases, above all of infectious type . It has been widely documented that silver coins were used in ancient Greece and Rome to disinfect stored water and many other liquids. Still today NASA uses silver to keep water pure on the space shuttle. Silver has extremely powerful antibacterial properties: just one part per 100 million of elemental silver is required in a solution to obtain an effective antibacterial action. In fact, free silver ions are known to be active antibacterial agents.

In order to obtain a bactericidal effect, silver ions must be available on the bacteria surface; in contact with it, silver kills micro-organisms instantly by blocking the respiratory enzyme system (energy production), and altering microbe DNA and the cell wall, without any toxic effects on human cells in vivo.

In addition to its recognised antibacterial properties, silver has the power to facilitate healing of indolent (slow healing) wounds and to regenerate damaged tissue.

Reports of decreased rubor in wounds in contact with silver also offer evidence of the anti-inflammatory properties of this precious element.

Biological properties

Some of the biological properties found in the local use of silver are:
- antibacterial activity
- antifungal activity
- stimulation of dermal regeneration
- antipruritic activity

The product

Resistex® Silver is a special yarn that bases its distinctive properties on the many beneficial and healing powers of silver. Created through years of research and studies conducted in the Tecnofilati research laboratories, **Resistex® Silver** is an exclusive and innovative yarn based on 99.9% pure silver. Tecnofilati collaborated with prestigious Universities and Research Centres to create this special fibre, obtaining a product that combines textile requirements with the beneficial properties of silver.

Resistex® Silver is obtained by joining a layer of 99.9% pure silver, approximately 0.5 micron thick (about 20%), to a textile backing using a particular and complex production process. The silver treated in this way is bonded irreversibly to the textile surface, and then combined through further processes with natural fibres such as cotton, or with synthetic fibres such as nylon or polypropylene microfibres.

Six times exclusive, thanks to its silver heart, **Resistex® Silver** is::

ANTIMICROBIAL It is able to fight bacteria (standard JIS L 1902: 2002) such as Staphylococcus aureus and Klebsiella Pneumonite.

ANTISTATIC - DISSIPATIVE This special extremely conductive fibre can disperse electric charges produced or stored by the environment (EN 1149-1/2/3).

NATURAL It is 100% natural, non-toxic and does not contain chemicals.

THERMOREGULATORY Thanks to its extraordinary features relating to electrical conductivity, it is able to disperse excessive heat. It is warm in winter and cool in summer.

PROTECTIVE It shields the body from the absorption of static energy, electromagnetic fields and UVA rays.

DURABLE Its special structure provides long-lasting effectiveness, even after many washes.

The ideal temperature

Cold

Remedies against the cold must solve problems of radiation, evaporation and convection. **Resistex® Silver** solves these problems using the following principles: Reflective power. The reflection factor of the infrared rays (IR) of silver is over 95%. This value is higher than any other element, meaning that 95% of the radiant energy that comes into contact with silver is reflected back towards its source. Consequently, **Resistex® Silver** reduces heat dispersal to a minimum by reflecting the skin's own energy back towards it: winter garments containing **Resistex® Silver** fibre are much warmer than those containing normal fibres.

Radiant power. Silver has one of the lowest radiance rates of all the elements: this means that it has a very low thermal energy radiation speed. Silver remains warm at length (unlike other elements, which only retain heat for a very short period of time). Winter clothing made of **Resistex® Silver** ensures that any heat not reflected back to the body is absorbed and stored in the fibre at length, and therefore products containing **Resistex® Silver** keep the wearer warm much longer than products with systems containing passive fibres.

Moisture transfer. **Resistex® Silver** promotes the natural transfer of moisture through water-repellent materials with the same process used by the body through evaporation. When **Resistex® Silver** is placed in a damp environment together with another water-repellent material, its conductive properties accelerate the evaporation of moisture. As moisture is transferred through evaporation, an even greater amount of moisture can be directed towards the water-repellent yarn and made to evaporate. Consequently, garments made of **Resistex® Silver** disperse body moisture more rapidly, increasing comfort and reducing potential heat loss through convection.

Heat

As the temperature increases, radiation becomes less important among the primary causes of heat transfer: solutions to combat excessive heat must solve problems of conduction, evaporation and convection. **Resistex® Silver** solves those of conduction and evaporation (problems regarding convection are solved through special structuring of the fabric), using the following principles:

Thermal conductivity. Of all the elements present in the world, silver has the highest thermal conduction rate. This means that **Resistex® Silver** works actively to distribute heat rapidly and evenly throughout the product, and to allow its subsequent transfer. In summer, when conduction is the main heat transfer agent, **Resistex® Silver** promotes the body's natural action, accelerating the conduction of heat emitted by the skin (whereas a conventional fabric merely offers a barrier against heat conduction). So, just as a silver spoon in a cup of hot tea, **Resistex® Silver** conducts heat from the skin to the surrounding air, allowing the body to cool.

Moisture transfer. As described above, **Resistex® Silver** accelerates the transfer of moisture through evaporation. Consequently, clothing made of **Resistex® Silver** increases body comfort in warm weather by minimizing moisture in contact with the skin.

USES

The most effective among both natural and non-natural antimicrobial agents. It is used in medicine, in those sectors that need extremely effective products to fight infections and in the production of filtering equipment or equipment for antistatic and electromagnetic protection. Its electrical conductivity is second only to gold.

Today, Resistex® Silver is used :

- in the industrial sector (ESD/EOS protective clothing for clean rooms, gloves, filters, work clothes, shielding fabrics);
- in medicine (hospital gowns, bandages, pyjamas, bed sheets);
- for bedclothes (mattresses, bed sheets, towels);
- or clothing (socks, gloves, underwear, pyjamas);
- for sportswear.