

Natural Zinc fibers: Gentle care for the skin

The largest organ in the human body is the skin. Its many tasks include sensory perception, but also protection from cold and heat as well as forming the boundary between the body and the environment.

smartcel™ sensitive fibers contains the essential trace element zinc. Wearing textiles blends made with **smartcel™ sensitive** can promote healthier skin and also will control odor causing bacteria due to the antibacterial properties of zinc.

Zinc: an ubiquitous mineral with vital importance for the skin

Zinc is a real elixir of life. It has a decisive influence on our well-being like few other nutrients. It is present everywhere in the body and is of critical importance for the core functions of the body. It strengthens the immune system (the body's defences) but also sensory functions and fertility.

The decisive role of zinc in nutrition is well-known: As an essential component of over 100 enzymes, it contributes to the digestion and utilisation of fats, proteins and carbohydrates and is closely involved in energy production. Oysters, for example, offer an elegant extra portion of zinc. They contain ten times more of this „body fuel“ than other foods. As an important component of other nutritional supplements, zinc prevents symptoms of deficiency in the long term.

However, zinc also has a vital function for the skin. It helps to defend against infection in the long term and to heal inflammation and wounds. Zinc-containing creams and cosmetic care products which are applied to the skin often promote healing. This is where **smartcel™ sensitive** fibers take effect. Textiles containing these novel zinc fibers allow natural, soft and pure skin care with an additional antibacterial, odor-reducing effect – which can be used in all textiles.

The antibacterial and protective effects of zinc incorporated in a natural fiber:

smartcel™ sensitive – is the antibacterial, protective fiber the textile industry has been waiting for!

smartcel™ sensitive is a completely natural fiber and can be used for all types of textiles including wool. The patented fiber production method completely dispenses of chemicals which would otherwise be necessary to make the effect of the zinc on the skin possible. The incorporated snow-white zinc oxide allows textiles to be dyed in all colours, including white!

The incorporation of zinc elements in the **smartcel™ sensitive** fiber also means that the build-up of odor and bacteria is kept decisively at bay. The antibacterial effect of zinc is based on the „oligodynamic effect“, which describes a disruption in the bacterial metabolism. The cell membrane is altered and the exchange of substances with the environment is made more difficult.

smartcel™ sensitive: Effective with all textile blends, including wool

The antibacterial effect is triggered when the skin gives off moisture (sweat), and an active exchange is produced between the fibers and the skin.

smartcel™ sensitive is also washfast, effective over a long period and meets international standards on purity.

The advantages of smartcel™ sensitive-fibers at a glance:

- The first antibacterial natural fiber with the essential trace element zinc
- Protects and cares for the skin
- No nanotechnology, no aggressive chemicals
- Even works with wool blends!
- Washes very well and can be dyed in all colours, including white
- Patented technology, effective in the long term (functional permanence)

- Constant release of zinc onto the skin

Zinc oxide properties

smartcel™ sensitive contains pharma grade 4 zinc white – a pharmaceutically pure zinc oxide produced from metallic zinc. It meets DAB 10 purity requirements and other international regulations for the preparation of pharmaceuticals. It is used in pharmaceuticals, cosmetics, dental chemistry and nutritional supplements, among others.

Certificates

smartcel™ sensitive is certified by Eco-Text® standard 100, product class 1 (for baby products).

The University Clinic of Jena for Dermatology and Dermatological Allergology, certified antubacterial efficacy according to JIS L 1902:2002, listed in test report no.: 42/2009 „... the highly antibacterial effect...“ of **smartcel™ sensitive** fibers. You can download the certificates from our Support section.

technical data:

Yarn count: 2,5-6,7 dtex

Tear resistance: 2,5 dtex 26-28 cN/tex (dry) und 21-24 cN/tex (wet),
6,7 dtex 18-21 cN/tex (dry) und 15-17 cN/tex (wet),

Cut length: 38-120 mm (adjustable)

Dyeability: Can be dyed in all tones (the fibers' matting effect should be taken into account)

Colour: ecru

Odourless

Tests:

Blends with cotton and wool: Overall antibacterial activity to JIS L 1902: 2002 **effective**, efficacy of the cotton/wool mix fabric proven up to 80 washes (60 °C household laundry).

Blends with cotton: Test for skin irritation and delayed-type hypersensitivity (LLNA) DIN EN ISO 10993-10:2007: **passed**

University of Jena cytotoxicity test: **passed**