



Functionality

smartcel[™] technology creates a «micro heat accumulator» with an extraordinary potential.

smartcel[™] clima fiber is a **PCM (Phase Change Material) micro composite of the latest manufacturing generation with thermo regulating features**. It's an essential technological and functional improvement in comparison to the classic phase change materials. Via direct spinning paraffin is embedded in highly crystalline and tear-resistant smartcel[™] functional fibers during this patent pending process. Thus unequaled many micro composite accumulators per unit of cellulose can be processed, to the effect that with comparable textile features greater heat accumulator capacity can be achieved.

Textiles manufactured on the basis of smartcel[™] clima can absorb excessive body heat and if required, dispense it. Thus **temperature regulation** is assured, providing **extraordinary wearing comfort** and an excellent micro climate.

smartcel[™] clima provides **high heat absorption (up to 60 joules per gram of fiber)**. Depending on the choice of paraffin, the temperature of heat absorption or heat dissipation can be adjusted according to the application. Thus stable temperatures can be achieved within a specific time period.

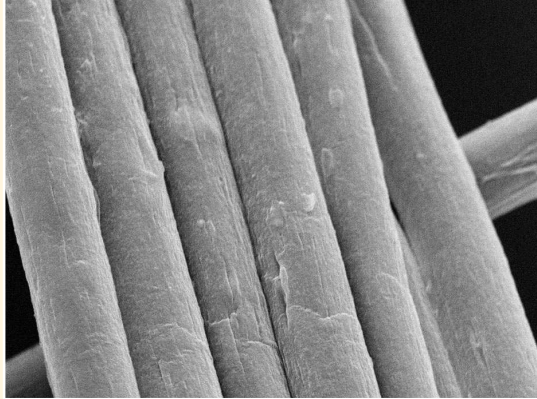
Additional features

smartcel[™] clima provides **excellent textile manufacturing** and **consistent colorability**. Even with high filling grades the surface of the fiber remains smooth, with a classic finish and processability. This provides fiber fineness and makes the fiber insensitive to mechanical and chemical forces. All of this provides **functional permanence** and allows washing of fibers and textiles.

Range of application

In all places where **comfort** and **regulating one's climate** is desired.

- Sleep comfort: Mattresses, blankets, pillows, bed linen
- Protection against heat or cold in a human body (e.g. sports clothing)



electron microscope image



electron microscope image (transmitted light)

Fiber composition (mass percentage) in air-conditioned state

Material	Quantity
Cellulose	> 47%
Active component paraffin	> 33%
Minerals	ca. 7%
Silicon processing agent	< 2%
Humidity	< 12%

Textile-physical fiber characteristics

Characteristics	Measuring unit	Data*
Yarn count	dtex	3,73
Tear resistance	cN	6,50
Tear resistance-V	%	13,80
Elongation	%	14,60
Initial module	cN/tex	310,00
Tear resistance (based on yarn count)	cN/tex	17,50

* Data changes with yarn count of fiber

- Yarn count 1,3 - 6,7 dtex
- Cutting length 38-60 mm
- Colorability colorable in all tones
- Phase change temperature at heat absorption 28-35° C