

# Cell Solution® CLIMA

PATENTED GERMAN FIBRE TECHNOLOGY 



## Botanic Fiber

Cell Solution® Clima fibers are natural cellulosic manmade fibers. The main raw material is wood pulp from non-endangered trees, and the additive paraffin is refined plant oil.

## Functionality

Cell Solution® Clima technology creates a “micro heat accumulator”, which acts as an extraordinary temperature buffer between warm and cool.

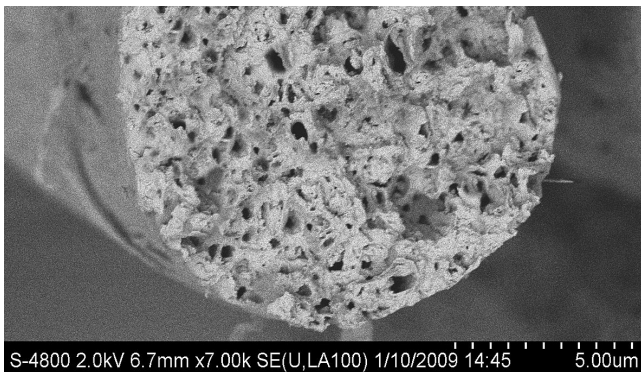
## PCM

Cell Solution® Clima fiber is a PCM (Phase Change Material) micro composite of the latest fiber manufacturing generation with advanced thermo regulating features when compared to the classic phase change materials. Via a patented spinning process, paraffin is embedded in crystalline and tear resistant functional lyocell fibers. Thus producing unequaled many micro composite accumulators per unit of cellulosic fiber, using which the textile imparts enhanced comforting features.

## Temperature Control

PCM Textiles manufactured with Cell Solution® Clima adjust to the skin's comfort temperature. It can absorb excessive body heat, and when the temperature drops, dispense it again. Thus temperature regulation is assured, providing extraordinary wearing comfort and excellent microclimate.

Cell Solution® Clima fibers provide high energy absorption (more than 92 Joules per gram of fiber for 6,7 dtex and more than 50 Joules for 2,3 dtex fibers). Thus stable temperatures can be achieved within a specific time period.



## Moisture Control

The structure of the cellulosic fiber results in an optimal bodyclimate because of the fiber's excellent moisture absorbing properties. Synthetic fibers do not absorb any moisture.

## Additional features

Cell Solution® Clima fibers can be easily processed in to textiles and have consistent dyeability when following the recommended processing/finishing method.

Even though the fiber is heavily loaded with PCM, the fiber surface remains smooth. Thus making it insensitive to mechanical and chemical forces. All of this provides functional performance and allows washing of fibers and textiles.

Cell Solution® Clima fibers can be used in nonwoven applications or spun into yarns.

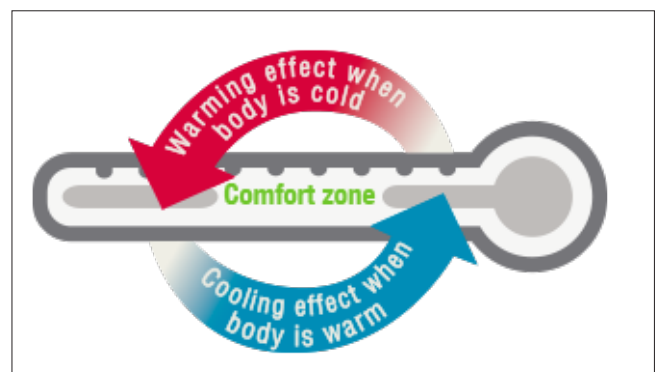
## Range of application

In all areas where comfort and regulation of one's climate is desired:

- Mattresses
- Quilts
- Pillows
- Blankets
- Bedlinen

Garments where the “temperature buffer” enhances comfort and performance:

- Army
- Police
- Sportswear
- Workwear
- Formal suiting
- Casual suiting
- Socks
- Gloves



## Cell Solution® CLIMA 2,3 dtex.

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### Data sheet

Cellulose fibre with thermoregulating properties produced according to the Lyocell - process

#### Fibre composition in conditioned state (given in % by weight):

Cellulose		>56 %
Stabilized paraffin (defined melting point)		app. 29 %
Organically modified mineral (layered silicate)		4 - 5 %
Finisher content		<0,5 %
Moisture		<10 %
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Titre	dtex	2,3 ± 10%
Tenacity, conditioned	cN/tex	>19
Tenacity, wet	cN/tex	>17
Elongation, conditioned	%	12 - 16
Elongation, wet	%	14 - 17
Loop tenacity	cN/tex	5 - 7
Wet modulus	cN/tex	≥100
Whiteness		17 - 30
Melting point (peak)		30°C/85°F
Thermal decomposition		>175°C/350°F
Ignition point		>200°C/390°F

Due to the large amount of n-paraffin in the fiber, longer exposure of the product in dry state to temperatures above 100°C/210°F has to be avoided or will result in vaporizing of paraffin.

#### Storage capacity in accordance with DIN 51007 (DSC) : >50 Joule/Gram.

