



Contact

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Introducing the Functional Lyocell Cell Solution® Fiber Family

TITK-Group



smart
polymer



27 Mar 2021 © Stepmap, 123map • Daten: OpenStreetMap, Lizenz ODbL 1.0



TITK-Group



TITK e.V.
→ Applied Research

www.titk.de

Native Polymers and
Chemical Research

Textile and Materials
Research

Plastics Research

Functional Polymer
Systems

OMPG
→ Accredited
Testing Laboratory

www.ompg.de

Textiles

Composites

Synthetic Materials

smartpolymer
→ Production and
Sales

www.smartpolymer.de

Functionalized Lyocell
Fibers

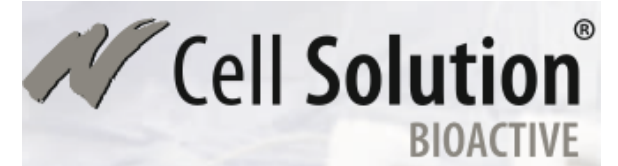
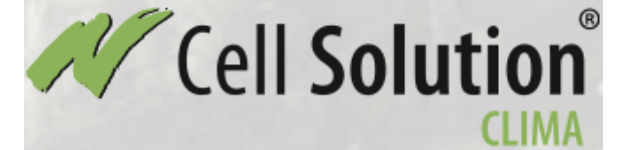
Flocked Parts
(Applicators)

Latent Heat Storage


Bio-Based and
Biodegradable Adhesives

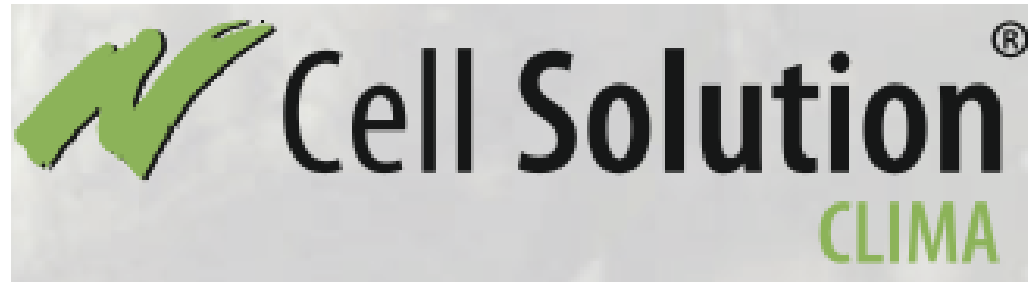
Sensors

Bristles





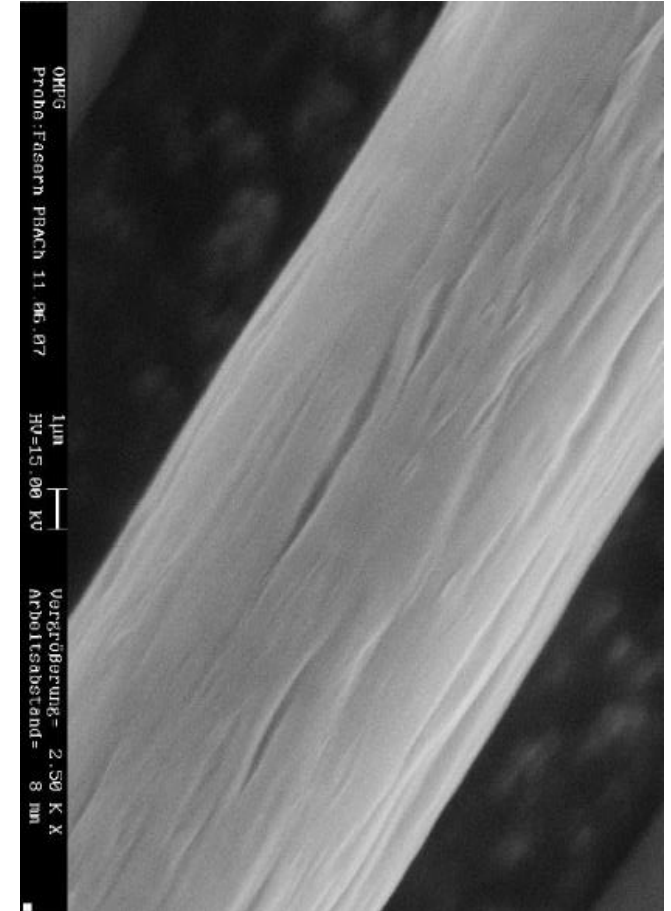
 **Cell Solution**[®]
CLIMA

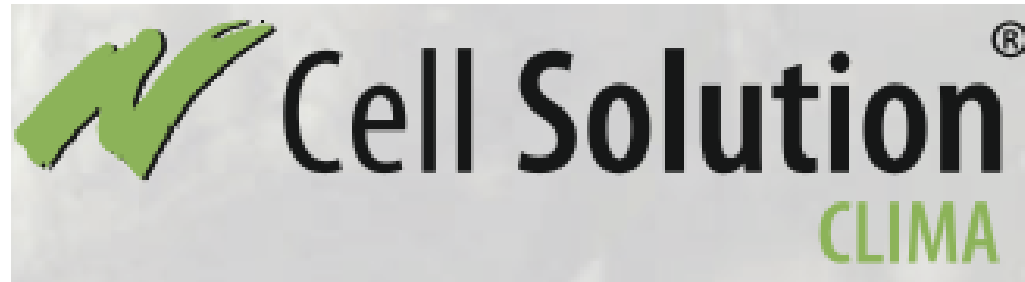


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- ✓ Lyocell staple fiber
- ✓ Excellent moisture management
- ✓ Smooth lyocell like surface
- ✓ Good textile processability
- ✓ Sustainable and biodegradable
- ✓ Oeko-Tex® STANDARD 100

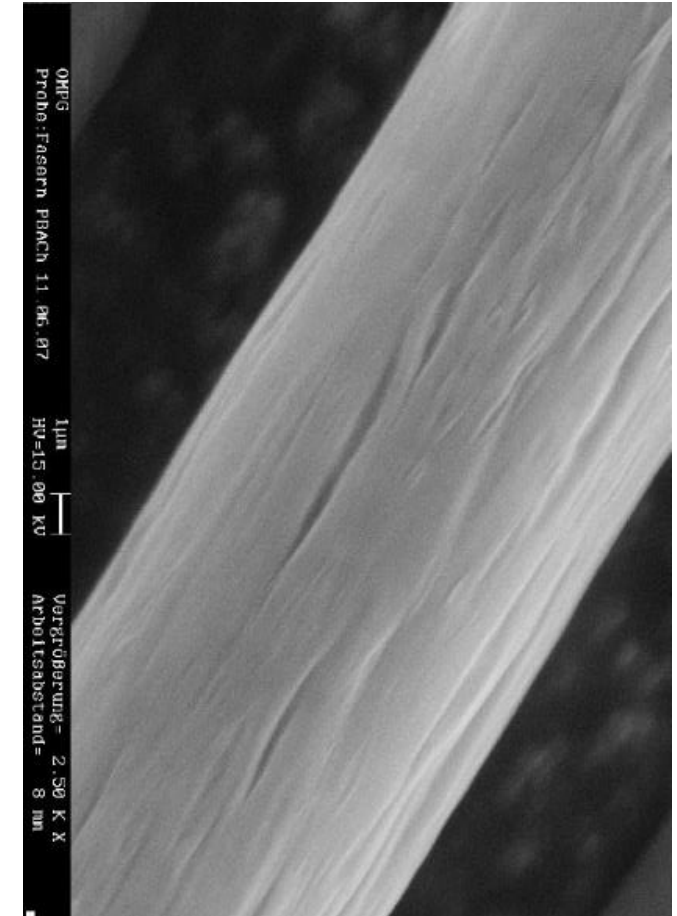


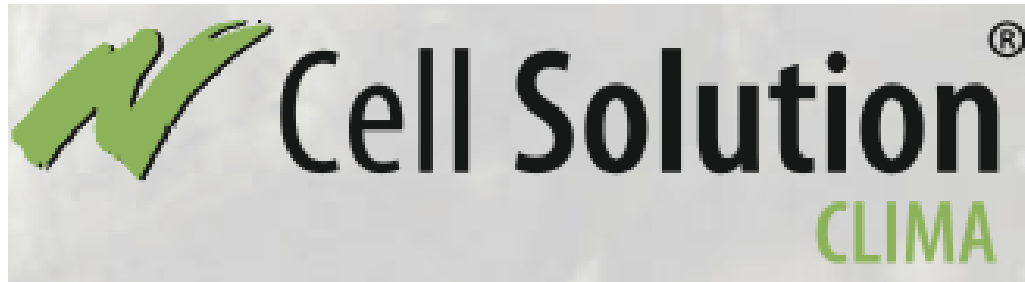


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- ✓ PCM – heat storage and release – function embedded during fiber spinning.
- ✓ Chemical bond between cellulose and paraffin.
- ✓ No micro capsules.
- ✓ Permanent lifelong functionality.
- ✓ Full textile processability.





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- ✓ Best of class → heat storage capacity:
 - ✓ 6.7 dtex 60mm: > 90 Joules / gram fiber,
 - ✓ 2.3 dtex 38mm: > 50 Joules / gram fiber.
- ✓ Best of class → price / heat storage capacity.

- ✓ 30% fiber content recommended to be arbitrarily blended.
- ✓ Cooling (storing) and warming (releasing) can be felt by contact → “USP at POS”.
- ✓ Continuous cooling or warming through product design.

- ✓ Temperature peaks are capped.
- ✓ Temperature hot spots are smoothed out.
- ✓ The average temperature is affected by 2°C.
- ✓ Perspiration is greatly reduced.

- ✓ Product development support.
- ✓ Testing and certification of product performance.



Contact

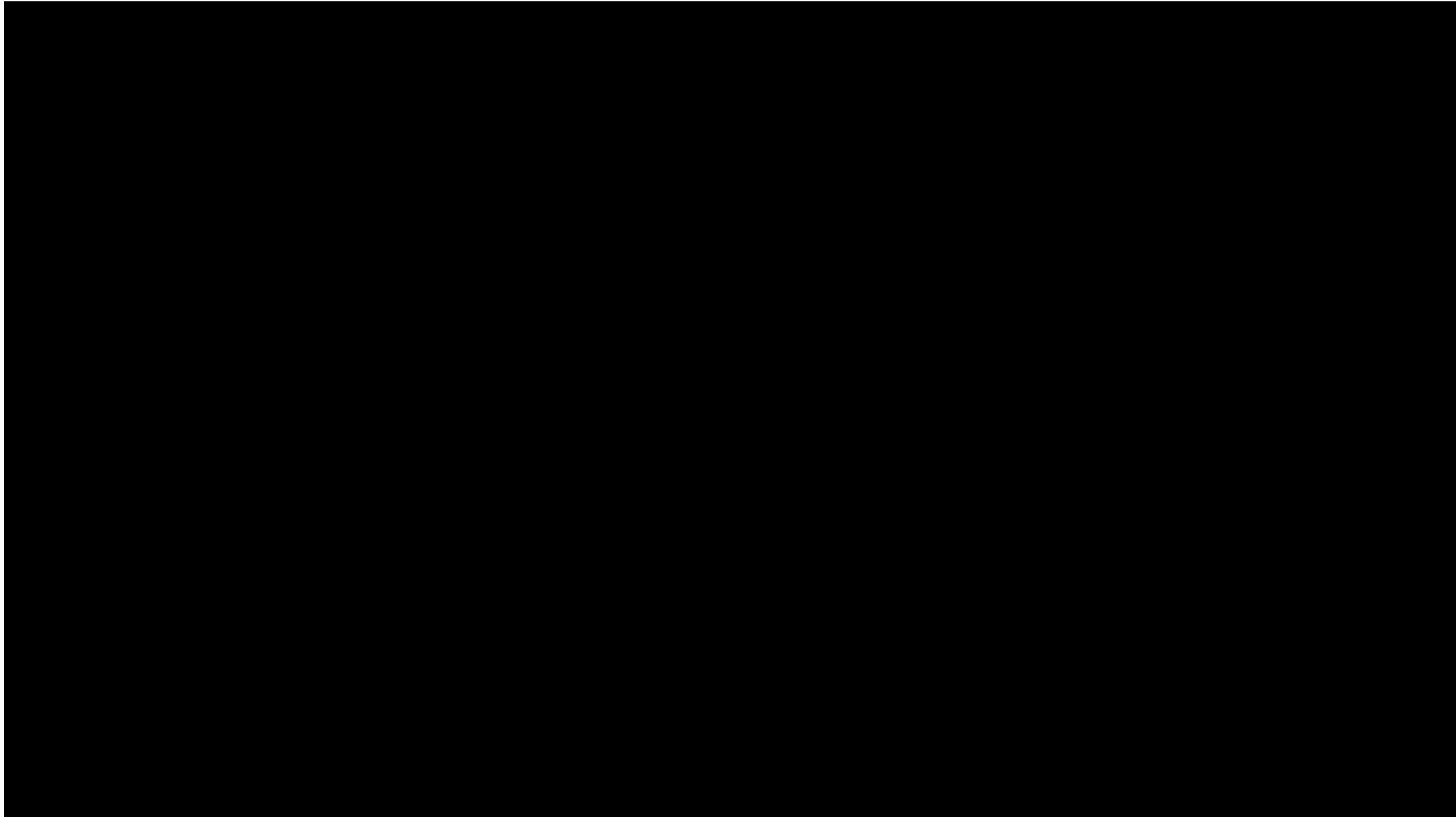
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 **Cell Solution**[®]
SKIN CARE



- ✓ Lyocell staple fiber
- ✓ Excellent moisture management
- ✓ Smooth lyocell like surface
- ✓ Good textile processability
- ✓ Sustainable and biodegradable
- ✓ Oeko-Tex® STANDARD 100

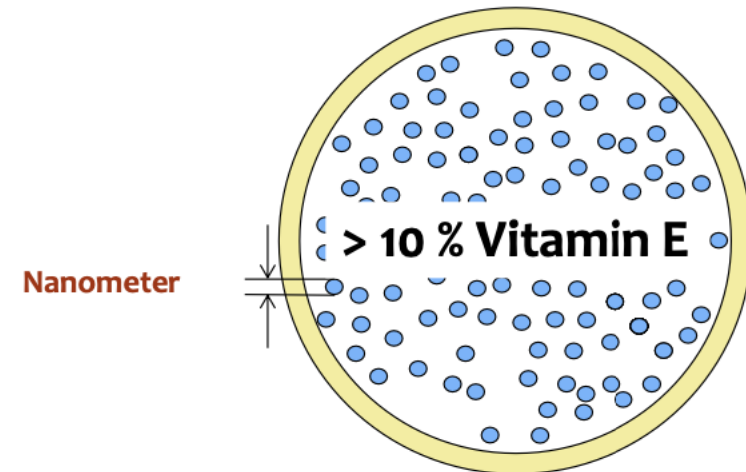


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New patent (WO 2009/062657 A3)

Direct incorporation of lipophilic additives into fibers and release to the surface but no leaching during washing.



→ Tested 100 Washing Cycles



- ✓ Cosmetic function by “Vitamin E” embedding during fiber spinning.
- ✓ Secondary PCM function embedded (confer. CLIMA).
- ✓ Permanent lifelong functionality.
- ✓ Best of class → First and only permanent cosmetic fiber.

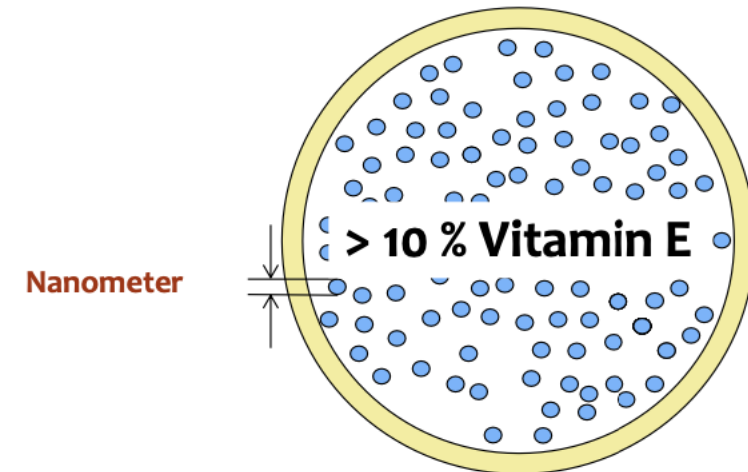


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✓ “Vitamin E” the active substance for instance in jojoba and almond oil, face lotions and creams is known for its properties:

- antioxidant (anti-aging),
- moisture regulation,
- skin regeneration,
- skin repair.





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- ✓ 20% fiber content (on skin side) recommended to be arbitrarily blended.
- ✓ “Vitamin E” transmission by contact and friction from textile to skin.
- ✓ “Vitamin E” recharge out of the inner fiber depot.
- ✓ “Vitamin E” amount transferred like the usage of lotions and creams.
- ✓ Product development support.
- ✓ Testing and certification of product performance.





 **Cell Solution**[®]
BIOACTIVE



- ✓ Lyocell staple fiber
- ✓ Excellent moisture management
- ✓ Smooth lyocell like surface
- ✓ Good textile processability
- ✓ Listed as active substance at Oeko-Tex®.
- ✓ Oeko-Tex® STANDARD 100 ongoing.

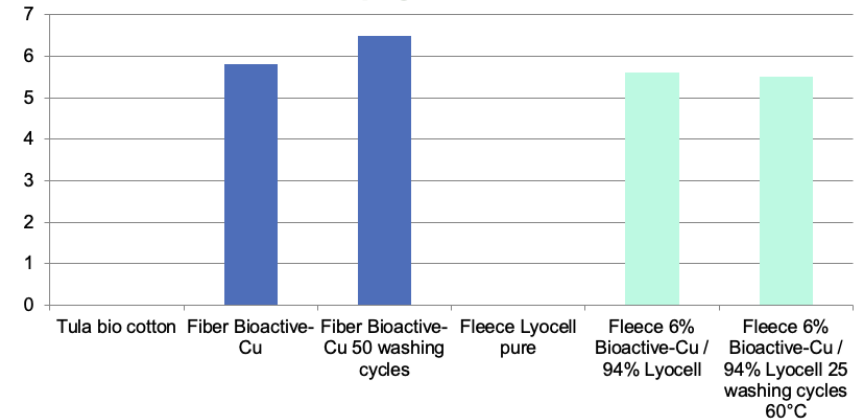
- ✓ Antibacterial function
- ✓ Antiviral function
- ✓ 50 washing cycles performance tested.



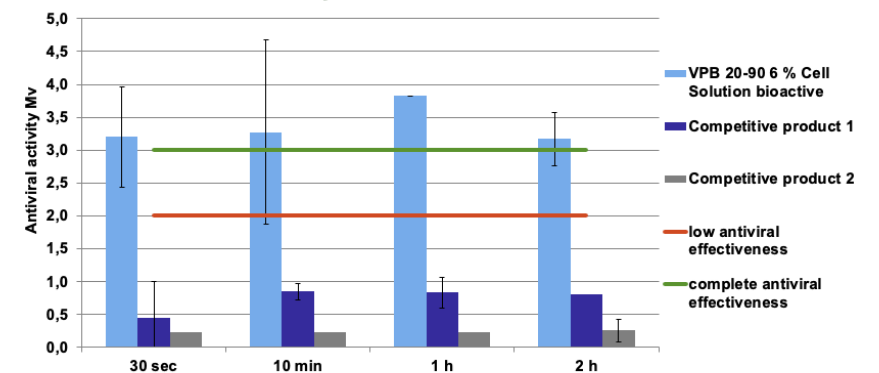
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**Antibacterial effectivity (log KBE)
Staphylococcus A.**



Antiviral activity acc. to ISO 18184





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- ✓ Solution based copper integrated at a very low level in a unique manner.

- ✓ Fiber content depending upon level of antimicrobial efficacy:
 - ✓ 6% fiber content antibacterial efficacy log 5 and better,
 - ✓ 6% fiber content antiviral efficacy log 3 and better.

- ✓ Blended arbitrarily with other fibers.
- ✓ Copper related discolorations are negligible due to the low admixture.

- ✓ Product development support.
- ✓ Microbial testing and certification of product performance.



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We look forward to your questions
..... contact us any time.



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