

Welcome to the
fascinating world
of Schoeller

The power of bluesign merino

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- 1. Schoeller**
- 2. Merino power and properties**
- 3. Sustainable merino
Hercosett vs. EXP**
- 4. EXP development and bluesign**
- 5. More merino functions**
- 6. Summary**

Some facts about Schoeller

<http://www.schoeller-wool.com/en/schoeller/imagemovie>

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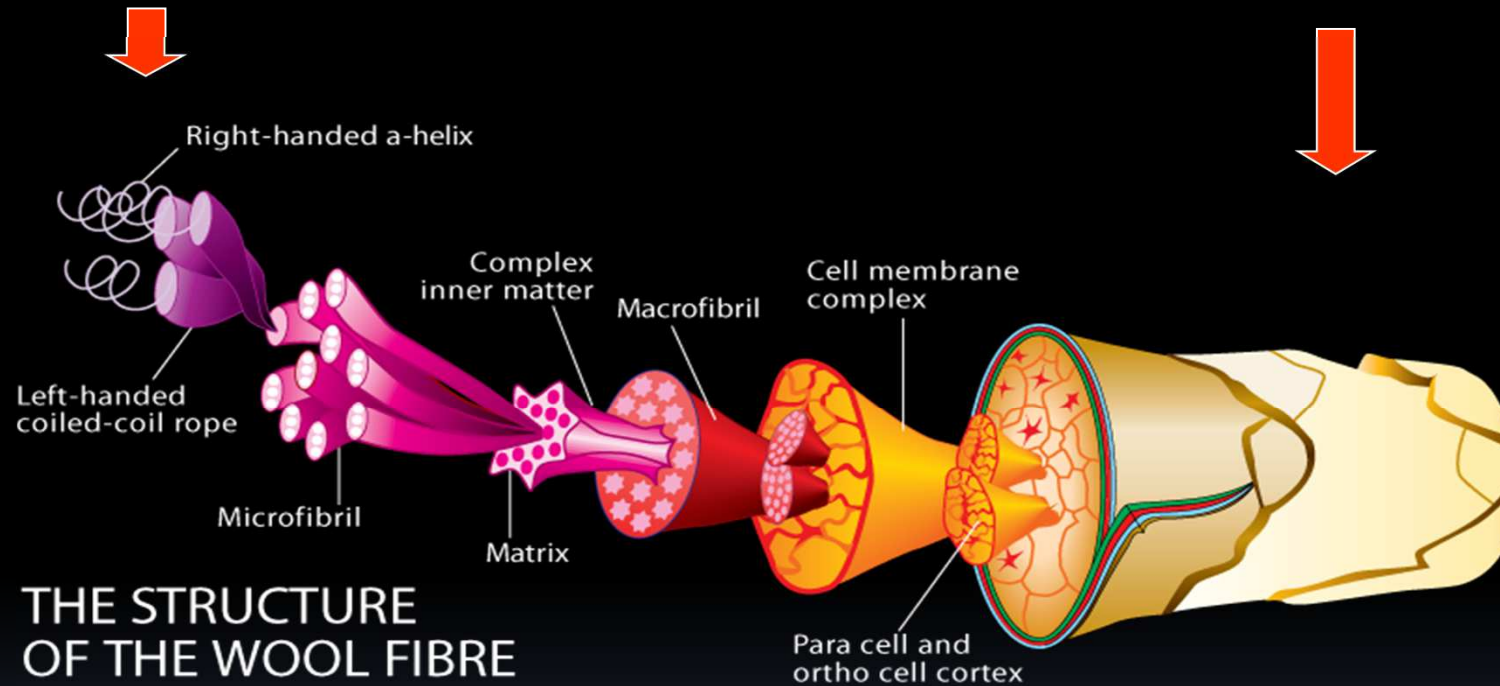
Natural Merino Power !

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Merino...the High-Tech-Fiber!

Hydrophilic core

Hydrophobic coat



Wool is the most complex fiber in the world...

Some merino properties

Comfort under cold and warm weather conditions, due to its natural temperature regulation

Excellent flame resistance; Wool is not melting

Perfect heat and moisture management – Perspiration Control

Natural fiber
Absorbing of UV-A+B

WOOLFUNCTIONS

Stain resistance and self cleaning

„Clothes that breath“
Merino can absorb up to 30% of its own weight in moisture due to its hydrophilic core

odour retardant

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**Sustainable
machine washable
merino ?**

Hercosett Treatment (superwash)

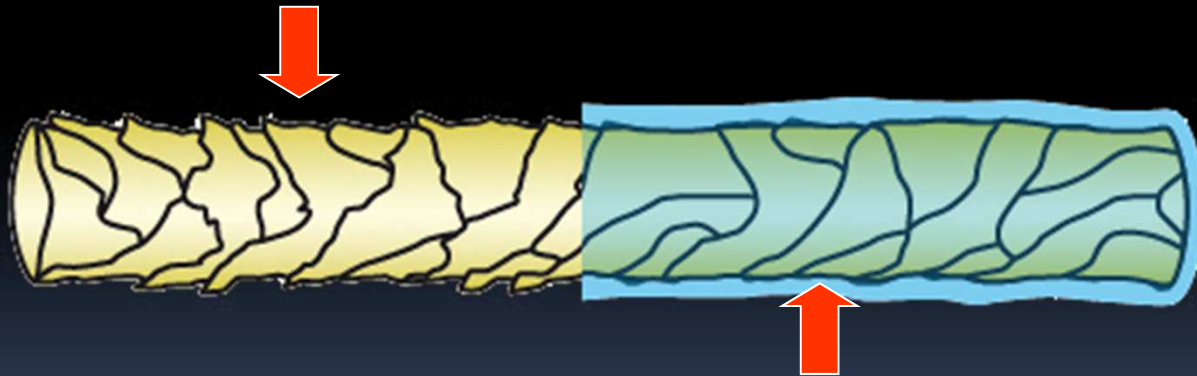
- Environmental issues with chlorine Hercosett treatment:
 - AOX present in waste water and possibly in the garment
- Production approx. 30 000 t/a of wool
 - -> 2 000 t/a Natrium-Hypochlorid (NaOCl), and
 - -> 2 500 t/a AOX-containing polymers

Hercosett Treatment (superwash)

Results:

1. Removal of scales with chlorine
2. The surface damage and smoothening
3. Loss of wool natural character
4. Yellowing of the wool
5. Poor handle

Wool-fibre without treatment



Superwash (Wool fibre with hercosett treatment; coated by polymer)

Goals and environmental aspects for a new wool treatment

- Market and science evaluation
(state of the art and potenzial of technologies)
- Definition of enviromental and technical aspects based on bluesign parameters
(bluesign blue)
- Enviromently friendly treatment
(e.g. no hazardous gases, clean waste water, clean textiles)
- AOX-free /chlorine-free process
- 100% wash-performance
(5x5A and Total Easy Care certified)
- Potential to substitute the chlorine-hercosett process

Advantage of starting the EXP-development with the bluesign certification ?

Image and support

Labeling of customers

Practicability and market relevance

Technical data base for other certifications



bluesign®

SYSTEM
PARTNER

EXP - Milestones



- EXP 1 Start and first experience
- EXP 2 approx.30 household washing cycles (3x5A)
- EXP 3 approx.50 household washing cycles (5x5A)
- EXP 4 Tumbler drying (5x5A plus TEC)
Start licensing program

Merino EXP in practice.
Seamless garments
Theo Fritsche

EXP^{4.0}



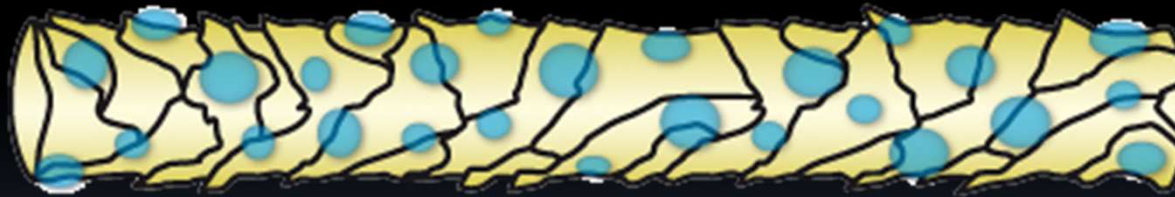
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EXP 4.0 (chlorine free)



Results:

1. No hard surface damage
2. Inherent characteristics of wool preserved
3. Machine-washable wool (superwash standard)
4. Total Easy-Care (Tumbling)
5. Improved pilling resistance



EXP[®]-treated wool with ecological Polymer batches.
Through oxidation the scales become softer.

Standard Hercosett



AOX



~~AOX~~

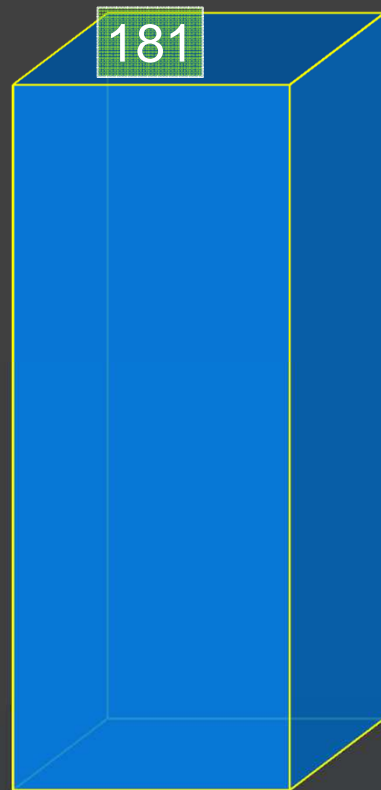
300x more...
... than average allowance in drinking water (WHO)

AOX production:
60 mg/L => 400 g/t => 12 000 AOX kg/a

Standard Hercosett



Available Chlorine (from hypochlorite) in g/L



Hercosett

300x more...

... than average allowance in drinking water (WHO)



swimming pool

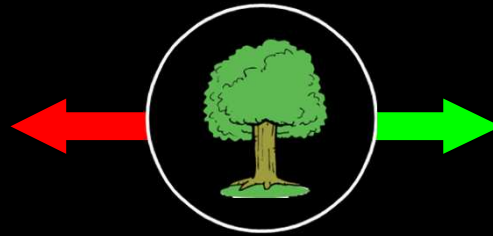


drinking water

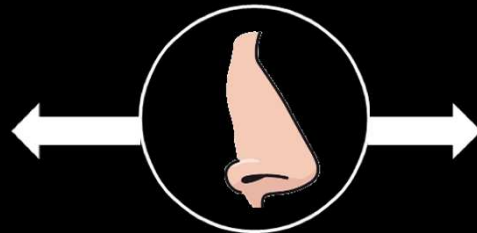
Standard Hercosett



AOX



~~AOX~~



Hazardous gases

(Trihalomethans evaporates)*

- Chloroform
- Carbon tetrachloride
- trichloroethylene



Some EXP-Awards



"This is a great technology with a broad impact and consumption savings. It is the first wool finishing process which meets the strict criteria of the Bluesign and Global Organic Textile (G.O.T.S) standards. A truly all-round sustainable innovation."

"The use of wool is becoming increasingly popular. That's why it's so important that our industry does everything in its power to produce wool in as environmentally friendly way as possible. The EXP® method makes it possible to produce washable wool without using chlorine in the manufacturing process. That's fantastic!"

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Examples for more Merino Power

Anti-Mosquito treatment

- Protection against "blood-suckers,,
- Ecotex-Standard 100
- 30 - 50 household washcycles



Enciel White Merino

- Developed together with TMC
- Brilliant wool colours
- Brilliant white on merino (not only wool white)

ENCIEL



Some more unknown wool - follower...

Wool is used by...



Airlines:
e.g. Qantas, Emirates,
Singapore Airlines, ...

Automotive Industry:
e.g. BMW, Mercedes, ...



Summary

- Wool is the most complex High-Tec fiber
- Merino has a wide scale of technical properties
- Merino (and some of its man made fiber blends) are perfect outdoor performer
- EXP is the new era of sustainable Superwash, the new standard of the future for washable-wool
- Commercialised EXP process incl. licensing and patent pending

**Thank you
for your attention!**

www.schoeller-wool.com

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