



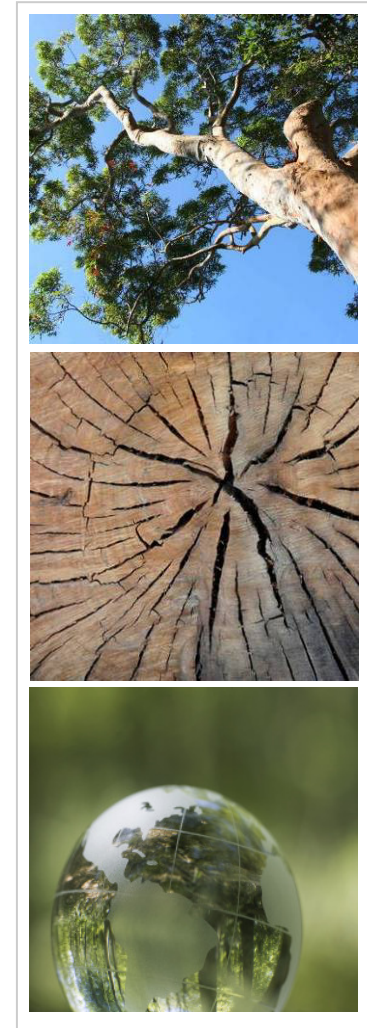
- Take no Fake -

Tailored Counterfeit Protection for Cellulosic Products

40th Intl Symposium DITP, 20 & 21 Nov 2013

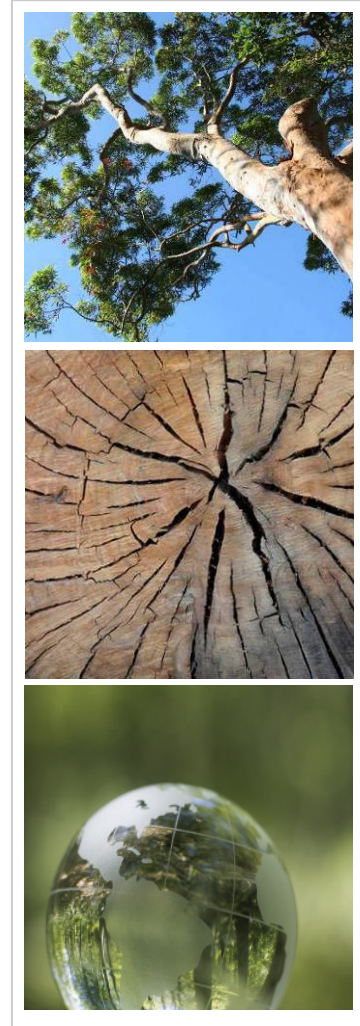
Overview

- Kelheim Fibres GmbH – The Company
- Counterfeit – A growing challenge in a globalised economy
- Levels and methods of counterfeit protection
- Applications – Benefits of viscose
- Summary



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Kelheim Fibres – World leader in speciality viscose fibres



- **Location:** Kelheim, Bavaria
- **Capacity:** 90.000 t speciality viscose fibre / year
- **Size:** ca. 500 employees
- **Turnover:** ca. 180 Mio. Euro

Kelheim Fibres – Markets and Applications

- Hygiene
 - Tampons, Wipes, ...
- High-performance textiles
 - Functional garments, ...
- Technical fibres
 - Flock, carbonisation, tow
- Paper applications...



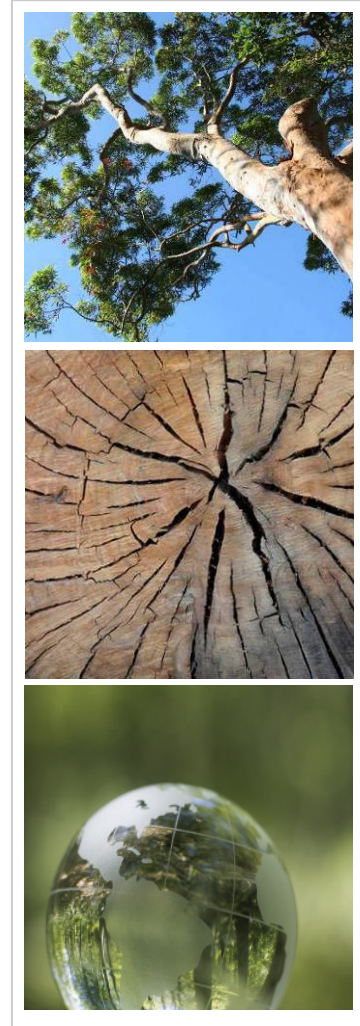
Kelheim Fibres – World leader in speciality viscose fibres



=> Functional Fibres for Unique Products

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Tailored Counterfeit Protection for Cellulosic Products



Counterfeit protection gets into the focus.

http://ec.europa.eu/enterprise/stopfakes_en.htm

Tailored Counterfeit Protection for Cellulosic Products

- The global volume of trade in fake goods stands at over €200 billion euro per year – a similar magnitude to the market for illegal drugs
- Between 2010 and 2011, the volume of fake articles detained by European customs grew by 11%
- In 2011 alone, 115 million fake goods were detained at the EU borders, with an overall value of over €1.2 billion
- Almost one third of the articles detained by EU customs in 2011 were found to be potentially dangerous to the health and safety of consumers, almost double the proportion in 2010
- In 2011, 27 million fake medicines were detained by European authorities

Tailored Counterfeit Protection for Cellulosic Products

Creating awareness is important:



<http://adoholik.com/2009/01/10/adidas-fake-hurts-real/>

Tailored Counterfeit Protection for Cellulosic Products

Detection can be easy...



<http://thehive.com/2012/04/10/chinese-counterfeits-so-bad-i-actually-want-to-buy-them-35-photos/>

Tailored Counterfeit Protection for Cellulosic Products

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Tailored Counterfeit Protection for Cellulosic Products

... but not necessarily:



<http://www.eukicks.com/wp-content/uploads/2010/08/NY-Times.jpg/>

Tailored Counterfeit Protection for Cellulosic Products

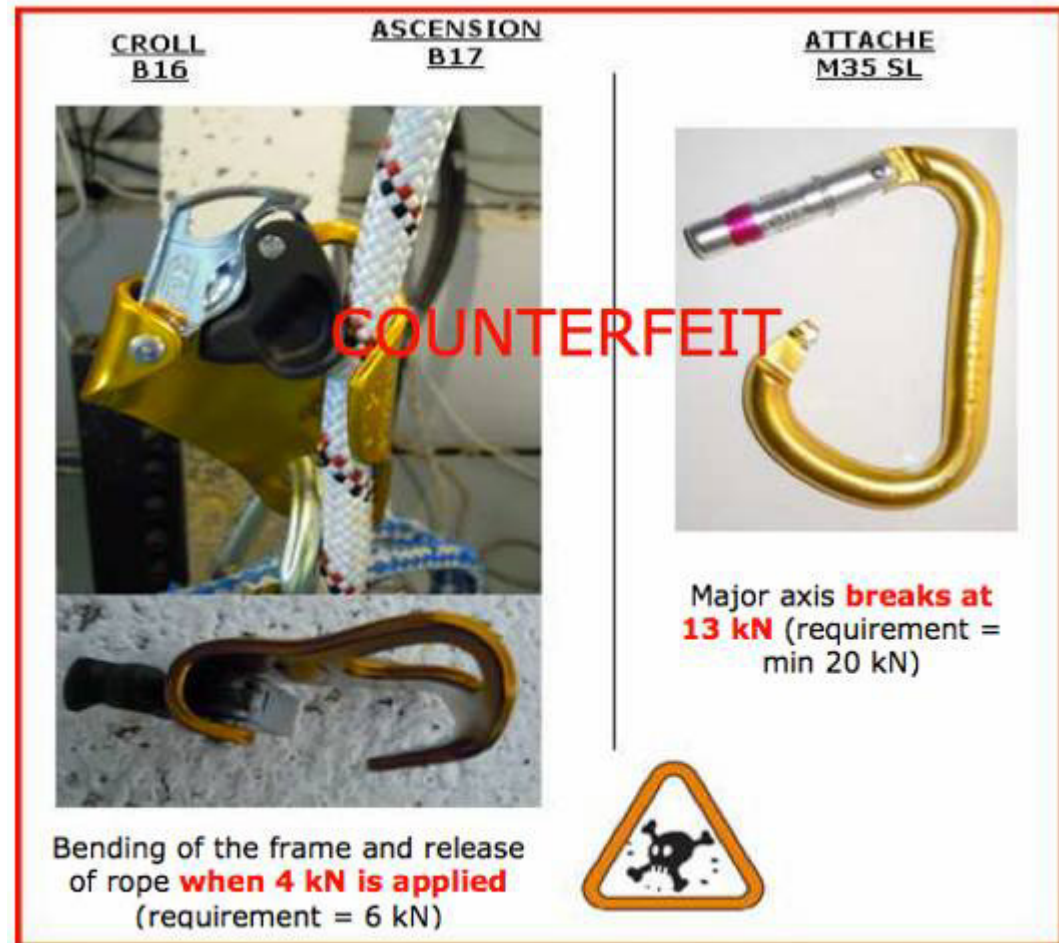
„Critical“ products have special requirements for pre-...



<http://www.petzl.com/en/outdoor/news-1/2011/02/12/warning-regarding-presence-counterfeit-versions-petzl-products>

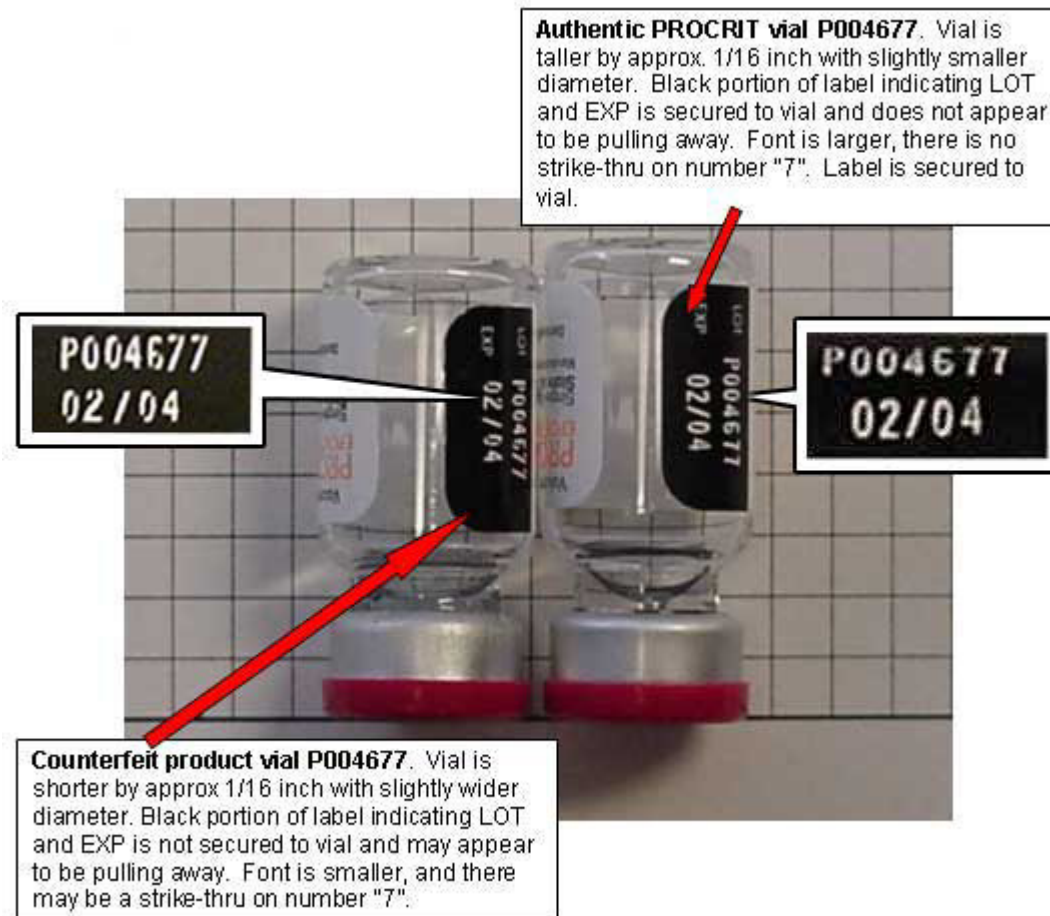
Tailored Counterfeit Protection for Cellulosic Products

... and after-use
verification of the
product!



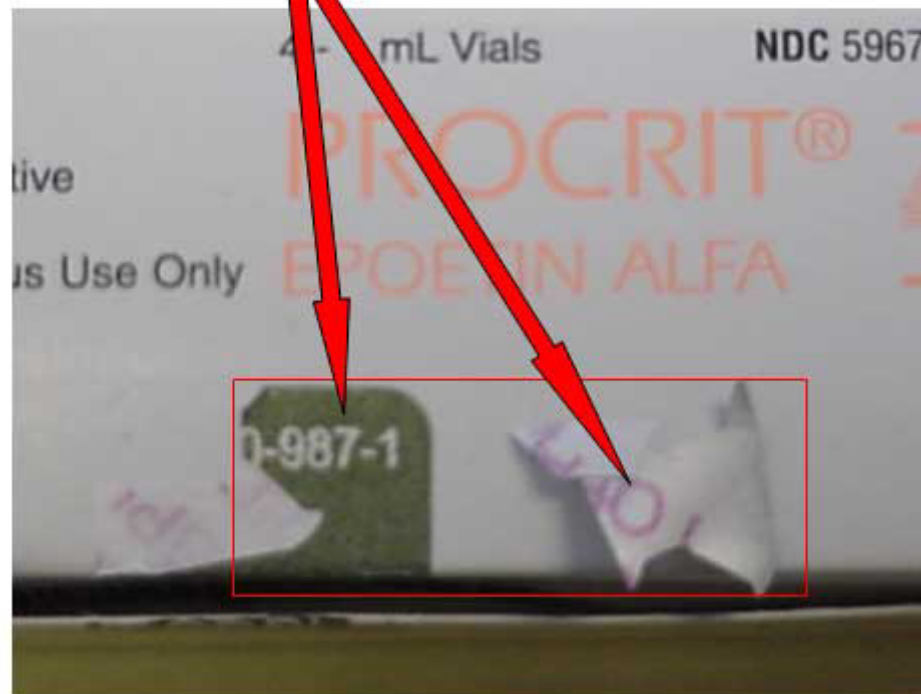
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Tailored Counterfeit Protection for Cellulosic Products



Tailored Counterfeit Protection for Cellulosic Products

Authentic PROCRT carton P004677 and P007645. Carton closure seals are designed to breakaway and leave a residue on the box when removed. The words "OBPLP VOID" in random order should appear on the underside of the label or residue.



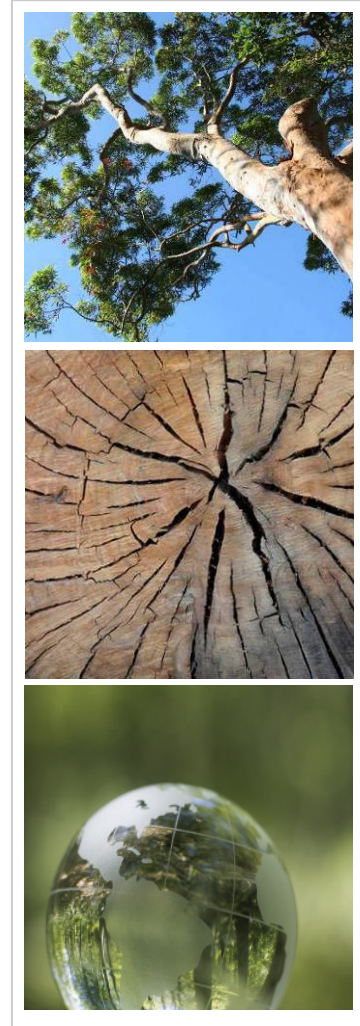
<http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm>

Tailored Counterfeit Protection for Cellulosic Products



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Level 1 – Protection of goods for all-day use

- Applied to: Textiles, Shoes, Tools...
- Methods: Holograms, complex labels => differentiation criteria visible by eye
- Features: Easy detection, added value

Level 2 – Verification of high value products

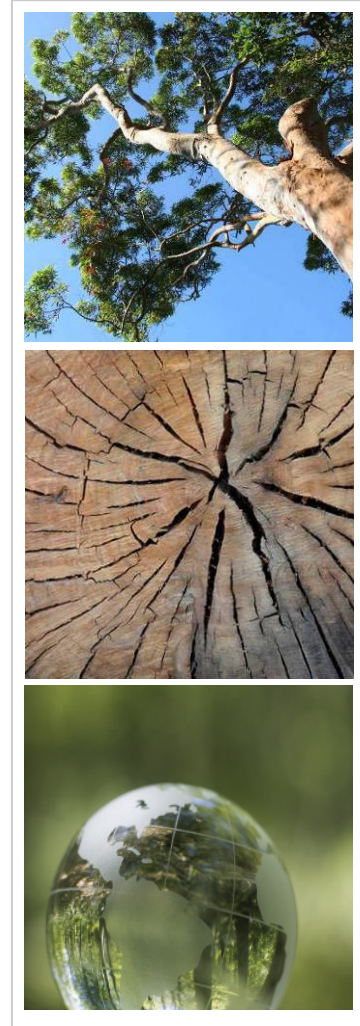
- Applied to: e.g. luxury goods (cosmetics, bags, ...)
- Methods: UV-pigments, optical effects that require additional light sources => (mostly) hidden security features
- Features: Fast and still easy detection. Requires higher effort for the counterfeiter

Level 3 – Unique fingerprint for identification

- Applied to: Security products, products influencing safety or health
- Methods: unique luminescent pigments => hidden security feature, detectable by lab analysis only
- Features: Highest security level. Combination of product and pigment gives a unique spectroscopic fingerprint

Overview

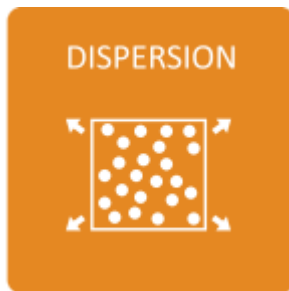
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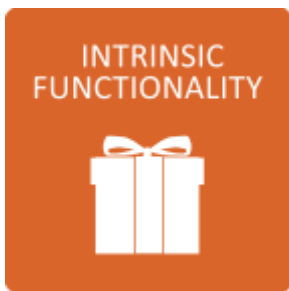
Benefits and Applications of Speciality Viscose Fibres



Due to their hydrophilicity viscose fibres can be easily dyed and show brilliant colours.



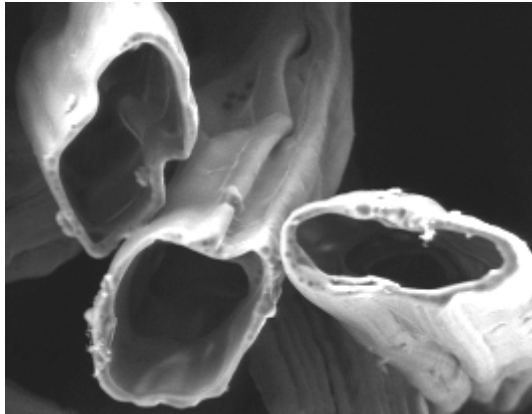
Being natural hydrophilic, the cellulosic viscose fibres disperse very easily.



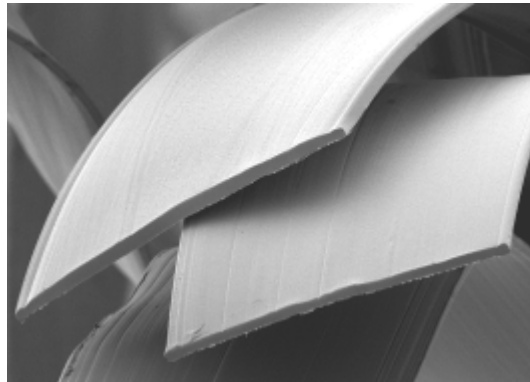
Incorporated particles provide intrinsic functionalities to the paper product.

The Viscose Fibre Tool Box - 1

**Hollow / flat
Bramante / Dante**



flat 1:40; Leonardo



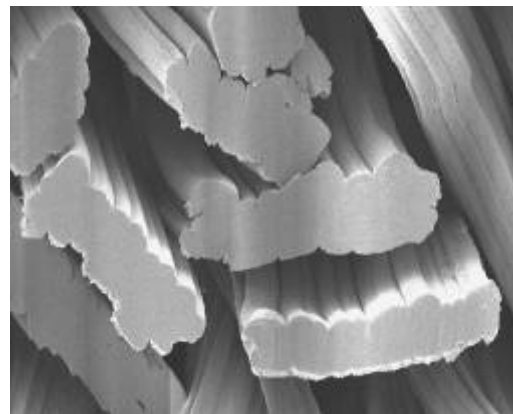
**flat 1:20
Bellini**



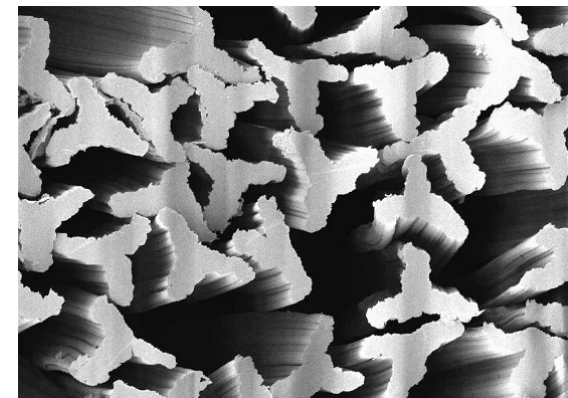
Cross-sections



**round
Danufil®**



flat 1:4; Viloft®

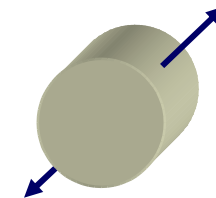
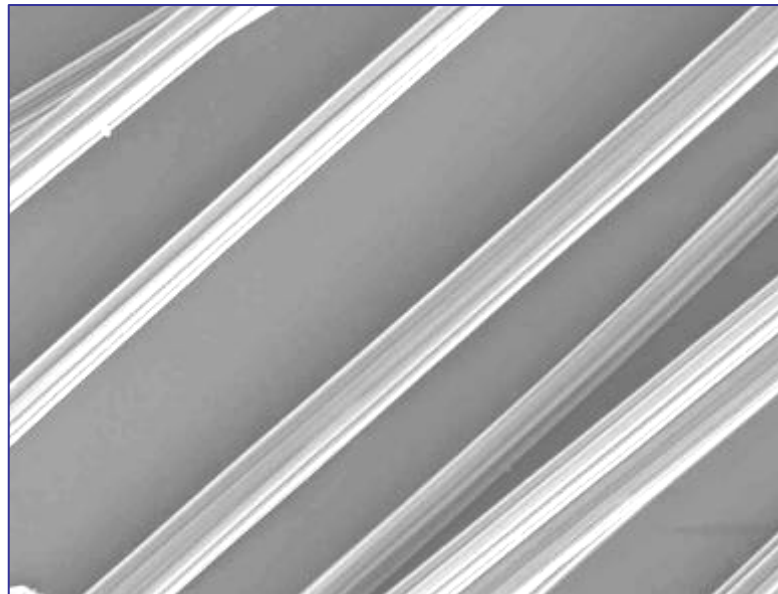


**trilobal
Galaxy®**



The Viscose Fibre Tool Box - 2

Fibre dimensions



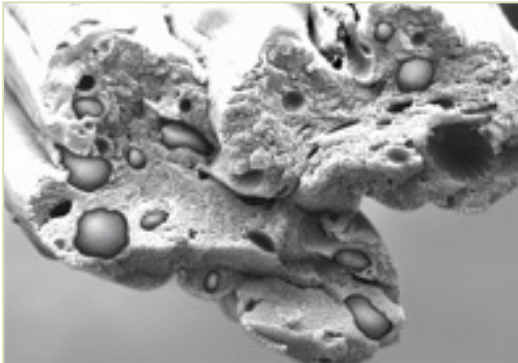
Mean fibre
diameter:
7 – 45 μ m
(0,5 – 28dtex)



Fibre length: 3 – 12mm

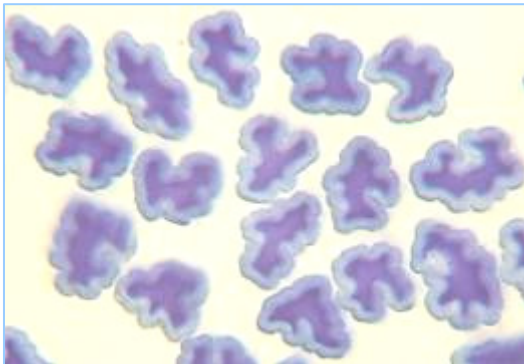
The Viscose Fibre Tool Box - 3

Incorporation of additives



- Pigments
- Microcapsules
- Fillers

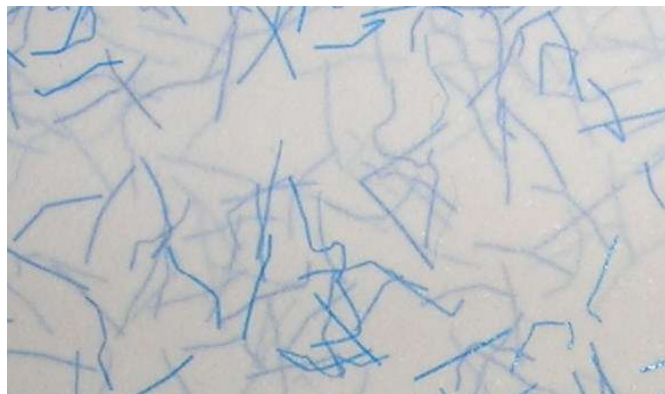
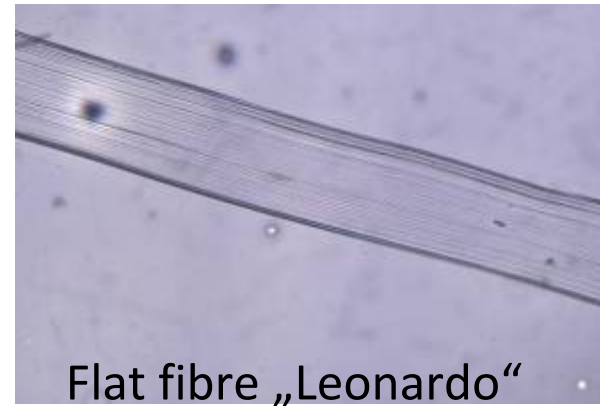
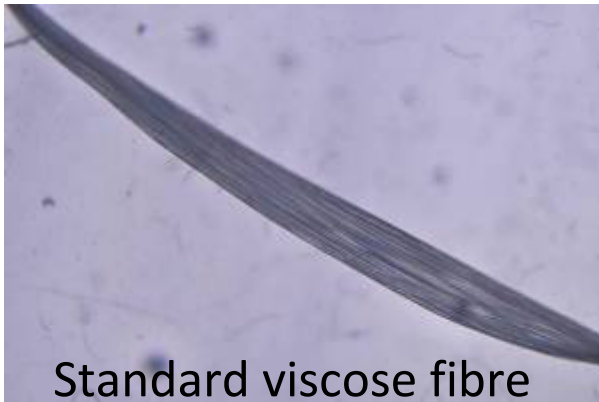
Chemical modifications



- Anionic modification
e.g. surface charge of Verdi = $90\mu\text{eq/g}$
- Cationic modification
- Ion exchange

The Viscose Fibre Tool Box

Product example:

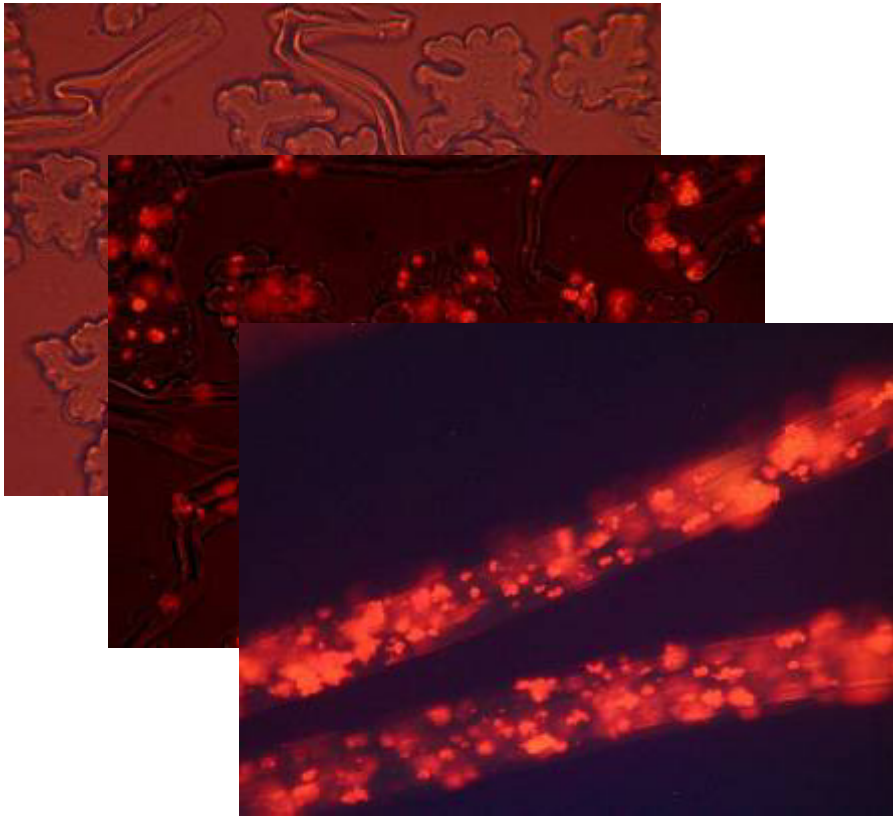


Level 1: Differentiation



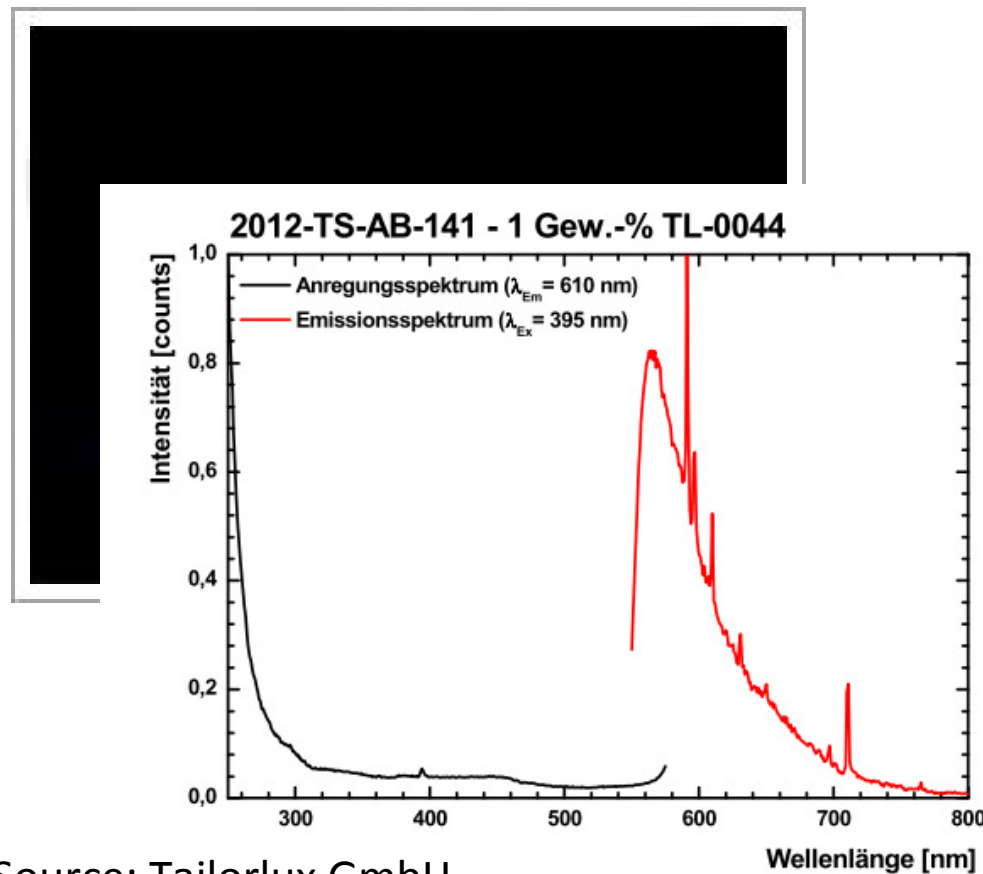
- Cannot be separated from the product or packaging
- Easy integration
- Potential part of your product design

Level 2: Verification



- Easy integration into the product
- Viscose fibre itself has a low and „neutral“ signal
- Specific cross-sections increase or optimise the signal

Level 3: Identification

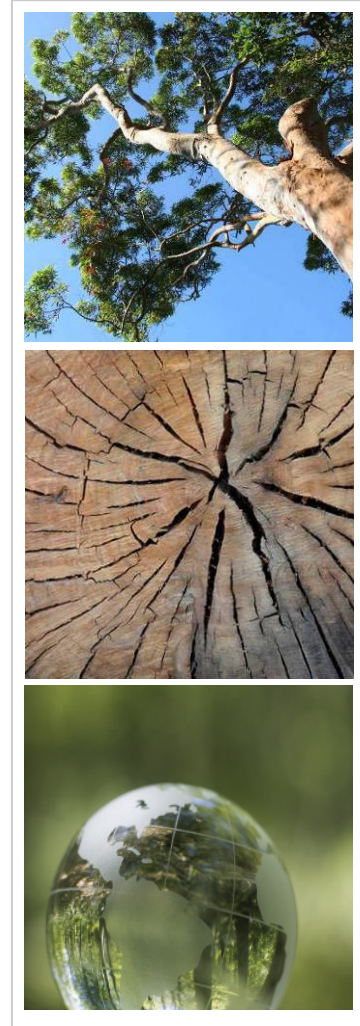


Source: Tailorlux GmbH

- Detection possible even after fire or other severe damage
- Laboratory analysis in combination with the product shows a unique spectrum
- Protection against fraudulent claims

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Summary

- Counterfeit is a fast growing challenge and threatens not only our economy, but also our all day life and safety.
- There are different levels of protection against counterfeit, according to your product's needs.
- Due to their cellulosic nature, viscose fibres are easy to process for all paper and wet-laid products.
- Viscose fibres offer flexible solutions to all these protection levels.



Thank you for your attention!