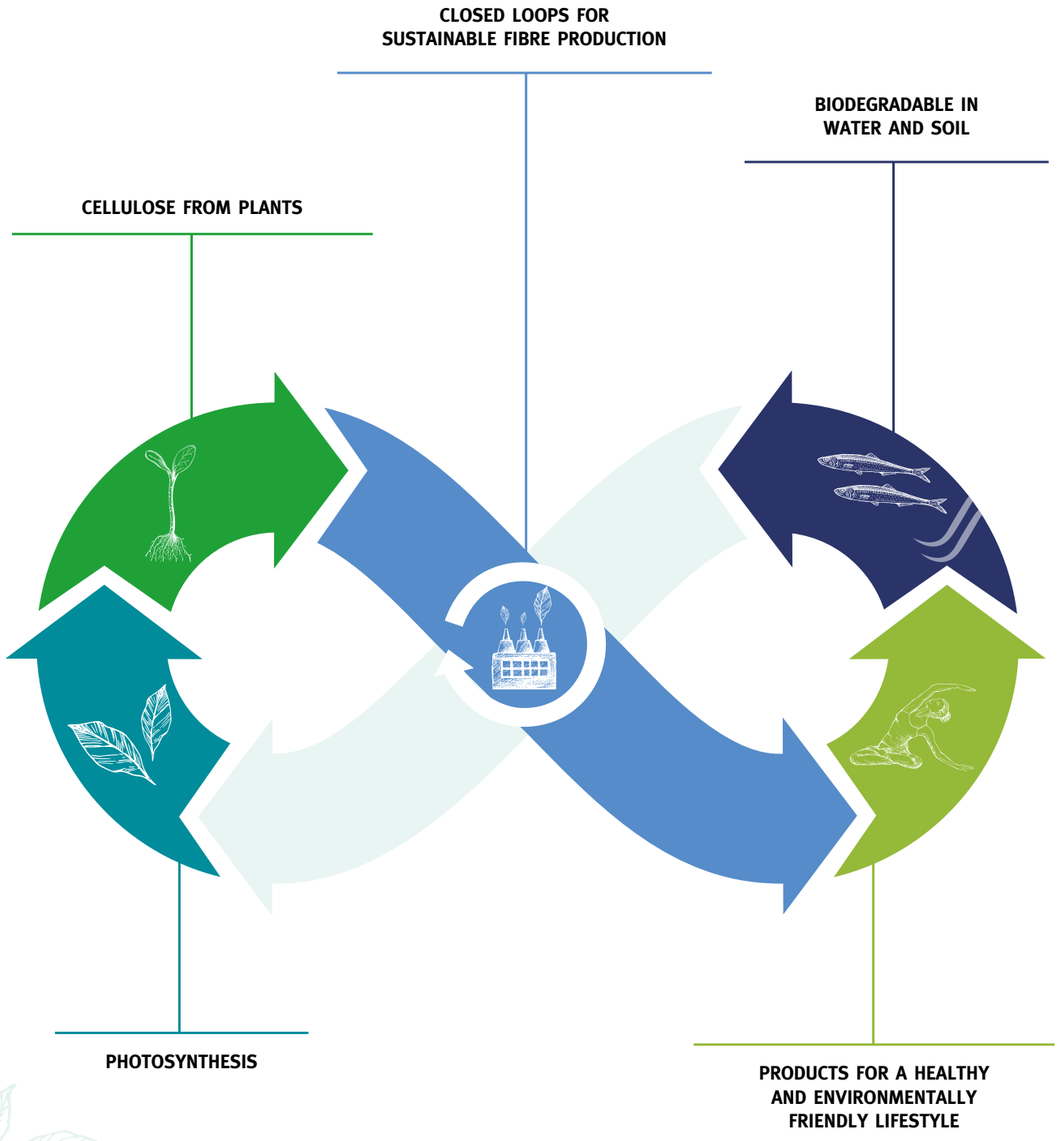
NATURAL PERFORMANCE

Functional fibres *for unique products*

Kelheim Fibres

Natural Circularity. *Paving the way from a fossil-based to a bio-based future.*



TRANSPARENCY BUILDS TRUST

Viscose fibres from Kelheim are made out of 100% natural cellulose, sourced from sustainably managed woodlands (PEFC™, FSC®, Canopy) and fully biodegradable in water and soil. Our fibres are an environmentally sound alternative to petroleum-based materials in a broad range of different end products – while maintaining or even enhancing the functional performance of the product. Our fibres are exclusively produced in Germany, in compliance with strict German environmental legislation.
Our closed-loop philosophy and an energy-efficient plant operation help to save valuable resources.
To ensure transparency and continuous improvement, Kelheim Fibres is the first viscose manufacturer worldwide with an EMAS-validated environmental management system. EMAS stands for "Eco Management and Audit Scheme" and is a standardised eco management certification system developed by the European Union.

compostable
7W-0108

Functional Fibres –
For unique Products

Kelheim Fibres produces viscose speciality fibres for a broad spectrum of applications.

We concentrate on the development of outstanding properties in our fibres that allow our customers to develop unique products.

USER NEED

NATURAL ORIGIN

cellulose from plants

RECYCLED MATERIAL

PLANT-BASED

FIBRE SCIENCE FROM KELHEIM

By adjusting different parameters we design fibres that meet the precise needs of our customers and enhance the typical properties of the viscose fibres.

Functionalised *Viscose Fibres*

CROSS-SECTION FUNCTIONALISATION

INTRINSIC FUNCTIONALISATION

0.5 ñ 3.3 dtex

DIMENSIONAL FUNCTIONALISATION

Kelheim Fibres

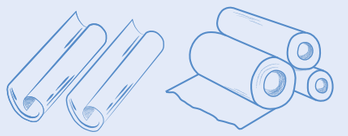
HIGH PERFORMANCE

DOWNSTREAM VALUE CHAIN

We bring together like-minded market participants and identify consumer needs that we can solve.

Nonwovens

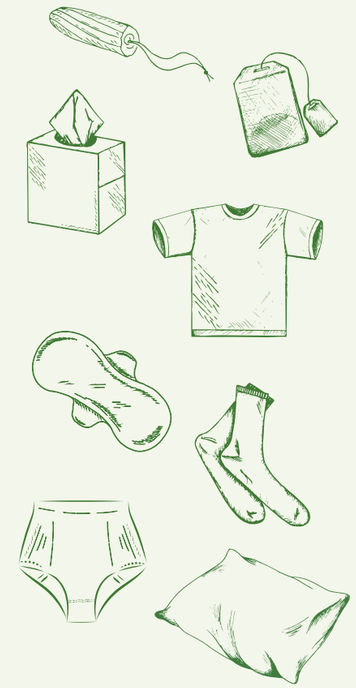
Yarn



Speciality Papers

FUNCTIONALISED PRODUCTS FOR A HEALTHY LIFESTYLE

Tailor-made fibres for hygiene applications, performance textiles, speciality papers and technical applications such as filtration and flock.



UNIQUE PRODUCTS

HIGH PERFORMANCE

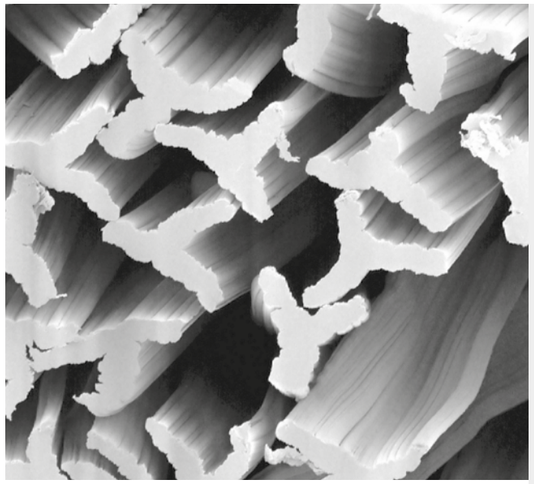
REUSABLE

BIO-DEGRADABLE

1

Modification of *Cross-Sections.*

By adjusting the spinning conditions, the cross-sections of viscose fibres can be modified. This lends the fibre completely new characteristics and qualifies it for new applications.

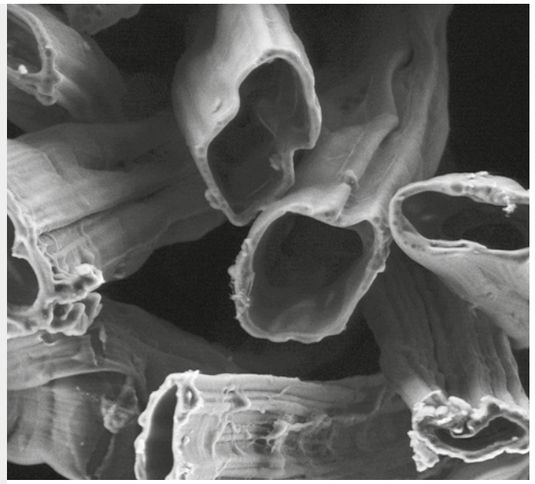


Galaxy®

Trilobal Viscose Fibre with High Absorbency

Galaxy® is a Y-shaped viscose fibre. Its special design increases the absorption capability of nonwoven structures. Galaxy® finds its main application in the manufacture of tampons, where it is the global market leader. It is moreover used in standard nonwoven processes such as dry laying or spunlacing.

ABSORBENCY · BULK · SAFETY IN USE · SOFTNESS

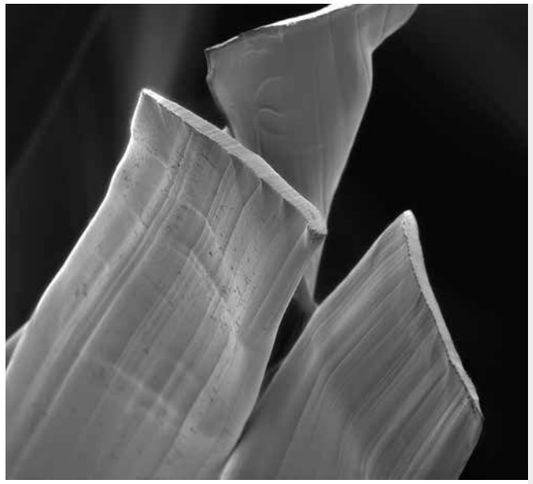


Bramante

Hollow Viscose Fibre

Bramante is characterised by its segmented hollow structure in the wet state which delivers significantly increased levels of absorbency and water retention capacity relative to standard viscose fibres. Fluid is stored inside the fibre, which minimises re-wetting – even under pressure. Functional textiles, hygienic applications and washable incontinence products are just some end-uses for which Bramante helps deliver enhanced performance.

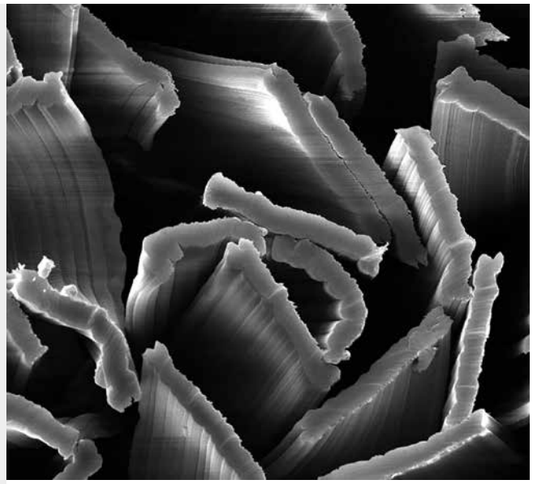
ABSORBENCY · BULK · COMFORT



Bellini

Self-Bonding Viscose Fibre

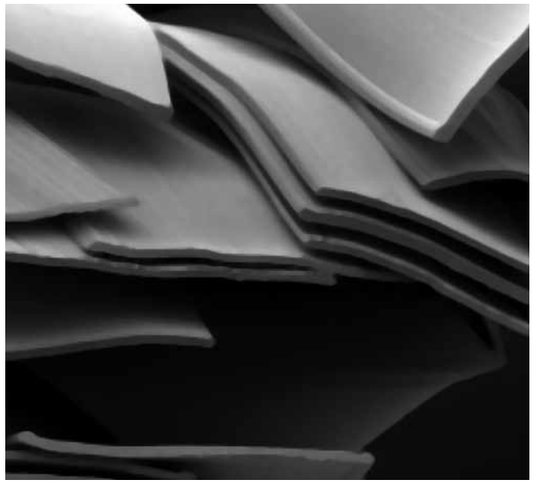
Bellini is a highly flexible and fine fibre with excellent bonding properties. Less than 5% of Bellini added to paper pulps increases tear length, doublefold count and strength of the finished paper.



VILOFT®

For Outstanding Wearer Comfort

VILOFT® is a speciality viscose fibre with a unique flat cross-section. Spun into a yarn, VILOFT® fibres create hollow spaces filled with air for improved breathability. The increased fibre surface leads to exceptional moisture management. Alone or in blends with other natural or synthetic fibres, VILOFT® is used for functional next-to-skin textiles which offer outstanding wearer comfort.



Leonardo

Transparent Flat Viscose Fibre

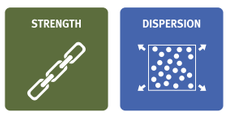
Leonardo is an extremely flat viscose fibre with a thickness-to-width ratio of 1:40. The fibre also exhibits a very even surface with completely parallel sides and a highly regular cross-section. Leonardo can be used for transparent papers as well as for the improvement of paper quality.

Sunshine Eco

Giving Fashion a Sparkle

With Sunshine Eco, a completely biodegradable viscose fibre for sparkling effects is available for the first time. The extremely smooth surface works like a mirror when exposed to sunlight and give fabrics an eye-catching sparkle.

Up to 30% Sunshine Eco can be added during yarn spinning. The effect is retained even after reactive dyeing.



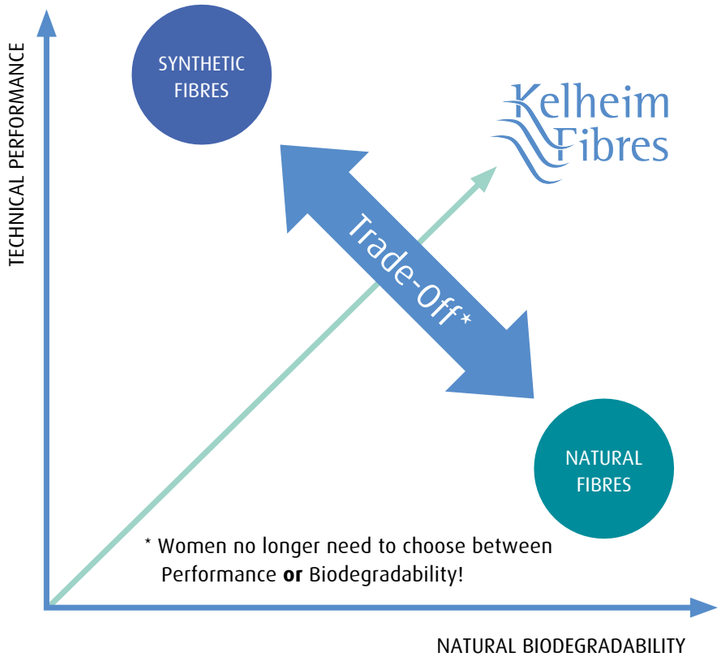
Femcare Fibres from Kelheim – *Designed for Women.*

PERFORMANCE MEETS SUSTAINABILITY

In the past, women often had to choose between reliable, yet synthetic femcare products and sustainable alternatives, that didn't offer the same level of performance.

Now women don't have to choose. They can have both.

With our capability to modify and functionalise our hygiene fibres we can meet the specific and fundamentally different requirements of each component in feminine hygiene products. So our fibres offer a plant-based and fully biodegradable alternative to existing fossil-based solutions without compromising on performance.



UNIQUE CHARACTERISTICS OF OUR FIBRES

With their unique characteristics, our femcare fibres support women in their active lifestyle from their first period to menopause and beyond.

NOMINEE
German Sustainability Award 2022

Plant-Based
Our fibres are made from renewable wood pulp from sustainably managed sources.

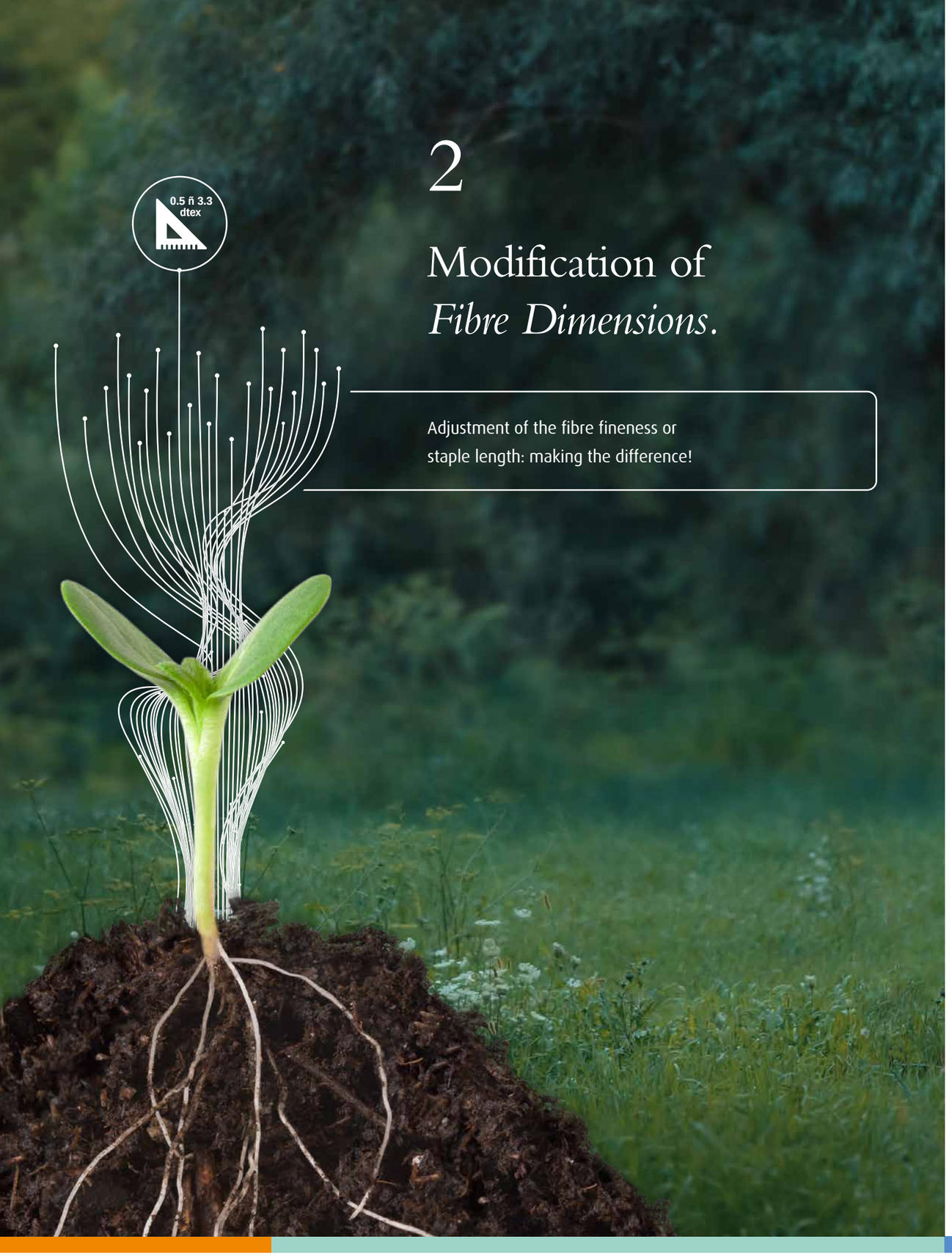
Pure & Safe
We are commited to the strictest hygiene standards in the industry to ensure clean and safe feminine hygiene solutions.

Leakage Protection
Thanks to their outstanding absorbency and retention capacity, our fibres contribute to femcare products women can trust completely.

Comfort
In sensitive femcare products, our naturally soft fibres leave a pleasant feel on the wearer's skin.

Biodegradable
Our fibres are fully biodegradable in water and soil.

Reusable
Due to their high wash and blending abilities our viscose fibres are ideally suited for reusable products such as period panties.



2

Modification of *Fibre Dimensions.*

Adjustment of the fibre fineness or staple length: making the difference!

Tow and Short Cut

Endless Possibilities

Our continuous viscose tow, available in wet or dry form, is used in a variety of technical applications. The tow products help deliver precision cut fibres of consistent length with excellent dyeing properties and perfect behaviour in finishing as well as excellent dispersion and uniform flocking. The fibres may also be carbonised for use in high-tech materials.

Our short cut fibres with cut lengths of 3 to 12 mm deliver perfect dispersion in all wet-laid processes for the production of paper or non-wovens. The paper porosity can be precisely controlled by incorporating viscose fibre, while our other speciality fibres can help increase the tear resistance of the paper without loss of tear strength. Viscose fibres are 100% cellulosic and can therefore be easily incorporated into the paper matrix.

Microfine

The Ultrafine Microfibre

Microfine is among the finest fibres in the world. With a fineness of just 0.5 dtex it has around one-third the diameter of a silk fibre and delivers excellent softness and a beautiful silky sheen in advanced nonwoven fabrics for high quality wipes and hygiene products.

VISETA®

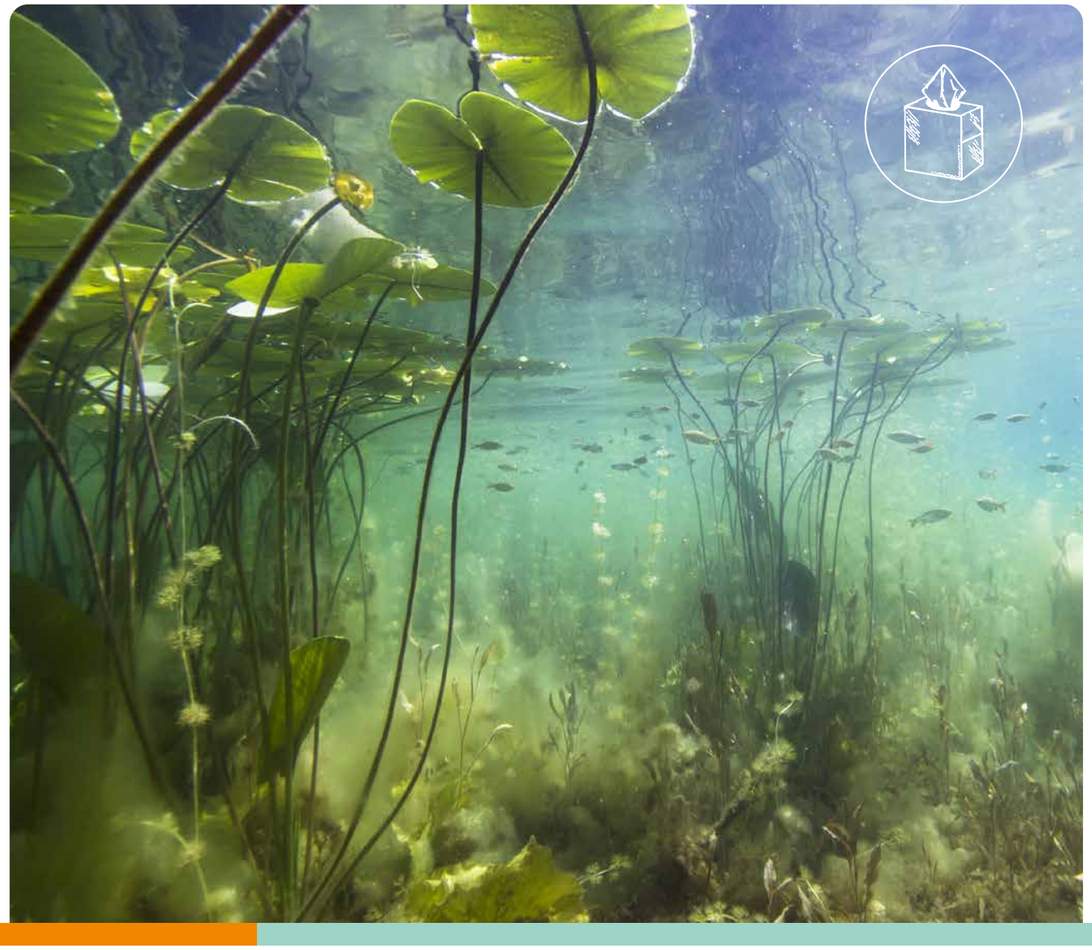
The Fine Fibre

Textiles made of VISETA® are characterised by a gently flowing fall, comfort and brilliant sheen. They moreover offer exceptional wearing comfort. VISETA® has a light and cool feel on the skin and is the ideal choice for top quality underwear or outerwear.

Short Cut Technology
for Flushable Wipes.

"FLUSHABILITY" OF OUR SHORT CUT FIBRES COMPARABLE WITH TOILET PAPER

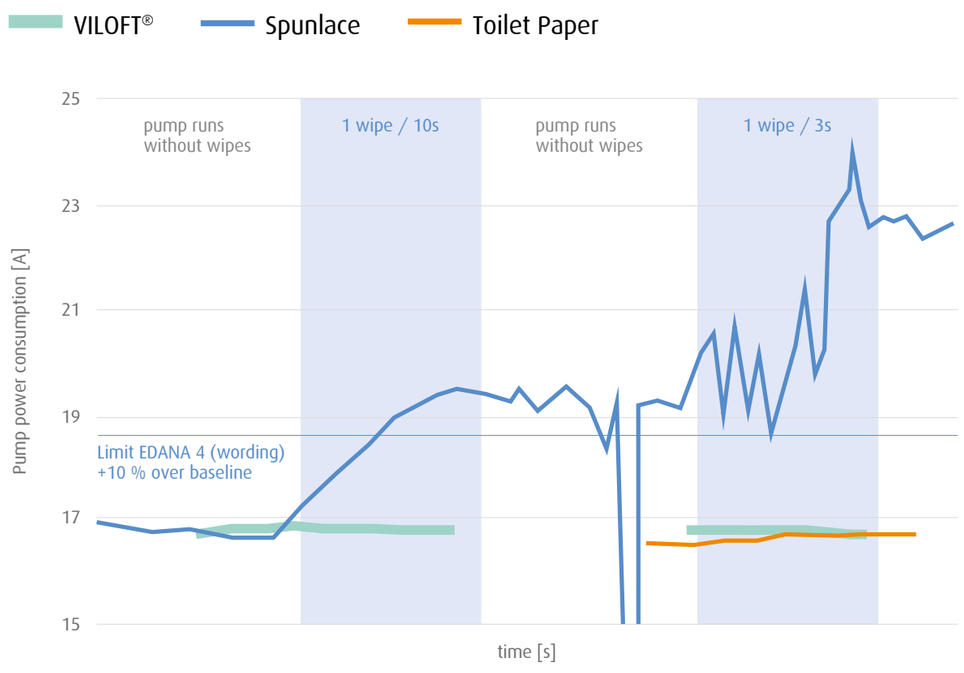
Conventional fibres used for wet wipes usually cause severe blockages of wastewater pumps. High power consumption is an indicator that the pump is becoming blocked. Flushable VILOFT® products on the other hand have a similarly negligible impact to toilet paper on commercial wastewater pumps. They break down completely and are 100% biodegradable.



Flushable wipes have already secured a significant share of the market for hygiene products; moist toilet tissue and toddler training wipes are just some examples in this category. To help avoid clogged household pipes and major problems at municipal wastewater treatment plants, the guidelines issued by INDA and EDANA define in detail when a wipe can be considered flushable. Meeting the requirements of these guidelines is like squaring the circle: strength is required during production, unpacking and use; dissolution is required after use.

The combination of wetlaid and hydroentanglement technology in one in-line process offers new possibilities for producing flushable wipes by using just pulp and man-made cellulosic fibres.

Kelheim Fibres offers modified viscose short-cut fibres to meet the different needs of a flushable wipe product. While meeting the flushability criteria, properties such as softness, absorbency or strength can be tailored to the requirements of different applications.



3

Intrinsic *Activation.*

By modifying the fibre surface charge, by incorporating active particles or by incorporating functional additives in the spinning dope, we produce modified viscose fibres that can add outstanding properties to your products.

Olea

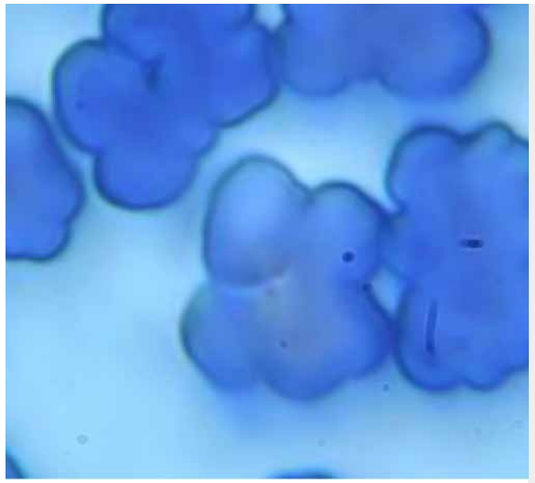
The First Viscose Fibre with Intrinsic Water- Repellent Properties

The hydrophobic properties of Olea fibres are incorporated in the fibre matrix itself, allowing the typical characteristics of viscose fibres to be retained. The additive is locked into the fibre during the spinning process and the hydrophobic effect is therefore durable and cannot be washed out. The additive used is made of renewable materials, like the fibre itself, and so Olea is a fully biodegradable fibre. Olea is an environmentally friendly alternative for the cover- and back sheets of hygiene products – for example nappies, sanitary towels or incontinence pads.

CELLIANT® Viscose

For Stronger Performance, Faster Recovery and Better Sleep

CELLIANT® Viscose is the first in-fibre sustainable viscose infrared (IR) solution. By incorporating Hologenix's bioceramic CELLIANT® technology, we create plant-based fibres for infrared products that promote local circulation and cell oxygenation, while inhibiting odour and helping keep the body at the right temperature.



Deep Dye

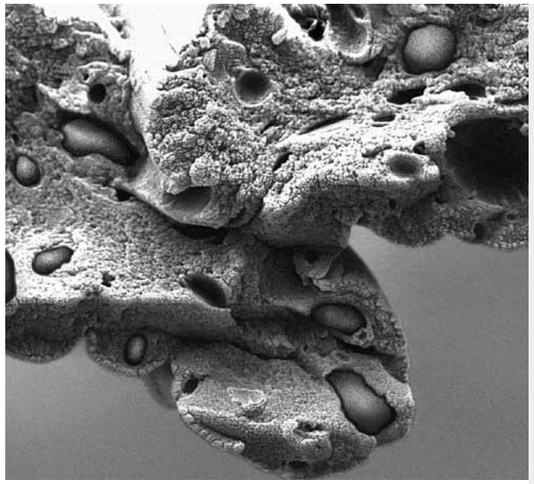
For More or Less Colour

Deep Dye is a cationically activated viscose fibre with more than 40 times the dye pickup capacity and speed of standard viscose fibres. Deep Dye delivers brilliant colours and colour effects and reduces costs while protecting the environment by saving time, dyestuff, water and energy. For textile applications, Deep Dye can be used for melanges or for colour effects in blends with other cellulosic or synthetic fibres. In the non-woven sector, it can be applied in all areas which require fast and effective dye absorption.

Danufil® QR

The Fibre that Sets Quats Free

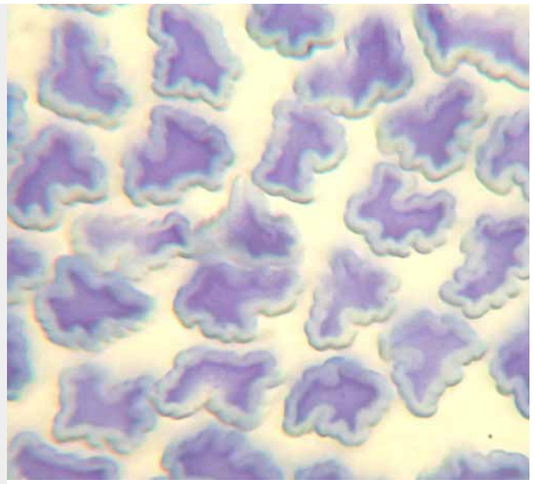
The speciality fibre Danufil® QR is tailor-made for use in disinfectant wipes. Due to their negative charge, standard viscose fibres bind up to 80% of the so-called “quats” (quaternary ammonium compounds), widely used disinfectant substances, hindering their actual purpose. The positively charged Danufil® QR resolves the issue by reducing this undesired effect to less than 10%. Finally, disinfectant wipes can benefit from properties like softness or excellent fluid handling, which make viscose fibres a sought- after raw material for other hygiene, medical or food applications.



Outlast® Viscose Fibre

The First Viscose Fibre with Outlast® Technology

This fibre offers all of the benefits of viscose such as soft, fine feel – similar to cotton or silk, the ability to absorb moisture and excellent hygienic properties while also providing Outlast®’s temperature-buffering capability for extreme comfort. Outlast® fibres contain patented micro-encapsulated phase-change materials, Thermocules®, which store, absorb and release heat. These viscose fibres are ideal for various clothing applications as well as for bedspreads, blankets or mattress covers.



Verdi

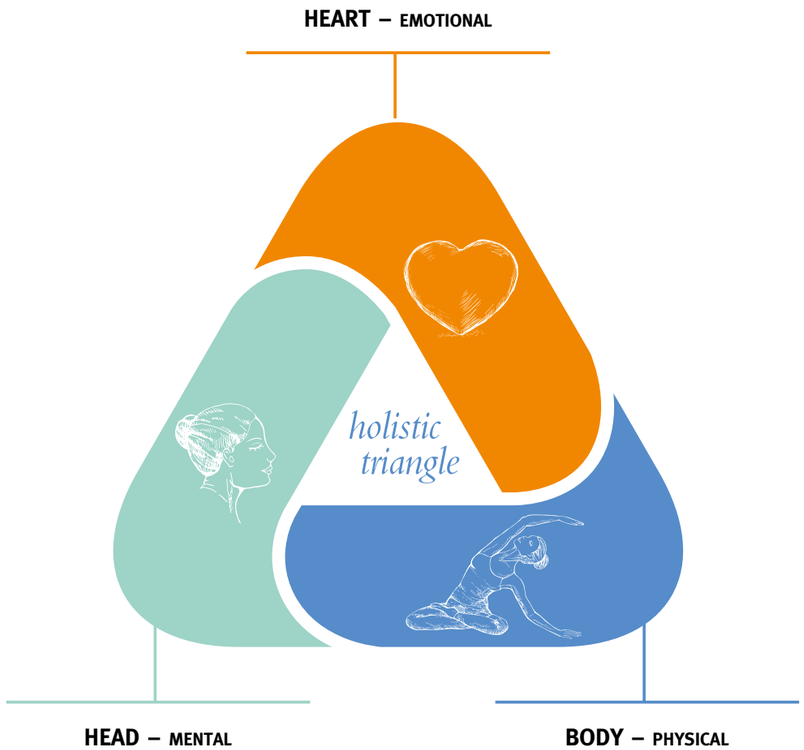
Anionic Viscose Fibre with a Defined Core-Sheath Structure

The anionic modification of Verdi fibres results in an increased absorbency of water vapour: a clear benefit for wearer comfort and moisture management in textiles. The non-sticking fibre surface qualifies Verdi for the use in wound-dressings and other medical applications. Verdi also exhibits self-extinguishing properties.

Functionalized Textile Fibres –
To boost Wellbeing.

TRIANGLE OF WELLBEING

Our wellbeing depends on a multitude of tangible and intangible factors that affect and influence our lives every single day. A holistic approach to overall wellbeing helps us to successfully overcome life's challenges and stress.



HOLISTIC WELLNESS APPROACH

Our plant-based speciality viscose fibres are designed for body & soul. With their special functionalities they support the physical, mental and emotional wellbeing of the end user by adding a little something extra to our customers' fabric or structure: skin-friendliness, moisture absorption, rapid drying, breathability, lightness, UV repelling characteristics or infrared technology are just a few examples.

As they are made from renewable materials and are biodegradable, our fibres take into account the consumer's desire for eco-friendly products and so contribute to their wellbeing.

Innovation *and Competence.*

New Business Development at Kelheim Fibres means identifying the role our fibres can play in solving the challenges of our times.

OUR SERVICES

Open Innovation

At the heart of our innovation approach is the identification of customers' "unmet needs" and translating them into fibre solutions. To achieve this, we focus on joint and open innovation and a close exchange with external partners. We are always striving for mutual inspiration as we know how important synergies are to channel an idea from the ideation stage to commercialisation.

Trend Management

The ability to anticipate future trends and to react proactively to the resulting change is becoming increasingly crucial. The identification, understanding, evaluation and monitoring of trends are key elements in creating user-centered and innovative solutions for previously unsatisfied customer needs. At Kelheim Fibres trend management plays an increasingly important role so that today, we can already develop the right solutions for the challenges of tomorrow.

AHP Competence Platform

Our AHP competence platform provides an extra level of consulting, process expertise and service, particularly for more know-how-intensive solutions, and acts as an ideal interface between manufacturers and brands. We also help our customers to meet new challenges, and we make ourselves available to support their partners along the whole value chain.

Wetlaid Pilot Plant

Our in-house pilot plant allows customers to take the first steps in developing innovative papers – and engineer their new products in close cooperation with our fibre experts.

Shaping the *Future together.*

WHO WE ARE

Kelheim Fibres is the driving force behind the best individual solutions for a healthy lifestyle, while protecting the environment for future generations.

Highest quality is created where experience and innovation meet. We have been operating as a medium-sized company in Kelheim for more than 85 years and are firmly rooted in the community. The parents and grandparents of many of today's employees spent their working lives at the factory, known locally as the "Zellwolle". This not only testifies to a wealth of experience, but also to the trust and deep commitment of our employees to the company. **And that always with a focus on the future.**

FIT FOR THE FUTURE

We are proud that over the years we have been a major driver of innovation in our industry, and we continue to be so. **Our approach to open innovation pulls together expertise from all along the value chain.** Combining passion and an innovative spirit, we develop future-oriented concepts that offer answers to as yet unmet needs.

VALUES

Our business policy comprises three core values that we actively live and that determine our daily work: trust, commitment and innovation.
We do business solely based on the fundamental economical and ethical values of our society. We are aware of the responsibility that we bear for the environment and for respecting human rights and we act correspondingly. We use state-of-the-art technology and employ resources in a responsible way.

BUSINESS PARTNERS

Our success is the success of our customers. This success is built on stable, long-term partnerships. We offer tailor-made products as solutions for our customers' specific requirements. In this way we deliver optimum added value for each industry sector. High standards of quality and reliability form the basis for sustainable cooperation with customers and suppliers.

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Kelheim Fibres