



Purely for you

fibers for a sustainable future



With VEOCEL™ fibers, what is derived from nature returns to nature – this natural circularity builds a solid foundation for sustainable applications.





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fibers for a sustainable future

Derived from the natural raw material wood, Lenzing's VEOCEL™ branded fibers are sustainably produced and suitable for use in a variety of nonwoven end products. Consequently they contribute to a better life and a more sustainable future: better environmental sustainability for everyone, better living for consumers, and better functionality for brands, retailers and other value chain partners.

**better
functionality
for value chain
partners**



**better for
a sustainable
environment**



**better living for
consumers**

fibers for a sustainable future



better for a sustainable environment

VEOCEL™ cellulosic fibers of botanic origin define a new standard of sustainability to care for everyday consumer needs. Derived from the natural raw material wood, VEOCEL™ fibers contribute to sustainability at every stage of their life cycle, helping to maintain the environmental balance by being integrated into nature's cycle. With VEOCEL™ fibers, what is derived from nature returns to nature – contributing to a better future for the planet.

Transformed from nature through an environmentally responsible production process, VEOCEL™ fibers will biodegrade after disposal. This concept of natural circularity builds a solid foundation for sustainable applications.

better for a sustainable environment



derived from nature



botanic origin

VEOCEL™ fibers transfer the essence of nature into nonwoven products through the beneficial properties of cellulose: natural absorbency, liquid distribution, smoothness on skin, biodegradability and versatility.

VEOCEL™ fibers are derived from the renewable raw material wood through an eco-responsible production process. Being plant-based and biodegradable, they offer a sustainable alternative to fossil-based synthetic fibers.



sustainable wood
and pulp sourcing

The raw material for VEOCEL™ fibers is derived from renewable wood sources coming from sustainably managed forests, following the stringent guidelines of the Lenzing Wood and Pulp Policy. The Hot Button Report of the Canadian non-profit organization Canopy highlights Lenzing's contribution to forest conservation and commitment to sustainability. It ranks Lenzing as one of the best performing wood-based fiber producers worldwide for its sustainable wood and pulp sourcing practices.

pulp



fabric



**cellulosic
fibers**



better for a sustainable environment

environmentally sound production

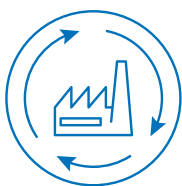
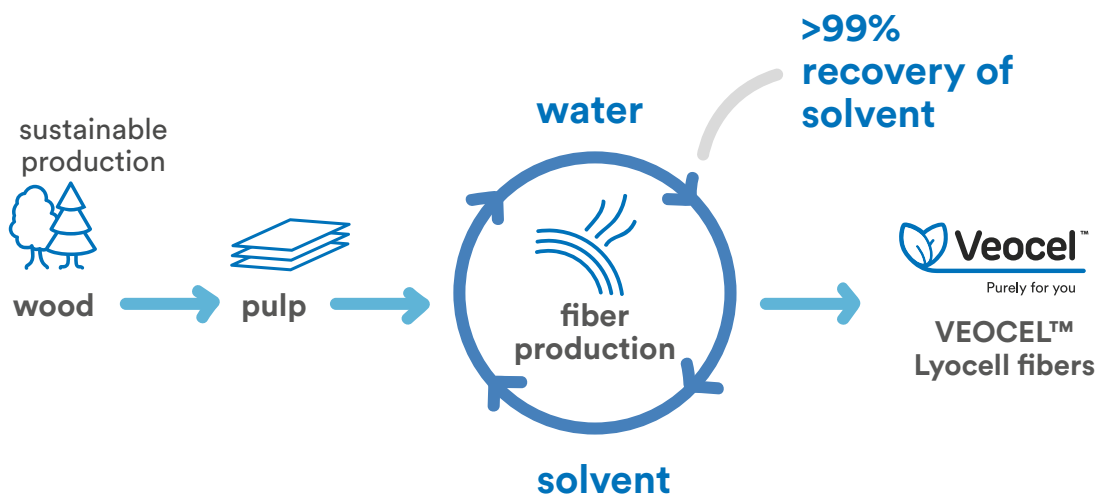


environmentally
sound

Lenzing recognizes the global need to minimize environmental impact by using resources efficiently and optimizing their value. The company seeks to reflect this need by using – and continuously improving – fiber production processes that have a reduced environmental impact. Consequently, Lenzing upholds a portfolio of third-party-reviewed life cycle assessments for its wood-based fibers. Lenzing strives to minimize waste and drives innovations that improve the eco-footprints of its products and its partners along the supply chain.

The production process of VEOCEL™ fibers is characterized by low resource usage. Innovative production technologies, reduced use of fossil fuels, efficient use of natural resources (including water), low emissions and high recovery of process materials all help to decrease pollution of the environment and create a brighter future for the planet. The recovery of co-products in the production process improves material efficiency, reduces waste, and underlines Lenzing's clear focus on sustainable production and handling of all resources. Moreover, as a leader in sustainability Lenzing has set and pursues Science Based Targets¹ for further improvements, such as major reductions in CO₂ emissions.

VEOCEL™ Lyocell production process



sustainable
production

VEOCEL™ Lyocell

VEOCEL™ Lyocell fibers exhibit a smooth surface area, enhancing fabrics with a smooth feel and touch. Their unique physical properties lead to their high tenacity profile, making them strong in both a dry and wet state, and to their natural gentleness on skin, which provides comfort for sensitive skin.

VEOCEL™ Lyocell fibers have gained a commendable reputation for their sustainable closed loop production process, which transforms wood pulp efficiently into cellulosic fibers with high resource efficiency and low ecological impact. This solvent-spinning process reuses the solvent at a recovery rate of more than 99%, as well as recycling water used in the process. The economically viable manufacturing process received the European Award for the Environment from the European Commission in the category “The Technology Award for Sustainable Development” (year 2000).

better for a sustainable environment



eco-responsible
production

VEOCEL™ Specialty Viscose

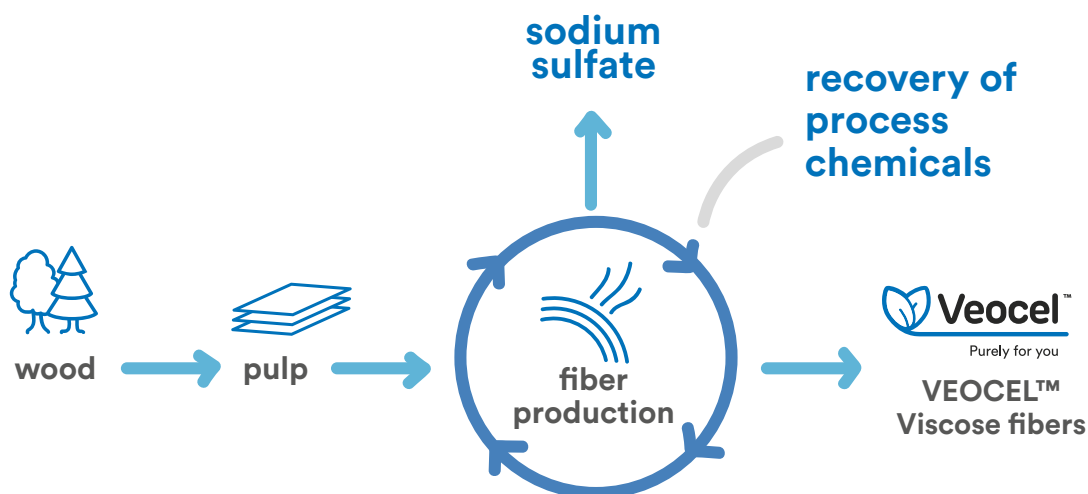
Originating from wood, VEOCEL™ Specialty Viscose absorbs and retains liquid. The fibers are certified as clean and safe, making them ideal for many nonwoven applications – from baby, body and industrial wipes, sanitary pads for adult and feminine uses to baby diapers and other dry and wet wipes. VEOCEL™ Specialty Viscose adds an essence of nature into every nonwoven item, contributing to a better environment for consumers.

VEOCEL™ Specialty Viscose fibers give consumers confidence that the care products they purchase have a low environmental impact. VEOCEL™ Specialty Viscose fibers are produced by an eco-responsible production process in combination with state-of-the-art technologies that are in accordance with high quality standards and advanced analytical quality methods.

Underlining their role as a sustainable material, VEOCEL™ Specialty Viscose fibers are awarded with the EU Ecolabel², a label of environmental excellence recognizing products and services which have a low environmental impact throughout their life cycle: from raw material extraction, to production, distribution and disposal – an integrated process.

Co-products in the VEOCEL™ Specialty Viscose process are recovered for further use, adding to optimized usage of the natural material wood.

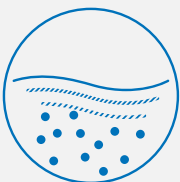
VEOCEL™ Specialty Viscose production process



² Please note that LENZING™ fibers are certified with the EU Ecolabel Standard for textile products. Single use end products are NOT included in this Standard. Single use end products made of LENZING™ fibers can only be labelled or marketed as EU Ecolabel certified if they are certified as compliant with applicable standards, such as the EU Ecolabel Standard for PCPs and AHPs.



better for a sustainable environment



biodegradable

returns to nature

Lenzing uses the natural and renewable raw material wood, transforming sunlight and carbon dioxide in the natural process of photosynthesis. Standard VEOCEL™ fibers have the ability to biodegrade safely and quickly and disappear into the natural environment. Thus, they can fully revert back to nature, thereby closing the natural cycle. Lenzing regularly tests its fibers against stringent external third-party environmental and ecological safety standards and norms, thus complying with laws in the respective area of use. All VEOCEL™ standard fiber types have been certified as biodegradable and compostable under industrial, home, soil, fresh water and marine conditions.

better living for consumers

In addition to their numerous sustainability benefits, VEOCEL™ fibers deliver advanced performance and gentle comfort through a wide range of functional benefits to meet a variety of everyday consumer and end-user needs. This makes them the premium choice for natural care from personal care applications and wipes to absorbent hygiene products. Versatile VEOCEL™ fibers enable consumers to enjoy convenience with a clear conscience by making a good choice for both their skin comfort and the environment.³

better living for consumers





clean and safe

VEOCEL™ fibers are produced using an environmentally responsible production process to ensure they are certified clean and safe. Fiber cleanliness is monitored by internal and external test methods based on industry standards such as ISO or BISFA norms. VEOCEL™ fibers are tested periodically in accordance to the monograph requirements in the absorbent viscose wadding of the European Pharmacopoeia.



smoothness on skin

VEOCEL™ fibers are naturally smooth, enabling fabrics to glide smoothly over sensitive skin. This makes them a very good material choice for wet wipes because owing to the finer surface of the VEOCEL™ fibers they feel more comfortable than fabrics composed of fossil-based synthetic fibers.



handfeel

for VEOCEL™ Lyocell fibers

VEOCEL™ Lyocell fibers add a natural touch to nonwoven fabrics. They contribute to a naturally strong and good, cloth-like handfeel within nonwoven fabrics. This is especially useful in baby wipes to give the user confidence that a thorough cleaning will take place.



gentle on skin

for VEOCEL™ Lyocell fibers

VEOCEL™ Lyocell fibers are naturally smooth and gentle on skin, ensuring comfort for sensitive skin. Their smooth surface area enhances nonwoven fabrics with a gentle touch, making them suitable for beauty, body, and intimate products that come in direct contact with the skin. Blending VEOCEL™ Lyocell fibers with other fibers adds a greater degree of smoothness to fabrics, enhancing their touch to feel even gentler on skin.

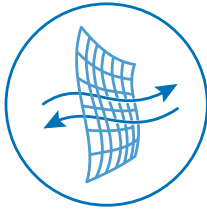


natural wearing comfort

for VEOCEL™ Lyocell fibers

VEOCEL™ Lyocell fibers are naturally smooth, absorbent and give a typical gentle touch to intimate product applications such as feminine pads and adult incontinence products. Adding up these benefits makes VEOCEL™ Lyocell fibers an important contributor to the wearing experience of pads and diapers.

for VEOCEL™ Intimate applications only



contributes to breathability

VEOCEL™ cellulosic fibers naturally manage the transportation of moisture, which enhances hygiene products by helping the body feel pleasantly comfortable. Derived from natural material, the microscopic fibrils of the cellulosic fibers are structured to regulate the absorption and release of moisture. This contributes to more breathable nonwoven products, such as personal care items, to support the body's natural thermal regulation and to feel refreshed.

Suitable for VEOCEL™ Intimate applications

better living for consumers



better functionality for value chain partners

For brands, retailers and other value chain partners, the characteristics of VEOCEL™ fibers, together with their extensive consumer benefits, enable them to be used in a wide variety of products.⁴



blending partners

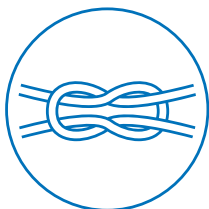
VEOCEL™ cellulosic fibers are versatile and compatible blending partners for a wide range of fibers such as other cellulosic and biobased fibers to create synergies and complement their properties in nonwoven fabrics. VEOCEL™ fibers can be processed in almost all nonwoven technologies, from carding, air-laid and wet-laid, as well as different bonding technologies such as hydroentangling and air-through bonding to needlepunch.

Lenzing can design fibers according to customer needs for different applications and fiber blends, and offers a wide range of specified fiber types in terms of thickness and lengths. Certain properties such as crimp or fibrillation grades can be added in a sustainable, controlled manner adhering to high quality standards.



liquid management

VEOCEL™ cellulosic fibers naturally absorb and release liquid, contributing to effective and efficient liquid management in wipes and hygiene products. The microscopic fibrils of the cellulosic fibers are naturally structured to regulate the absorption and the release of liquid. This leads to a homogeneous distribution of liquid within nonwoven applications – especially needed in dry and wet wipes and absorbent hygiene products – to enhance the convenience and comfort. Effective liquid management also improves the distribution of the lotion within the wet wipes package to keep the wipes moist.



strength

for VEOCEL™ Lyocell fibers

VEOCEL™ Lyocell fibers are versatile and distinguished by their high strength among cellulosic fibers. VEOCEL™ Lyocell fibers can be manufactured to produce lightweight nonwoven fabrics that exhibit high tensile strength in both a dry and wet state.



odor neutral

for VEOCEL™ Lyocell fibers

The neutral odor of VEOCEL™ Lyocell fibers supports the trend towards fragrance-reduced wipes and makes the use of masking agents in nonwoven products unnecessary.



social responsibility: human rights and labor relations

The Lenzing Group is committed to conducting business in a manner that respects the rights and dignity of all people. Lenzing respects the internationally recognized human and labor rights of all employees.

better functionality for value chain partners

label of trust

label of trust



As an industry-first approach, the VEOCEL™ brand has established certification criteria for co-branding, which target the use of 100% cellulosic, and therefore biodegradable, fiber materials, if the brand is featured in beauty, home and personal care products. The aim is to facilitate consumers in identifying sustainable and biodegradable nonwoven products and to enable them to make eco-conscious purchasing decisions.

As an ingredient brand, VEOCEL™ acts as a label of trust, assuring sustainable and biodegradable materials in nonwoven applications and thus offering an alternative solution to fossil-based synthetic materials.

product certificates

The continual rise of environmental awareness has impacted the purchasing behavior of consumers looking for responsible products. Lenzing has received numerous third-party environmental certificates, eco-labels and awards that identify sustainable products of high quality. These certificates prove that VEOCEL™'s eco-responsible fiber production helps to safeguard the environment and that the fibers are in compliance with demanding quality standards.



PEFC™
(Chain of Custody)



FSC®
(Chain of Custody)



The European Ecolabel
(EU Flower)



USDA Certified
Biobased Product



Technology Award for
Sustainable Development



OK biodegradable
MARINE



OK biodegradable
SOIL



OK biodegradable
WATER



OK compost
HOME



OK compost
Industrial



ISEGA (No. 48517)
(Applying to VEOCEL™
Lyocell fibers)



ISEGA (No. 48855)
(Applying to VEOCEL™
Specialty Viscose fibers)



STANDARD 100 by
OEKO-TEX®
(Annex 6, product class I)



Medically Tested -
Tested for Toxins

product certificates



technologies

Lenzing applies a number of innovative technologies in the production of VEOCEL™ fibers to enhance their sustainability and functionality.

Note: specific fiber types within the VEOCEL™ Lyocell and VEOCEL™ Specialty Viscose categories are prefixed with the LENZING™ name.

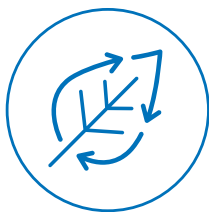


Eco Care technology

for LENZING™ Viscose Eco fibers

VEOCEL™ Specialty Viscose fibers produced with Eco Care technology offer eco-responsibly produced fibers with lower environmental impact than those of generic viscose. These fibers are certified with the EU Ecolabel, which is a label of environmental excellence awarded to products and services meeting high environmental standards throughout their life cycle: from raw material extraction, to production and disposal. According to Higg MSI tools⁵, CO₂ emissions and fossil resource usage are approximately half that of the industry average. The manufacturing of VEOCEL™ Specialty Viscose fibers with Eco Care technology generates up to 50% lower emissions and water impact compared to generic viscose. These fibers are derived from sustainable wood and pulp from certified and controlled sources. They are available with FSC® or PEFC™ certification on request.

Viscose fibers with Eco Care technology are produced without animal-derived materials and enable the consumer to make a sustainable purchasing decision.



Eco Cycle technology

for LENZING™ Lyocell RB fibers

Lenzing's pioneering Eco Cycle technology involves upcycling up to one third of pulp from cotton scraps from garment production, in addition to wood pulp sourced from sustainably managed forests; the combined raw material is transformed to produce new virgin VEOCEL™ Lyocell fibers that are certified clean and safe. By repurposing materials that would otherwise enter the waste stream, Eco Cycle technology contributes to the circular economy. This technology was honored with the Raw Material Achievement Award at IDEA, Miami in 2019.



Eco Disperse technology

for LENZING™ Lyocell Shortcut / Fine Shortcut fibers

Eco Disperse technology enables VEOCEL™ Lyocell fibers within moist toilet tissues and flushable wipes to be flushable and biodegradable. The unique properties of VEOCEL™ Lyocell fibers provide flushable fabrics that are strong in use, yet can naturally disperse and disintegrate after flushing.

* Based on results calculated using the Higg Materials Sustainability Index (Higg MSI) tools provided by the Sustainable Apparel Coalition. The Higg MSI tools assess impacts of materials from cradle-to-gate for a finished material (e.g. to the point at which the materials are ready to be assembled into a product). However, these figures only show impacts from cradle to fiber production gate.



Eco Color technology

for LENZING™ Viscose Color / Black fibers

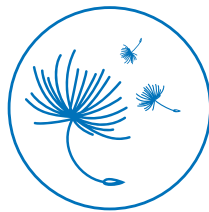
VEOCEL™ Specialty Viscose fibers produced with Eco Color technology offer color vibrancy and design flexibility for nonwoven products. This eco-responsible technology provides efficient ecological advantages, substituting for the resource-intensive conventional dyeing process. Eco Color technology implements the process whereby color pigments are deeply embedded (spun-dyed) into viscose fibers. Water and energy are used sparingly throughout the production process, from fiber to fabric, resulting in lower environmental impact.



Eco Lace technology

For LENZING™ Lyocell Shortcut / Fine Shortcut fibers

Eco Lace technology allows producers to adjust the strength of wipes made from VEOCEL™ Lyocell fibers in a blend with wood pulp. The production process is similar to paper making, with the difference that in the end high pressure water jets are applied to entangle the individual fibers together, giving the fabric its strength. Wet wipes produced using this technology are characterized by strong resistance to stretching in both directions – such as when pulled out of a dispenser. Being composed of VEOCEL™ Lyocell fibers and wood pulp, these wipes have high absorbency and are fully biodegradable. Moreover, they are free from fossil-based synthetic fibers as well as adhesives, making them a sustainable choice for eco-conscious consumers.



Micro technology

for LENZING™ Lyocell Micro fibers

Among the VEOCEL™ Lyocell fiber portfolio, Micro technology brings an even finer quality of natural smoothness combined with high strength to cellulosic fibers. VEOCEL™ Lyocell fibers using Micro technology are fine cellulosic fibers from renewable wood sources, producing lightweight fabrics with high opacity and great strength.



Translucency technology

for LENZING™ Lyocell Skin / Fine Skin fibers

VEOCEL™ Lyocell fibers of botanic origin using Translucency technology offer consumers a naturally smooth and more translucent facial sheet mask. Translucency technology implements a sustainable production process that periodically tests VEOCEL™ Lyocell fibers for cleanliness to ensure certified clean and safe fibers. Using Translucency technology, VEOCEL™ Lyocell fibers become translucent in a wet state, enabling users to pamper themselves with a more translucent beauty treatment.

applications

The qualities of VEOCEL™ fibers – particularly their absorbency and their gentleness on skin – make them suitable for a wide range of applications. Thanks to their botanic origin, eco-responsible production and biodegradability, they offer a more sustainable alternative to fossil-based fibers for these uses.

applications



VEOCEL™ Beauty

Beauty products providing gentle care to pamper the user's skin, such as facial sheet masks, facial cleansing wipes, deodorant wipes.



VEOCEL™ Body

Products providing reliable care for the body, such as moist toilet tissue, baby wipes, intimate wipes, hand sanitizing wipes, bathing gloves.



VEOCEL™ Intimate

Absorbent hygiene products for the most intimate parts of the body, such as sanitary pads, panty liners, adult diapers.



VEOCEL™ Surface

Absorbent wipes – both wet and dry – in a variety of colors, providing efficient liquid management for home, institutional and industrial use.

selected applications for a sustainable lifestyle



facial sheet masks using LENZING™ Lyocell Skin fibers with Translucency technology

These fibers produce a naturally smooth and more translucent facial sheet mask. Strong in use and gentle on skin, they are certified clean and safe.



moist toilet tissues (MTT) using LENZING™ Lyocell Shortcut fibers with Eco Disperse technology

Eco Disperse technology enables these fibers to naturally disintegrate and be biodegradable after flushing, so they can easily be disposed of at the point of use.



baby wipes using VEOCEL™ Lyocell fibers

Gentle on skin yet with high tensile strength, VEOCEL™ Lyocell fibers within baby wipes are certified clean and safe with a good handfeel to give confidence in thorough cleaning.



absorbent hygiene products using VEOCEL™ Lyocell fibers

VEOCEL™ Lyocell fibers naturally manage the transportation of moisture, contributing to breathability in absorbent hygiene products and supporting the body's natural thermal regulation to keep the skin feeling refreshed.



wet and dry wipes with LENZING™ Viscose Color fibers

These colorful cellulosic fibers of botanic origin absorb liquid efficiently, enhancing both home and industrial care of surfaces.



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contact for further information

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Innovative by nature

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