



 **Tencel**™

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Nature. Future. Us.



Introduction

**TENCEL™ weaves
together the story of
nature and people.¹**

Our respect for both people and
planet gives us a constant drive to
innovate and inspire.²

We believe in the power of
collaboration to change our industry
and create a more sustainable future.³

¹ EU Ecolabel for textile products (license no. AT/016/001)

² Lenzing was awarded platinum status from EcoVadis for three consecutive years for efforts in transparency, sustainability reports, and work related to the environment, ethics, and human rights.

³ Lenzing has been part of the ZDHC MMCF Task Team since 2018, part of our ongoing commitment to lowering the environmental impact of the fiber industry. Lenzing was the first cellulosic fiber producer to set concrete scientifically verified Science-based targets aiming for a reduction of greenhouse gas emissions.

What is TENCEL™?

TENCEL™ branded fibers are award winning, low-environmental-impact, high-comfort materials.⁴

TENCEL™ branded lyocell and modal fibers are derived from wood, a natural and renewable raw material carefully sourced from responsibly managed forests.⁵ Soft to touch and light to wear,⁶ they can break down and compost at the end of their life cycle.⁷

TENCEL™ Lyocell and Modal fibers are suitable for a wide range of applications including ready-to-wear, activewear, underwear, denim, footwear and home & interiors. With a wide range of fiber types and blending options, they offer an almost endless variety of product designs and functions.

⁴TENCEL™ Lyocell and Modal fibers are made with at least 50% less carbon emissions and water consumption compared to generic lyocell and modal. Results based on LCA standards (ISO 14040/44) and available via Higg MSI (Version 3.7)

⁵TENCEL™ Lyocell and Modal fibers are USDA Certified Biobased Products and contain 100% USDA Certified Biobased Content.

⁶Studies using the Tactile Sensation Analyzer (TSA) and Fabric Touch Tester (FTT) as measuring devices have confirmed the softness of fabrics made of TENCEL™ Lyocell and Modal fibers.

⁷Tests have been performed on LENZING™ Lyocell and Modal standard fibers and fibers are certified by TÜV AUSTRIA



History

The creation of TENCEL™ branded fibers was a historical breakthrough in the production of sustainable materials.⁸

Since 1938, leading global wood-based fiber manufacturer Lenzing has been researching and innovating from a small town in Austria.

This led to the creation of modal in the early 1950s and further innovations that saw lyocell created in the 1990s in various locations.

⁸ The results were calculated according to LCA standards (ISO 14040/44) and are made available via the Higg Materials Sustainability Index (MSI) by the Sustainable Apparel Coalition (Version 3.7)





Our climate-positive future

With TENCEL™, the Lenzing Group is committed to supporting a climate-positive future for the fashion industry by continuing to innovate and improve production to be as resource-efficient as possible⁹

We collaborate with our partners to achieve industry and sustainability best practices to reduce the industry's overall CO₂ footprint and drive innovation along the textile value chain.

Lenzing was the first cellulosic fiber producer to set concrete scientifically verified Science-based targets aiming for a reduction of greenhouse gas emissions.

Since 2021, Lenzing has been awarded a triple-A score from the global environmental non-profit CDP for environmental leadership in climate action, water security and forestry.

⁹ Annual Sustainability Report of the Lenzing Group 2023; Transition plan for climate change mitigation; p. 74-78



The life cycle of TENCEL™ fibers

TENCEL™ fibers are derived from wood, a natural and renewable raw material carefully sourced from responsibly managed forests.

The wood used as raw material for all TENCEL™ Lyocell and Modal fibers is sourced from controlled or certified origins meeting FSC® or PEFC standards¹⁰ following the stringent guidelines of the Lenzing Wood and Pulp Policy.

Our wood and wood pulp are sourced from semi-natural forests and plantations.

In recognition of our careful sourcing practices that help protect ancient and endangered forests, since 2020, Lenzing has received the highest ranking in the not-for-profit Canopy's Hot Button Report: a Dark Green Shirt.

TENCEL™ Lyocell and Modal fibers are certified biodegradable and compostable.¹¹

Studies prove they biodegrade in soil, freshwater and marine environments and are compostable under home and industrial conditions.¹²

¹⁰ FSC® (FSC-C041246) or PEFC (PEFC/06-33-92) certification.

¹¹ Tests have been performed on LENZING™ Lyocell and Modal standard fibers and fibers are certified by TÜV AUSTRIA.

¹² LENZING™ Lyocell and Modal standard fibers are certified by TÜV AUSTRIA as biodegradable in soil, freshwater and marine environments, and compostable under home and industrial conditions.

Resource-efficient production with a lower impact

Over decades, we have continuously refined our production processes by maximizing resource efficiency to minimize environmental impact.

How it works:

TENCEL™ Lyocell and Modal fibers are derived from cellulose, the key building block of wood.

TENCEL™ Lyocell fibers are made with an innovative closed loop production process. Wood pulp is dissolved and the solution is pumped through spinnerets to form a filament that is cut into staple fibers which are washed, dried, opened and pressed into bales. More than 99.8% of the solvent is recovered and fed back into the loop, resulting in close-to zero wastage.

TENCEL™ Modal fibers are produced in a modified viscose process that uses resource-efficient technology with high recovery rates of chemicals. The cellulose in the Modal process needs to be chemically altered before it is dissolved, filtered, spun and cut into staple fibers. The final fiber product is regenerated pure cellulose without chemical modification. According to the Higg Materials Sustainability Index (Higg MSI), TENCEL™ Modal has a significantly lower environmental impact than generic modal in the categories of abiotic depletion of fossil fuels (up to 68%), global warming (up to 71%), water consumption (up to 68%) and eutrophication (up to 35%).¹³

TENCEL™ Lyocell and Modal fibers are certified with the widely recognized EU Ecolabel for textile products in recognition of high environmental standards.¹⁴

¹³ The results were calculated according to LCA standards (ISO 14040/44) and are made available via the Higg Materials Sustainability Index (MSI) by the Sustainable Apparel Coalition (Version 3.7)

¹⁴ EU Ecolabel for textile products (license no. AT/016/001)





Accelerating innovative technology

At TENCEL™, innovation is a key part of our mission. We're working for a more sustainable future by constantly researching and refining our processes, collaborating with academics, start-ups and other textile manufacturers to move the industry forward.

Micro technology

Micro technology enables the production of the finest fiber within our TENCEL™ portfolio, giving textile products notable softness and lightness.

Color related technology for TENCEL™ Modal fibers

During production, black or indigo color pigments are incorporated into TENCEL™ Modal fibers to improve resource efficiency in textile dyeing. Our Indigo Colour technology saves more than 99% of the water and more than 80% of the chemicals used to dye denim.¹⁵

Tracing technology

TENCEL™ Lyocell and Modal fibers are identifiable via a molecular marker. This special identification technology ensures the authenticity and traceability of TENCEL™ fibers even after they have been turned into textile products.

Filament technology

TENCEL™ Luxe filaments are extremely fine and can be woven into incredibly smooth, fluid and lightweight fabrics. They can be blended with other noble fibers to produce supple denims, jerseys and satins.

¹⁵ Compared to three conventional denim dyeing methods

We've got the certifications, to make the choice easy for you

As a pioneer of innovations in responsible sourcing and production, the TENCEL™ brand prides itself on achieving recognition and certifications. This is to make the right choice easy for every TENCEL™ customer.



Certifications and ratings awarded to Lenzing

FSC/PEFC

The wood used as raw material for all TENCEL™ Lyocell and Modal fibers is sourced from controlled or certified origins meeting FSC® or PEFC standards¹⁶ following the stringent guidelines of the Lenzing Wood and Pulp Policy.

CDP

The Lenzing Group is one of only ten companies with a triple “A” score from environmental non-profit CDP in 2023. The score recognizes performance across corporate transparency, climate change, forests and water security.

EcoVadis

Under EcoVadis’ CSR rating, Lenzing has been awarded platinum status three years running for its efforts in transparency, sustainability reports, and work related to the environment, ethics, and human rights. This places Lenzing in the top 1% of companies in its sector for sustainability.

ZDHC Roadmap to zero

Lenzing has been part of the ZDHC MMCF Task Team since 2018, addressing wastewater, sludge, solid waste, and air emissions as part of our ongoing commitment to lowering the environmental impact of the fiber industry.

ISO standards

TENCEL™ fiber production has been certified to comply with modern quality, environmental, health and safety standards in accordance with ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.

Canopy

The Lenzing Group has consistently been awarded a Dark Green Shirt - the highest designation - by the not-for-profit Canopy for its responsible wood and pulp sourcing and recognition for protecting ancient and endangered forests.

Science-based targets

Lenzing was the first cellulosic fiber producer to set concrete scientifically verified Science-based targets aiming for a reduction of greenhouse gas emissions.

¹⁶ FSC® (FSC-C041246) or PEFC (PEFC/06-33-92) certification.



Certifications and ratings awarded to TENCEL™ fibers

EU Ecolabel

TENCEL™ fibers have been awarded the EU Ecolabel for environmental excellence by the European Commission. This signifies that our products meet high environmental standards throughout their life cycle. This award is independently assessed for compliance with strict ecological and performance criteria.¹⁷

OEKO-TEX® STANDARD 100

TENCEL™ fibers have been certified as harmless to human health after testing for numerous regulated and non-regulated harmful substances according to OEKO-TEX® STANDARD 100.¹⁸

Biodegradable and compostable

TENCEL™ fibers have been certified by TÜV AUSTRIA as biodegradable and compostable under specified conditions.¹⁹

USDA Certified Biobased Products

Biobased products are created on the basis of renewable resources and offer an alternative to products made from fossil fuels. TENCEL™ fibers are recognized by the USDA BioPreferred® program. They are USDA Certified Biobased Products and contain 100% USDA Certified Biobased Content.

¹⁷ EU Ecolabel for textile products (license no. AT/016/001).

¹⁸ OEKO-TEX® STANDARD 100. (Certification number 74683; test institute OETI).

For details refer to: www.oeko-tex.com

¹⁹ LENZING™ Lyocell and Modal standard fibers are certified by TÜV AUSTRIA as biodegradable in soil, freshwater and marine environments, and compostable under home and industrial conditions.

Soft and smooth fibers that offer superior performance

TENCEL™ Lyocell and Modal fibers make fabrics notably softer, so they are pleasant to touch.

Due to their structure, TENCEL™ Lyocell and Modal fibers absorb and release moisture. When used in a product, these moisture control properties support a natural dry feeling and increase the wearer's thermal comfort.



Soft and smooth fibers that offer superior performance



TENCEL™ Lyocell and Modal fibers enable versatility in design and function. This makes them a key ingredient for a wide range of applications including:

Ready-to-wear

TENCEL™ fibers can be woven into light to bottom-weight materials with a subtle sheen or matte finish for dresses, shirts, trousers and jackets. Supple and flexible, they are also perfect for knitted materials like T-shirts, hoodies and sweaters.

Denim

TENCEL™ fibers are strong and versatile. Our modal fibers produced with Indigo Colour technology are perfect for denim jeans, jackets, shirts and shorts.

Intimate apparel

Effective moisture control properties ensure TENCEL™ fibers support a natural dry feeling while being soft and smooth to touch. They are perfect for knitted and woven next-to-skin fabrications for products like singlets, bras and underwear.

Activewear

Ideal for yoga pants, running shorts, singlets and hoodies, TENCEL™ fibers support a natural dry feeling through moisture control.

Footwear

Since TENCEL™ fibers support a natural dry feeling through moisture control and have a high tenacity profile (among cellulosic fibers) they are perfect for shoes like sneakers, sandals, ballet flats and heels.

Home textile products

Naturally soft and smooth to touch, TENCEL™ fibers can be used in a wide range of home textile products including bedding, towels, sheets, pillowcases, blankets, tea towels, tablecloths, upholstery, carpets and curtains.



Soft and smooth fibers that offer superior performance



Naturally soft and smooth to touch, TENCEL™ Lyocell and Modal fibers can be blended with materials like cotton, linen and polyester for added drape and a subtle sheen. With the ability to support rich colors in fabrics and versatility in design and function, blending TENCEL™ fibers with any material is sure to bring enhanced performance.

The performance benefits of TENCEL™ fibers at a glance

TENCEL™ Lyocell and Modal fibers

- Support a natural dry feeling through moisture control
- Are naturally soft and smooth to the touch
- Support rich colors in fabrics
- Have high tenacity among cellulosic fibers
- Enable versatility in design and function

TENCEL™ Lyocell fibers

- Are unfavorable to odor-causing bacteria (markets except China)
- Enable a subtle sheen in fabrics

TENCEL™ Modal fibers

- Support long-lasting softness

To go far, go together

On our mission to transform the textile industry, TENCEL™ works to connect and educate stakeholders throughout the supply chain. We know collaboration is the only way to achieve a sustainable fashion industry and seek out partners who are committed to realizing this too.

To go far, go together



To go far, go together



TENCEL™ is a globally recognised and trusted brand name. As a partner, you can use TENCEL™ to elevate your brand.

To use the TENCEL™ brand name you must apply for a product license and marketing license. This will give you the flexibility to choose the TENCEL™ trademark and branding materials best suited to your needs. Register here:



Join us on our mission towards a climate-positive textile industry
tencel.com

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