

# TENCEL™ Lyocell

TENCEL™ Lyocell fibers are cellulosic fibers derived from the **natural raw material wood**. They are known for their **high tenacity profile and high moisture uptake**, offering a higher perceived thermal comfort level to the wearer.

TENCEL™ Lyocell is also known for its innovative **closed loop production process**. Wood pulp is transformed into cellulosic fibers, while more than **99.8% of the solvent is recovered** and fed back into the loop, resulting in **close-to-zero wastage**.

## Dedicated to responsible sourcing

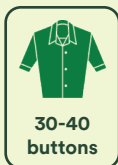
TENCEL™ Lyocell fibers are made from wood, a natural and renewable raw material carefully sourced from responsibly managed forests. Lenzing's fibers are made from dissolving wood pulp which is produced from various wood species (e.g. eucalyptus, spruce, beech, maple, southern pine, birch and acacia). The wood taken from nature is **purposefully balanced with forest growth rates**, to ensure the continued availability of this valuable resource.

The wood used as raw material for all TENCEL™ Lyocell fibers is sourced from **certified (FSC® or PEFC certification<sup>1</sup>) or controlled wood sources**, following the stringent guidelines of the Lenzing Wood and Pulp Policy.



Lenzing also promotes conservation solutions to protect ancient and endangered forests. In 2017, Lenzing was the first cellulose fiber producer to complete the verification audit of the CanopyStyle Initiative. In 2023, Lenzing's efforts were again recognized with the **"Dark Green Shirt"**, the best ranking in the **Canopy Hot Button Report**.<sup>2</sup>

### CanopyStyle Info Box



30-40  
buttons



25-29  
buttons



20-24  
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15-19  
buttons



10-14  
buttons



5-9  
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0-4  
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The CanopyStyle Initiative is led by environmental not-for-profit Canopy, which is working to protect the world's ancient and endangered forests. This initiative collaborates with brands to implement sourcing policies that ensure ancient and endangered forests do not end up in textiles. CanopyStyle includes 500+ brand partners committed to forest conservation.

## EU Ecolabel certification for environmental excellence



EU Ecolabel : AT/016/001

TENCEL™ Lyocell fibers are produced in a **closed loop process**, which transforms wood pulp into cellulosic fibers. The process **recovers 99.8% of the solvent**, resulting in **close-to-zero wastage**. The use of lyocell fiber offers great advantages from an environmental perspective when compared with other cellulosic fibers. The lyocell process is much less resource-intensive than the viscose process, and leads to a significant reduction in chemical use due to conversion of pulp into fiber in a closed loop process.

TENCEL™ Lyocell fibers are **certified with the widely recognized EU Ecolabel** for textile products.<sup>3</sup> This label is awarded to products that **have a reduced environmental impact across multiple stages of the product life cycle**. Key criteria for evaluation include production processes limiting the usage of substances harmful to human health or the environment, and minimizing key environmental impacts throughout their entire life cycle.

<sup>1</sup> FSC® (FSC-C041246) or PEFC (PEFC/06-33-92) certification.

<sup>2</sup> Canopy Hot Button Report (<https://hotbutton.canopyplanet.org/company/lenzing/>)

<sup>3</sup> EU Ecolabel for textile products (license no. AT/016/001)

## Versatile fibers for diverse applications

With their wide range of fiber types and blending options, TENCEL™ Lyocell fibers offer an almost endless **variety of product designs and functions** for a huge variety of different applications. Different finishings and constructions ranging from cool and silky touch to peach skin effects can be achieved.

Specific fiber portfolio under TENCEL™ brand	Application areas	
<b>LENZING™ Lyocell</b> <ul style="list-style-type: none"> <li>• Available in a variety of titers and cut-lengths</li> <li>• Best for woven applications or cool and silky knitted fabrics</li> <li>• Suitable for all spinning systems</li> </ul>	<ul style="list-style-type: none"> <li>• Woven apparel</li> <li>• Denim</li> <li>• Workwear</li> </ul>	<ul style="list-style-type: none"> <li>• Home textiles: bed linen, carpets and rugs, mattress ticking, upholstery, curtains</li> </ul>
<b>LENZING™ Lyocell LF and LENZING™ Lyocell LFH</b> <ul style="list-style-type: none"> <li>• Low fibrillation fiber types</li> <li>• Give a warm and cozy handfeel</li> <li>• Recommended for knitted applications</li> </ul>	<ul style="list-style-type: none"> <li>• Knitted apparel: shirts and blouses</li> <li>• Innerwear</li> <li>• Ready-to-wear: sweaters</li> </ul>	<ul style="list-style-type: none"> <li>• Home textiles: bed linen, towels and bath mats, upholstery, curtains</li> </ul>
<b>LENZING™ Lyocell A100</b> <ul style="list-style-type: none"> <li>• Non-fibrillating fiber type</li> <li>• Very intense and bright colors</li> </ul>	<ul style="list-style-type: none"> <li>• Active wear</li> <li>• Footwear</li> <li>• Innerwear</li> <li>• Workwear</li> </ul>	<ul style="list-style-type: none"> <li>• Home textiles: upholstery, carpets and rugs</li> </ul>
<b>LENZING™ Lyocell Fill</b> <ul style="list-style-type: none"> <li>• Siliconized fiber for fillings</li> <li>• Suitable for carding, fiber balls and blow-fill</li> </ul>	<ul style="list-style-type: none"> <li>• Outerwear</li> </ul>	<ul style="list-style-type: none"> <li>• Home textiles: pillows, comforters, furniture fillings</li> </ul>
<b>LENZING™ Lyocell Matte</b> <ul style="list-style-type: none"> <li>• Reduce the shine of conventionally indigo-dyed denim applications</li> <li>• Give a duller appearance in the finished garment</li> </ul>	<ul style="list-style-type: none"> <li>• Denim</li> </ul>	
<b>LENZING™ Lyocell Coarse Denier</b> <ul style="list-style-type: none"> <li>• Coarsest Lyocell fiber with 6.7 dtex</li> <li>• Suitable for coarser yarns</li> </ul>		<ul style="list-style-type: none"> <li>• Home textiles: carpets and rugs</li> </ul>

## TENCEL™ Lyocell with Micro technology

TENCEL™ Lyocell fibers are also available with Micro technology.

The finer the cellulosic fibers, the softer the textiles. Micro technology enables the production of the finest **fibers within our TENCEL™ portfolio<sup>4</sup>**, giving textile products **notable softness and lightness**. Therefore, fabrics made with TENCEL™ fibers produced with Micro technology stand out for their natural comfort and enjoyable sensation.



<sup>4</sup> Specific fiber types include LENZING™ Lyocell Micro, LENZING™ Lyocell Micro A100, LENZING™ Lyocell Micro LF



## Building trust through transparency

### PROVE

**Fiber identification** technology ensures fibers are verifiable and traceable from fiber to garment, empowering customers to make informed purchasing decisions.

### SHARE

**Sharing our fiber and sustainability credentials<sup>5</sup>** openly provides customers and consumers with credible, data-supported product information.

### TRACK

**Custom-built traceability platform**, supported by a third party<sup>6</sup>, provides brands with full visibility from fiber to retail, achieving radical transparency and ensuring the authenticity and provenance of textiles across the supply chain.

### PARTNER

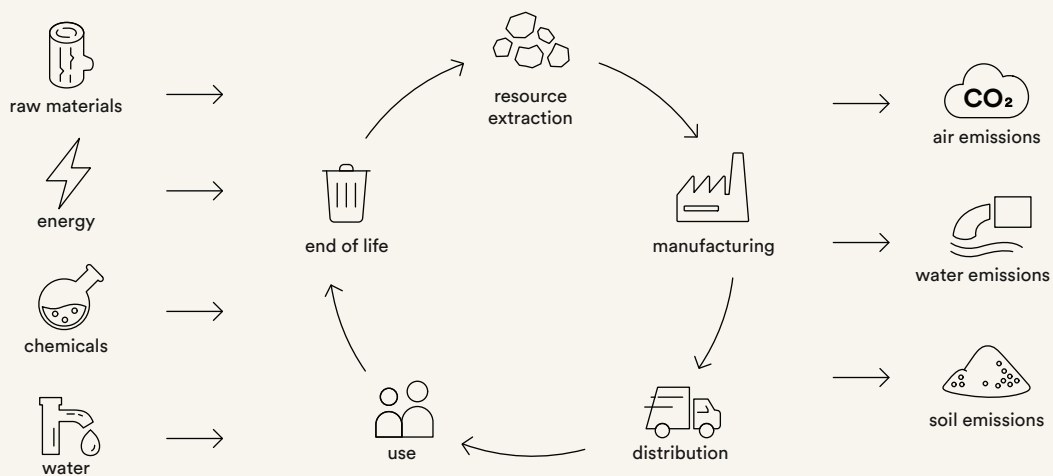
**E-Branding Service** provides a centralized platform with one-stop solutions for certification and licensing, enabling brands to leverage our trademarks and reputation to communicate their sustainability initiatives.

## Life cycle assessment

Life Cycle Assessment (LCA) is a systematic and comprehensive method for evaluating the potential environmental impact of products throughout their life cycle. The cradle-to-gate assessment includes all stages of production, from the extraction of raw materials through processing, manufacturing, and transportation, up to the point of delivery to the customer.

The LCA takes into account two different aspects: materials entering the product system's boundary (raw materials, energy, chemicals and water) as well as the environmental impact that is created (air, water and soil emissions). Potential environmental impacts are calculated per kg of TENCEL™ Lyocell fiber and are expressed in different categories, such as Global Warming, Eutrophication or Abiotic Resource Depletion.

Lenzing uses LCA to identify areas for environmental optimization of products not only during fiber manufacturing but also within the supply chain. By conducting cradle-to-gate LCA for TENCEL™ Lyocell fibers, potential environmental impacts are discovered for all upstream and core process activities until the fiber leaves the factory gate.



<sup>5</sup> Refer to <https://www.tencel.com/claims> and Lenzing's Sustainability Report <https://reports.lenzing.com/annual-and-sustainability-report/2023>

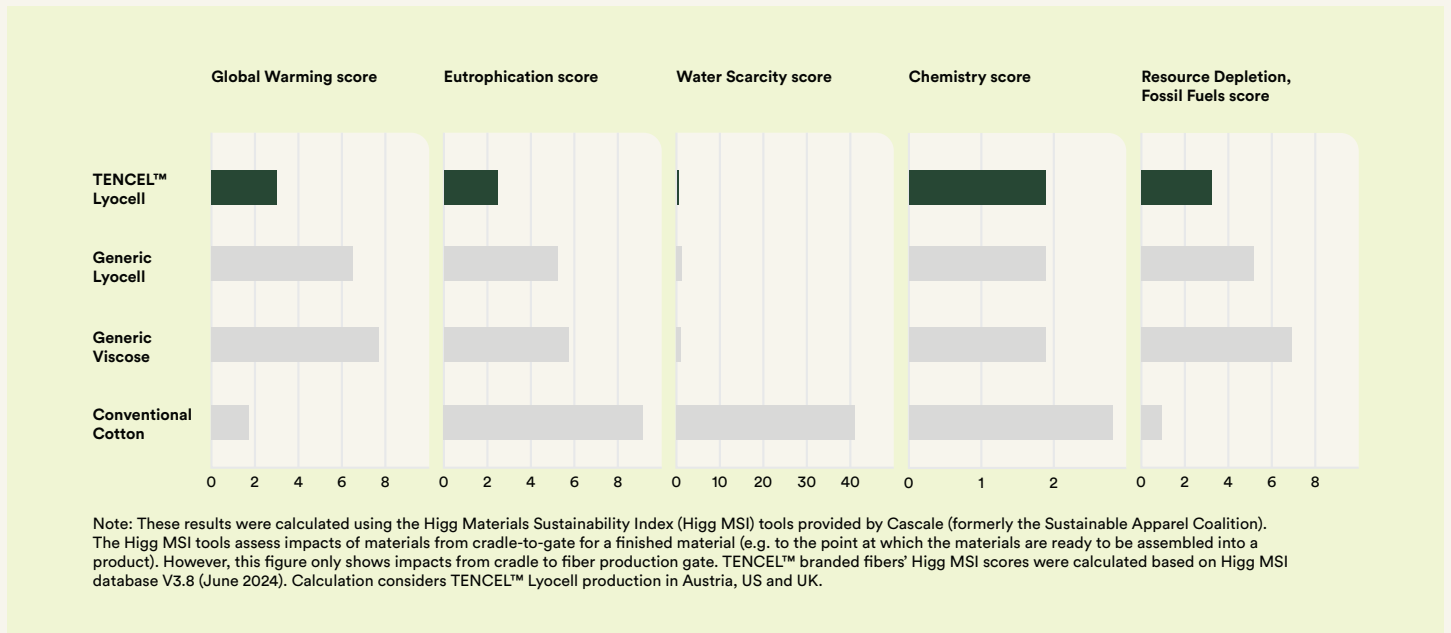
<sup>6</sup> For more information, refer to <https://textilegenesis.com>

## Higg MSI of TENCEL™ Lyocell

The Higg Materials Sustainability Index<sup>7</sup> (Higg MSI) uses an LCA to evaluate environmental impacts of materials in the textile industry. The Higg MSI reports the category indicators of Global Warming, Eutrophication, Water Scarcity, Abiotic Depletion of Fossil Resources, and Chemistry per functional unit (1 kg of fiber) and additionally provides the two inventory metrics of Water Consumption and Biogenic Carbon Content.



	TENCEL™ Lyocell
<b>Global Warming</b>	3.16 kg CO <sub>2</sub> eq.
<b>Eutrophication</b>	0.002 kg PO <sub>4</sub> <sup>3-</sup> eq.
<b>Water Scarcity</b>	0.765 m <sup>3</sup> world eq.
<b>Chemistry</b>	4 units
<b>Abiotic Resource Depletion, Fossil Fuels</b>	45.3 MJ
<b>Water Consumption</b>	47.9 kg
<b>Biogenic Carbon Content</b>	0.39 kg C   1.4 kg CO <sub>2</sub>



<sup>7</sup> Results based on LCA standards (ISO 14040/44) and available via Higg MSI (Version 3.8)