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Date October 27, 2021

World-renowned marine research institute confirms biodegradability of LENZING™ fibers

Sub.: Results of experiments conducted by the University of California's prestigious Scripps Institution of Oceanography in San Diego provide further scientific proof that LENZING™ fibers offer an effective substitute to synthetic fibers that are part of the pressing problem of plastic pollution in our oceans.

Lenzing/San Diego – The Lenzing Group, a world-leading provider of wood-based specialty fibers, has received further scientific proof of the biodegradability of its fibers. In a study published in October 2021¹, scientists from the prestigious academic research institute Scripps Institution of Oceanography (SIO) at the University of California, San Diego confirmed that wood-based cellulosic fibers biodegrade in the ocean within a short period of time at the end of their life cycle, making them a better alternative to fossil-based fibers. The research was the result of an independent project trying to understand the “end-of-life” scenarios for textiles and nonwovens discarded in the environment.

SIO has a global reputation for being one of the oldest, largest and most important marine research centers worldwide. In this study, SIO compared the degradation processes of nonwovens made from fossil-based synthetic materials such as polyester with those of cellulosic materials such as Lenzing's wood-based lyocell, modal and viscose fibers in specific scenarios – under various real oceanic conditions and controlled aquaria conditions. The results of these experiments are striking: while wood-based cellulosic fibers fully biodegraded within 30 days, the fossil-based fibers tested were practically unchanged after more than 200 days.

“Our business model is one of a circular economy. We take wood from sustainable forestry and use a highly efficient system of processing all raw materials to produce fibers that are able to return to the ecosystem at the end of their life cycle”, comments Robert van de Kerkhof, Member of the Managing Board at Lenzing Group. “The textile and nonwoven industries have to change. Our goal is to raise widespread awareness of major

¹ <https://www.sciencedirect.com/science/article/pii/S0048969721031314>

challenges such as plastic pollution and persuade the industry to make the transition to wood-based, biodegradable TENCEL™, LENZING™ ECOVERO™ and VEOCEL™ fibers”, says van de Kerkhof.

The biodegradability of LENZING™ fibers was also tested in the laboratory of Organic Waste Systems (OWS) in Belgium – one of the world's leading companies in biodegradability and compostability testing – which showed data confirmed by those found with the real-life measurements at Scripps. The OWS assessment was conducted in accordance with applicable international standards and reflects relevant natural and artificial conditions in which biodegradation can occur. Certificates from the certification organization TÜV Austria show that LENZING™ fibers rapidly biodegrade in all test environments (soil, industrial composting, home composting, fresh water and marine water) within the time frames set by the applicable standards.

Tailwind from legislation

Environmental pollution from plastics is an important problem of our time, which may affect many generations to come. The environmental damage caused by the fashion industry as a result of fast fashion business models is particularly extreme. The use of fossil-based, synthetic fibers in textiles has approximately doubled in the last 20 years, which is a trend that is expected to continue. More than half of all textiles around the world currently contain polyester and this fraction is set to rise according to a report from the non-profit organization Changing Markets Foundation².

Consequently, Lenzing also welcomes the EU's targeted measures to combat plastic waste in general, such as those relating to the single-use plastic directive (EU) 2019/904³. In its recently adopted guidelines for implementing the directive, the EU Commission stipulates the specific products that fall under this category, which is a well-needed effort to provide clarity to the EU member states for their joint campaign against environmental pollution from plastic waste. Lenzing's wood-based, biodegradable cellulosic fibers can be part of a sustainable and innovative solution to this man-made problem that will continue to grow. As of July 2021, the single-use plastic directive sets out standardized labelling requirements for certain products, either on packaging or on the products themselves, which include plastic-based feminine hygiene products and wet wipes for body care or household use. This is a start to tackle the problem: educate the consumer and offer alternative materials with better circularity.

Photo download:

<https://mediadb.lenzing.com/pinaccess/showpin.do?pinCode=8sGZaQGMg0rV>

PIN: 8sGZaQGMg0rV

² http://changingmarkets.org/wp-content/uploads/2021/01/FOSSIL-FASHION_Web-compressed.pdf

³ Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment

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About the Lenzing Group

The Lenzing Group stands for ecologically responsible production of specialty fibers made from the renewable raw material wood. As an innovation leader, Lenzing is a partner of global textile and nonwoven manufacturers and drives many new technological developments.

The Lenzing Group's high-quality fibers form the basis for a variety of textile applications ranging from elegant ladies clothing to versatile denims and high-performance sports clothing. Due to their consistent high quality, their biodegradability and compostability Lenzing fibers are also highly suitable for hygiene products and agricultural applications.

The business model of the Lenzing Group goes far beyond that of a traditional fiber producer. Together with its customers and partners, Lenzing develops innovative products along the value chain, creating added value for consumers. The Lenzing Group strives for the efficient utilization and processing of all raw materials and offers solutions to help redirect the textile sector towards a closed-loop economy. In order to reduce the speed of global warming and to accomplish the targets of the Paris Climate Agreement and the "Green Deal" of the EU Commission, Lenzing has a clear vision: namely to make a zero-carbon future come true.

Key Facts & Figures Lenzing Group 2020

Revenue: EUR 1,63 bn

Nameplate capacity: 1,045,000 tons

Employees: 7,358

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