



Recycling mixed-fibre garments becomes a reality: RadiciGroup, The LYCRA Company and Triumph take circular fashion a step forward

The process, which is both economically and environmentally sustainable, has enabled the production of an underwear set made from 100% recycled nylon and LYCRA® fibre in a closed-loop system.

*Bergamo, 15 December 2025 – **Recycling of garments made from different types of fibres has always represented a major challenge for the textile industry.*** In the absence of a chemical or mechanical process capable of separating and recovering the individual materials, these garments have so far become waste destined for incineration or landfill.

Today, however, **Radici InNova**, the **RadiciGroup** division dedicated to research and innovation, has developed an **innovative recycling process** based on **selective dissolution technology**, capable of treating **mixed textile waste** — such as swimwear, tights and leggings — and recovering both **nylon and LYCRA®** fibre, making them available again for the production of new garments.

The collaboration with **The LYCRA Company** and **Triumph, internationally-renowned lingerie brand**, has made it possible to validate the process by using the recovered fibres to create a **100% recycled lingerie set**.

The process, **internationally patented**, uses **non-toxic, non-flammable and environmentally compatible solvents**. It can be applied to the main types of nylon (PA6 and PA66) and is economically sustainable because it allows for the recovery of both **nylon and LYCRA®** fibre, regardless of their respective proportions in the fabric, as well as the **solvent itself**.

“Thanks to this project, textile recycling enters a new dimension, demonstrating for the first time that it is possible to recover fibers from mixed fabrics and reuse them to produce new garments. This is an unprecedented innovation that opens up revolutionary development opportunities for the textile industry. As RadiciGroup, we are proud to have conceived and achieved this important milestone together with our partners, and we are ready to take the next steps,” said **Stefano Alini, CEO of Radici InNova**.

*“This innovative project highlights the role that elastane can have in helping to advance circularity in the apparel industry. Working closely with Radici InNova and Triumph, **The LYCRA Company** has demonstrated that **LYCRA®** fibres can retain their renowned stretch and recovery*



performance — providing comfort, fit and ease of movement — even when reintegrated into the spinning cycle,” commented **Nicholas Kurland, Product Development Director, Advanced Concepts The LYCRA Company.**

The project began four years ago, when Radici InNova launched the study of an innovative process for the **dissolution and separation of mixed textile fibres**. After the initial development phase, subsequent tests made it possible to recover **samples of LYCRA® fibre** from multi-material fabrics, which were then sent to The LYCRA Company to verify their recyclability.

The next step was to demonstrate the feasibility in practice: **Triumph provided its own production surplus**, a fabric containing **16% LYCRA® fibre**. From this material, Radici InNova succeeded in recovering both **LYCRA® fibre and nylon**. The **LYCRA® fibre** was then re-spun by The LYCRA Company, while **RadiciGroup** processed the recycled nylon to produce new **Renycle® yarn**.

Using these **recycled yarns (LYCRA® fibre and Renycle®)**, a **60-meter black fabric** was created, which Triumph used to produce a **coordinated lingerie set — bra and briefs —** concretely demonstrating the possibility of closing the loop: **from textile waste to new garments**.

The result achieved so far by **Radici InNova, The LYCRA Company and Triumph** should be considered a **prototype (concept garment)** designed to prove the **technical feasibility of recycling mixed textiles** and lay the groundwork for its **future industrialization**.

*“Although still in its early stages, **Triumph** is proud to contribute to this pioneering initiative and to explore the potential of this innovative recycling technology for future applications. Our next step will focus on developing a **capsule collection**, while also working on solutions to ensure **product identification, traceability and circularity systems**, so that garments can remain in use for as long as possible and, once they reach the end of their life, can be recycled in the most appropriate way. At Triumph, we are committed to promoting innovation and collaboration in the field of sustainability. Being part of this project strengthens our belief that **circularity for garments made from mixed textile fibers is possible**, and we are proud to help turn this vision into reality,”* said **Vera Galarza, Global Head of Sustainability – Triumph**.



The LYCRA Company

Triumph

About RadiciGroup

With approximately 2,800 employees, sales of €1,048 million in 2024, and a network of production units and sales offices spanning Europe, North and South America, and Asia, RadiciGroup today is a worldwide leader in the manufacture of a vast range of specialty chemicals, polyamides, high performance polymers, and advanced textile solutions, including nylon and polyester yarns, recycled yarn, bio yarns from renewable sources and nonwovens. Its products build on advanced chemical know-how and the vertical integration of the polyamide supply chain. They are developed for applications in a wide variety of industrial sectors, including the Automotive, Electrical/Electronics, Consumer Goods, Apparel, Furnishings, Building, Home Appliances and Sports sectors. Underpinning RadiciGroup's strategy is an overriding commitment to innovation, quality, customer satisfaction, and social and environmental sustainability. With its macro business areas – Specialty Chemicals, High Performance Polymers and Advanced Textile Solutions – RadiciGroup is part of a broader industrial group encompassing textile machinery (ITEMA), energy (GEOGREEN) and the hotel business (SAN MARCO).

About The LYCRA Company

The LYCRA Company is a leading global fiber and technology solutions provider to the apparel and personal care industries committed to offering sustainable products using renewable, pre-, and post-consumer recycled ingredients that reduce waste and help set the stage for circularity. Headquartered in Wilmington, Delaware, United States, it owns the LYCRA®, LYCRA HyFit®, LYCRA® T400®, COOLMAX®, THERMOLITE®, ELASSPAN®, SUPPLEX® and TACTEL® brands. The LYCRA Company adds value to its customers' products by offering unique innovations that meet the consumer's need for comfort and lasting performance. Learn more at lycra.com.

LYCRA® is a trademark of The LYCRA Company.

About Triumph

Triumph is one of the world's largest intimate apparel companies. It enjoys a presence in over 80 countries with the core brands Triumph® and sloggi®. Globally, the company serves 20,000 wholesale customers and sells its products in more than 2,300 controlled points of sale as well as via several own online shops. Beyond delivering high-quality products, Triumph is committed to social responsibility and sustainable practises, firmly believing in making a positive impact on the world.

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