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## From bottles to fibres: offering the technical sportswear world both high performance and sustainability

**As the Giro d'Italia tours the Bergamasque Alps, Bergamo-based multinational RadiciGroup takes a cue from the cyclists' uniforms and presents its sustainable yarn, ideal for making sportswear with a lower environmental impact**

Beautiful, colourful and high performance: these words describe the uniforms worn by the professional cyclists in the **Giro d'Italia**, while they criss-cross the Italian landscape during May, pedalling to win the multi-stage race.

**RadiciGroup** – an Italian multinational engaged in the production and sale of **chemicals, plastics and synthetic fibres** – has its headquarters in the province of Bergamo, where the cycling tour caravan is going to finish and start a stage. Technical sportswear is one of the applications utilizing RadiciGroup products: the Group's polyester yarn, for example, is the yarn of choice for many manufacturers of the latest-generation warp-knitted fabrics used to make highly technical, functional garments for a wide range of sports, including cycling, skiing, running, triathlon and swimming, as well as outdoor activities, in general.



Today, thanks to its experience acquired in the field of synthetic fibres and, specifically, its over 40 years of business activity in the polyester market, RadiciGroup is able to manufacture yarns that fuse performance with sustainability. The Group is developing more and more yarns from recycled polymer (**r-Radyarn®**), featuring reduced environmental impact, but at the same time lightness, comfort and sun protection

(Ultraviolet Protection Factor [UPF] +50). **r-Radyarn®** is the trade name of yarn made with PET obtained from recycled PET (ordinary plastic bottles). Recent **Life Cycle Assessment (LCA)** studies have shown that less carbon dioxide is emitted during the production of recycled PET. Indeed, for every kilogram of PET obtained from recycled PET bottles, up to three kilos less carbon

dioxide is emitted. Data on energy consumption also show a 45-50% reduction in energy usage per kilo of product, compared to products obtained from non-renewable raw materials.

**r-Radyarn®** yarns are the result of a multi-stage process – from post-consumer bottle collection to reprocessing and yarn production – all taking place in Europe and monitored at every step. RadiciGroup can provide **UNI 11505 certification** attesting to the full traceability of the recycled material.

**Polyamide**, better known as nylon, is yet another type of synthetic fibre manufactured by RadiciGroup, starting from the polymer. Polyamide yarn is very popular for sportswear, as it is soft, has a natural look and endows garments with breathability. All of these characteristics are of fundamental importance for anyone who plays a sport.

Polyamides can also be produced from renewable source base materials. One example is **PA6.10, (Radilon® 6.10)** a polymer obtained from sebacic acid (64% by weight), which is extracted from castor oil plant seeds, and hexamethylenediamine (36%), a petroleum derivative. The use of these materials allows for noticeably lower consumption of non-renewable source materials compared to other polyamides made entirely of petroleum intermediates.

RadiciGroup is a manufacturer of a wide range of high performance synthetic fibres with limited environmental impact: it is a sole upstream supplier in the sportswear supply chain offering innumerable solutions and opportunities.

And who knows what the future has in store? Perhaps the Giro d'Italia will become a "Ride Green" event which promotes sustainability and raises awareness to separate waste collection by finding a way to gather all the plastic bottles discarded along the entire route of the race and recycle them for recovery and re-use in the production of new sportswear textiles.

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**RADICIGROUP** – With approximately 3,000 employees, sales revenue of EUR 946 million in 2016 and a network of production and sales sites located throughout Europe, North America, South America and Asia, RadiciGroup is one of the world's leading producers of a wide range of chemical intermediates, polyamide polymers, engineering plastics, synthetic fibres and nonwovens. These products are the result of the Group's outstanding chemical expertise and vertical integration in the polyamide production chain, developed to be used in a variety of industrial sectors, such as: AUTOMOTIVE – ELECTRICAL AND ELECTRONICS – CONSUMER GOODS – APPAREL – FURNISHINGS – CONSTRUCTION – HOUSEHOLD APPLIANCES – SPORTS. The basis of the Group's strategy is a strong focus on innovation, quality, customer satisfaction and social and environmental sustainability. With its business areas - **Specialty Chemicals, Performance Plastics and Synthetic Fibres & Nonwovens** (Performance Yarn, Comfort Fibres and Extrusion Yarn), RadiciGroup is part of a larger industrial group that also includes textile machinery (ITEMA), energy (GEOGREEN) and hotel (SAN MARCO) businesses.

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