



SYNTHETIC FIBRES & NW PRESS RELEASE

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Water, a precious resource we care for

RadiciGroup: solution-dyeing of yarns helps reduce water and energy consumption

On World Environment Day, RadiciGroup highlights the concrete action taken towards business sustainability

Water is the source of life. Without this precious resource, life on Earth would not be possible. And neither would the **existence of industries** of all kinds – yarn manufacturing, in particular. On the occasion of **World Environment Day** – celebrated on 5 June – RadiciGroup wants to draw attention to the issue of saving water – “blue gold” – and point out some of the action taken by the man-made fibre industry.

The **water footprint** of synthetic fibres is way lower than that of cotton, wool or viscose products. That does not keep RadiciGroup – a multinational engaged in the production of a variety of polyester and polyamide yarns with numerous applications – from fully committing to the **constant monitoring and control of water resource consumption in its various processes**, as well as bringing to the market yarn dyed by the solution-dyeing process, which requires less water and energy compared to traditional yarn dyeing or piece dyeing. In solution dyeing, the colour is added “upstream” in the extrusion phase, and is thus incorporated into the polymer matrix.

In this way, the **environmental sustainability** of the products offered to customers is enhanced during production. This **production chain** can really be made **sustainable** through **cooperation among all the players** involved.

Life Cycle Assessment (LCA) studies conducted by NOYFIL SA and NOYFIL SpA, Group companies engaged in the production of polyester fibres, have shown that solution-dyed yarns – both the versions obtained from virgin polymer (Starlight® / Radyarn®) and post-consumer

recycled polymer (r-Starlight® /r-Radyarn®) – have a lower environmental impact than traditional yarn-dyed yarns.

A comparison of some of the impact indicators measured for solution-dyed and yarn-dyed Radyarn® shows a drop in impact values, as follows:

- ✓ Water consumption: - 90%
- ✓ Eutrophication: - 50%
- ✓ Energy requirement (GER – Global Energy Requirement): - 21%
- ✓ Carbon dioxide emissions (GWP – Global Warming Potential): - 16%

The decrease becomes even more dramatic for r-Radyarn®, which is obtained from post-consumer recycled polymer.

Solution-dyed yarn offers a number of further advantages, while ensuring excellent performance:

- ✓ Colour and additives incorporated into the fibre
- ✓ High light colourfastness
- ✓ High colour consistency
- ✓ Lower oligomer release

Solution dyeing is typically utilized for dyeing large quantities of product in a standardized production process. However, NOYFIL SA is set up to apply this sustainable technique even for the production of small lots, ensuring a high degree of consistency and homogeneity. Furthermore, the company provides an in-house service for the development of colour recipes and samples of solution-dyed yarns capable of meeting any customer need for the creation of colour palettes for any particular purpose.

*“Having made sustainability a strategic asset of our business,” stated **Oscar Novali, business area manager of RadiciGroup Comfort Fibres**, “RadiciGroup is ready and fully equipped to be an ‘upstream’ supplier of low environmental impact products, not only for the fashion sector, but also for the automotive, furnishings and outdoor industries. Together with some of our customers in the polyester fibre area, we have projects in progress that reflect our determination to be an environmentally aware player in the production value chain: solution-dyed yarns manufactured from recycled polymer (r-Radyarn®) combining technical and environmental performance.”*

The solution-dyeing technique is also applied in the production of nylon, specifically **Radilon® polyamide 6, 6.6 and 6.10 yarn**, used in the garment and technical textile sectors, **dorix® polyamide 6 and 6.10 staple yarn**, used for automotive and technical-industrial applications, and needle felt carpeting requiring high performance in resistance and colourfastness. Solution dyeing is also suitable for **polyamide 6 and 6.6 BCF yarn** (Radifloor®), yet another RadiciGroup textile carpet yarn.

“At our main production plants (Radici Yarn – polyamide yarn, RadiciFil – BCF yarn, and Noyfil – continuous polyester yarn, we have the right equipment and qualified staff for the preparation of tailored colour recipes,” **Filippo Servalli, sustainability director of RadiciGroup**, underscored. *“We have the capability to satisfy the most diverse market demands, including the supply of small lots of product. The priority for our Group – with its vertically integrated polyamide production and extensive know-how of the chemistry upstream of all our production – is to supply reduced environmental impact products, which have an end-of-life reuse. On World Environment Day,”* Mr. Servalli concluded, *“we want to stress that the circular economy is not just words and slogans for us, but the actual life we live and experience in our production plants, together with our employees and our customers.*

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.
