

NEWS RELEASE

Teijin to Mass Produce Nanofiber Filament Made from Recycled Polyester

Tokyo, Japan, April 12, 2021 --- [Teijin Frontier Co., Ltd.](#), the [Teijin Group](#) fibers and products converting company, announced today that it has developed technology to mass produce a new version of its *Nanofront*[®] ultra-fine polyester, which the company believes is the world's first nanofiber to be made from recycled polyester raw materials. Moreover, the new technology will enable Teijin Frontier to produce all of its polyester fiber products with recycled raw materials.

Teijin Frontier expects filament and textiles made with this new version of *Nanofront*[®] made from recycled polyester materials to replace conventional *Nanofront*[®] made from petroleum-derived raw materials in a wide range of fields, including sportswear, functional clothing, industrial uniforms and more. The company is forecasting sales of recycled-polyester *Nanofront*[®] to reach JPY 300 million in fiscal 2021 and JPY 800 million in fiscal 2025.



Sample sock made with *Nanofront*[®] recycled-polyester nanofiber

Nanofront[®] made from recycled polyester offers the same functions as conventional *Nanofront*[®] made from petroleum-derived raw materials:

Functions & New Feature		Details
Functions	Highly absorbent	Capillarity enhances water absorption and diffusion
	Good grip	Nano-sized irregularities on fiber surface create friction
	Soft texture	Pliable fibers produce soft texture
	High filterability and collectability	Fine pores promote filterability and high void structure improves collectability
	Impermeable & heat insulating	Precision structure enhances impermeability and heat shielding
New Feature	Uses recycled raw polyester	Made from recycled polyester raw materials but maintains conventional quality and functionality

In recent years, the demand for *Nanofront*[®] has expanded in a wide range of fields due to growing needs for materials offering high functionality, such as absorbency and grip, and excellent comfort including soft texture and low skin irritation. Meanwhile, the demand for recycling raw materials is rapidly increasing, but it has been difficult to mass produce ultra-fine fibers made from recycled polyester due to needs for high-level polymer control and spinning. Teijin Frontier has now developed new polymer-control and spinning techniques for *Nanofront*[®] made from recycled polyester materials. The key was the company's proprietary "sea-island" composite-fiber processing technology, which distributes two types of polymers into the fiber's "sea" and "island" parts, then dissolves and removes the "sea" part using an alkaline, etc. treatment, and finally extracts only the "island" part as raw yarn.

About the Teijin Group

Teijin (TSE: 3401) is a technology-driven global group offering advanced solutions in the fields of environmental value; safety, security and disaster mitigation; and demographic change and increased health consciousness. Originally established as Japan's first rayon manufacturer in 1918, Teijin has evolved into a unique enterprise encompassing three core business domains: high-performance materials including aramid, carbon fibers and composites, and also resin and plastic processing, films, polyester fibers and products converting; healthcare including pharmaceuticals and home healthcare equipment for bone/joint, respiratory and cardiovascular/metabolic diseases, nursing care and pre-symptomatic healthcare; and IT including B2B solutions for medical,

corporate and public systems as well as packaged software and B2C online services for digital entertainment. Deeply committed to its stakeholders, as expressed in the brand statement “Human Chemistry, Human Solutions”, Teijin aims to be a company that supports the society of the future. The group comprises more than 170 companies and employs some 20,000 people across 20 countries worldwide. Teijin posted consolidated sales of JPY 853.7 billion (USD 8.0 billion) and total assets of JPY 1,004.2 billion (USD 9.4 billion) in the fiscal year that ended on March 31, 2020.

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