

NEWS RELEASE

Teijin Frontier's New Polyester Fiber-based, Multi-functional Textile Uniquely Combines Excellent Heat Retention and High Breathability

Lightweight, Airy Material Offers Soft Comfort for Sports and Outdoor Thermal Apparel

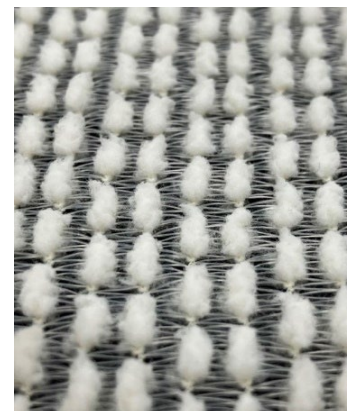
Tokyo, June 2, 2026 --- [Teijin Frontier Co., Ltd.](#), a Teijin Group company, today announced the development of a polyester fiber-based textile that uniquely performs two functions, which are difficult to achieve simultaneously. The new textile provides both excellent heat retention, delivered by its structure, and stuffiness suppression, provided through its high breathability. Designed for thermal apparel used in sports and outdoor activities, this new product features a novel appearance created by its distinctive, three-dimensional texture, along with a light and airy feel.

Teijin Frontier will position this multi-functional textile as a key material for sports and outdoor apparel for the fall/winter 2027 season and will work to expand domestic and international sales of the product.

In recent years, the sports and outdoor market has diversified, ranging from performance-oriented activities such as competitive sports and mountaineering to health-oriented activities such as jogging and trail running. In addition, sportswear is increasingly being incorporated into everyday fashion. As a result, demand is growing for thermal apparel that not only delivers conventional heat-retention performance, but also offers enhanced mobility, comfort and attractive appearance.

To meet this need, Teijin Frontier initially developed products using hollow 8-fin cross-section yarn in the raised fabric portion, but experienced challenges in achieving both heat retention and stuffiness suppression. In addition, because the filament yarn used in the raised portion was non-crimped, it lacked softness in texture and appearance, as well as a warm feeling.

To solve these issues, the company developed a polyester fiber-based multi-functional textile with a bulky, raised-fiber structure. It combines excellent lightweight heat retention with a moisture-suppression function achieved through high breathability, as well as a warm touch and airy appearance. This new textile was created by precisely splitting in half a double Raschel knitted fabric that uses low-crimp yarn in the



Close-up of the new polyester fiber-based, multi-functional textile's structure

ground structure and bulky, high-crimp textured yarn in the intermediate knot portions within the fabric.

Key Features

Teijin Frontier's novel polyester fiber-based textile achieves a uniform, lofty, air-containing, granular raised-fiber structure. The dead-air effect of the bulky yet lightweight raised nap creates loft and warmth.

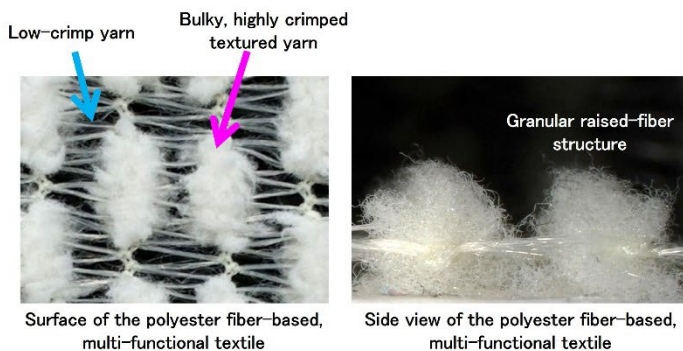
High breathability is the result of a special construction that creates large knitted stitches, forming gaps between the yarns. The void structure of the base fabric area achieves breathability more than twice as high as that of conventional products, according to a Teijin Frontier survey. Air permeability varies based on fabric design.

Moisture wicking occurs when the bulky, highly crimped textured yarn makes point contact with the skin. After wicking sweat, this yarn rapidly diffuses the moisture to the low-crimp yarn via capillary action for quick drying. This process prevents chill caused by sweat retention.

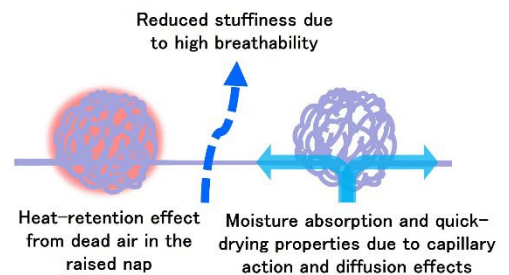
Long-term shape retention, even after repeated laundering, is due to the stable, three-dimensional structure of the crimped yarn, which contains abundant air.

Sustainability Benefits

This multi-functional textile can be produced from recycled polyester fiber as well as conventional polyester, giving customers a sustainable option. Further, thanks to its non-brushed design using filaments, the material sheds few fibers and can help reduce the generation of ocean-bound microplastics during laundering.



Illustration



Teijin Frontier is targeting sales of 50,000 meters of the new textile in fiscal 2027, and 250,000 meters in fiscal 2029.

About the Teijin Group

Teijin (TSE: 3401) is a global group that co-creates value with Customer-Driven businesses across the Apparel & Industries, Healthcare & Life Solutions, Electronics & Energy and Specialty Materials domains. Established in 1918 as Japan's first rayon manufacturer, Teijin

today comprises some 125 companies employing approximately 15,700 people. Teijin is committed to its Purpose: Pioneering solutions together for a healthy planet. Teijin works together with employees and external partners to achieve its Long-Term Vision: To be a company that supports the society of the future. Teijin posted consolidated revenue of JPY 873.2 billion and total assets of JPY 920.1 billion in the fiscal year ending March 31, 2026.

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