



PEF

The Next-Generation Bio-Based Functional Fiber

Redefining Sustainable Fashion with Intrinsic High Performance

For more information or to request samples, please

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Global Certification



NATURE'S ANSWER TO THE FUTURE OF FIBER



Apparel & Multi-Scenario Applications

Fabrics

ABOUT GS BIOMATS

From lab innovation to industrial scale, GS BIOMATS is bringing "natural molecules" to the global market.

Built on the academic excellence of the Chinese Academy of Sciences (Dalian Institute) and Tsinghua University, we have solved the bio-based industry's critical cost and stability challenges by mastering the continuous production process for FDCA. This technical advantage is backed by our robust supply chain capabilities; with facilities in Zhejiang and Jiangsu scaling up to 10,000-ton capacity, we have already delivered over 100 tons of material worldwide for use in packaging, fibers, and aramids.

The Paradigm Shift: Benzene vs. Furan

For the past 50 years, the textile industry has relied on the Benzene Ring (derived from petroleum). We found a better answer in the Furan Ring (derived from plant sugars).

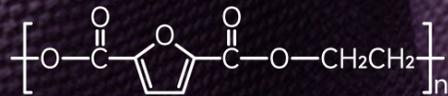
WHY DOES THIS MATTER?

Unlike inert petroleum structures, the Furan Ring is naturally oxygenated and highly polar with a rigid structure. This creates "Performance by Design"—capabilities that are built into the molecule itself, not added via chemicals.

- Intrinsic Power: No chemical additives needed.
- Structural Integrity: High modulus and rigidity.
- Dual Impact: Delivers high performance without compromising sustainability.

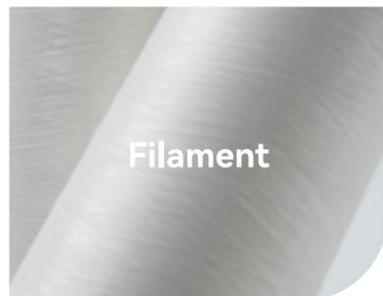


Intrinsic Performance Powered by Natural Structure

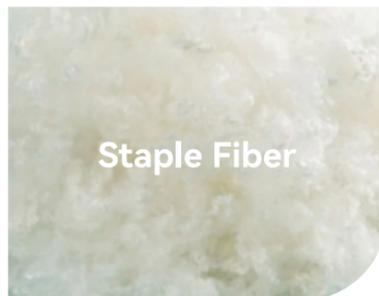


Based on the oxygen-rich Furan ring, PEF fiber offers multiple natural functions without chemical additives, providing stable performance for diverse applications.

- 🛡️ Natural Antibacterial & Mite-Resistant
- 💧 Superior Moisture-Wicking & Quick-Dry
- ❄️ Instantaneous Cool Touch
- 📏 Exceptional Crease Recovery & Shape Retention
- 🎨 Vivid Color Fastness & High Dye-Affinity
- 🧶 Enhanced Anti-pilling Performance



Filament



Staple Fiber



Top

Performance by Nature (No Additives Required)

Natural Antibacterial (Grade 7A) × Anti-Mite

Mechanism

Oxygen-containing furan rings disrupt bacterial electron activity
Polar molecular structure interacts directly with bacterial target molecules, reducing activity at the source
Controlled ROS interaction forms a natural antibacterial barrier
Controlled ROS interaction forms a natural antibacterial barrier

Natural Moisture Management × Fast Drying

Mechanism

Polar furan rings rapidly attract and absorb moisture
Asymmetric chains create micro-channels for fast moisture transport
Fast absorption + fast evaporation = intrinsic quick-dry performance

Anti-Wrinkle × Shape Retention

Mechanism

High glass transition temperature (Tg) ensures structural stability
Higher rigidity and modulus deliver natural firmness
Asymmetric furan rings enable elastic recovery and crease resistance

High Dyeability & Color Saturation

Mechanism

Rigid furan rings open efficient dye diffusion pathways under heat
Polar structure enhances affinity with disperse dyes
Lower dye and energy input at equivalent color depth

One Fiber Multiple Lifestyles



Cotton Blend

Reduces Deformation & Sagging

Applications:
Sportswear/Casualwear, Kidswear,
Homewear & Underwear, Bedding, etc.



Wool Blend

Less Shrinkage & Pilling
Brighter Colors

Applications:
Contemporary Apparel, Corporate Wear,
Loungewear & Intimates,
and Outdoor functional clothing, etc.



Lyocell Blend

Wrinkle-Resistant & Wet-Shape Stable

Applications:
High-end fashion,
Loungewear & Intimates,
Premium Bedding, etc.



Silk Blend

Improved drape
Wrinkle resistance
Easier care

Applications:
High-End Fashion,
Loungewear & Intimates, Artworks, etc.

COMFORT

FUNCTIONALITY

VERSATILE BLEND
COMPATIBILITY

The core raw material of PEF fiber, FDCA,
is derived from renewable biomass,
significantly reducing reliance on
non-renewable resources across its entire life cycle.

PEF Fiber Enables
Cleaner origin
Intrinsic functionalit
Greater freedom in applications

SUSTAINABILITY

FDCA Monomer	PEF Polymer	Furix™ PEF Fiber	FDCA Regulatory Compliance
	<p>43.8% #3.8% lower emissions vs. PET</p>	<p>98% (±3%) certified bio-based carbon content</p>	