中国纤维
流行趋势
CHINA FIBERS
FASHION TRENDS

桐昆·中国纤维
流行趋势报告
TONGKUN·CHINA FIBERS
FASHION TRENDS REPORT
2023/2024

国家工业和信息化部消费品工业司
中国化学纤维工业协会
东华大学
中国棉纺织行业协会

桐昆集团股份有限公司

Tongkun Group Co., Ltd.

桐昆股份：601233

行纤维之事
利国计民生

TONGKUN GROUP

中国纤维
流行趋势
CHINA FIBERS
FASHION TRENDS

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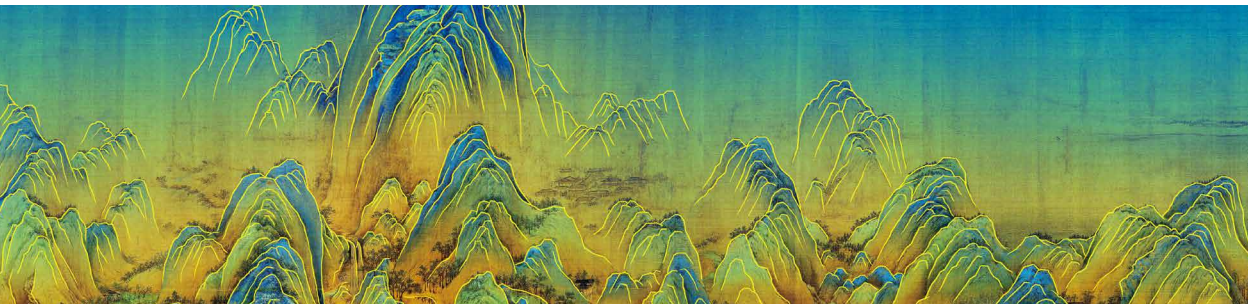
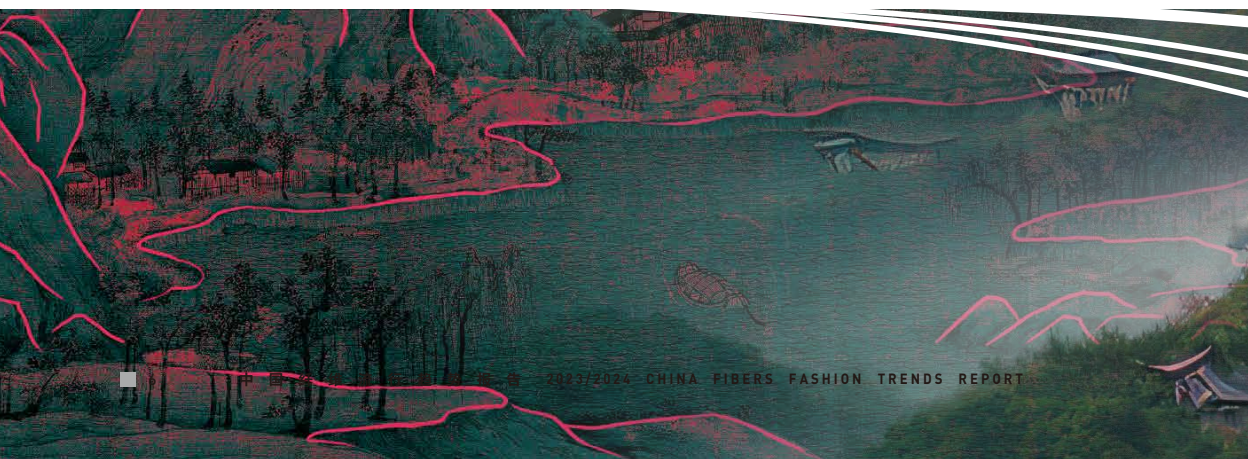


纤连世界 CONNECT THE WORLD BY FIBER

创新无限 INNOVATE FOR A BETTER FUTURE


纤维
新视界
NEW FIBER
NEW WORLD

纤连世界，维美中国	Chinese fiber connects the world and beautifies China
志和者	People with the same goal
不以山海为远	Will never be separated by mountains or seas
从原子到分子	From atoms to molecules
从分子到高分子	From molecules to polymers
从一根纤维到一束丝	From a single filament to a bunch of fibers
从一束丝到一幅锦	From a bunch of fibers to a piece of brocade
纤维唯美了中国 时和景丽	Fiber beautifies the time and sceneries of China
纤维勾连起世界 物阜民丰	Fiber links the world with abundant resources and people
可以百炼钢 护卫人间	It can be the well-tempered steel to protect the world
可以绕指柔 温暖家国	And can be the softness to warm the country
中国纤维 以至诚 勾连世界	Chinese fiber connects the world with sincerity
中国纤维 以至美 无界共行	Chinese fiber links the world with beauty
中国纤维 以至臻 唯美中国	Chinese fiber beautifies the world with high-quality
中国纤维 以至简 和合共生	Chinese fiber harmonizes the world with simpleness
追逐一抹绿 循环再生	Pursuing green and endeavoring for recycling
共享一片土 物尽其用	Sharing the same land and wasting nothing
源于自然 反哺自然	Originating from nature and feedingback
大道至简 大音希声	The greatest truths are the simplest



中国纤维人	People engaging in Chinese fiber industry
精致剪辑 创新无界	Cut and editing delicately with boundless innovation
原子堆叠 大象无形	Make the most incomparable design from countless atoms
分子悦动 变幻无垠	Marvel uncountable changes from the versatile molecules
聚集体构筑 喻意无限	Gather collective thoughts into limitless figures
精微调控 各美其美	Adjust precisely to achieve every gratification
可轻 可柔	The fiber can be light and soft
似棉 似毛	Cotton-like orfur-like
亦真 亦幻	Real and hallucinatory
精密呈现 功能繁复	Make high appearance and comprehensive functions
极舒适 强防护	High comfort level and great protective performance
热管理 向智能	And can be thermally-managed and intelligentized
精巧构思 四海深空	With fine quality, Chinese fiber has been widely applied
四海有中国纤维	In the seas
深空有中国纤维	And the sky
中国纤维奋进在崭新征程	We will keep fighting
中国纤维未来是星辰大海	Until conquering the Sea of Stars leading to the new era of Chinese fiber

中国纤维流行趋势
主题解读

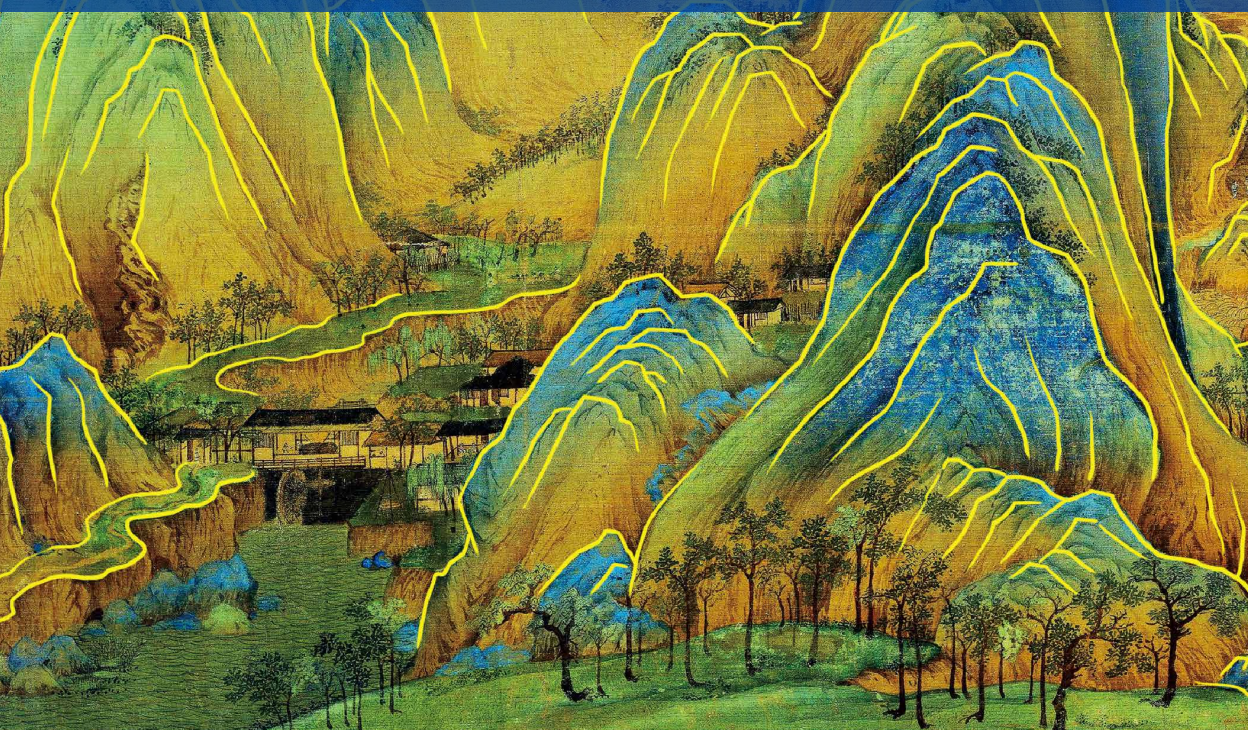
The Interpretation on
China Fibers Fashion Trends
2023/2024

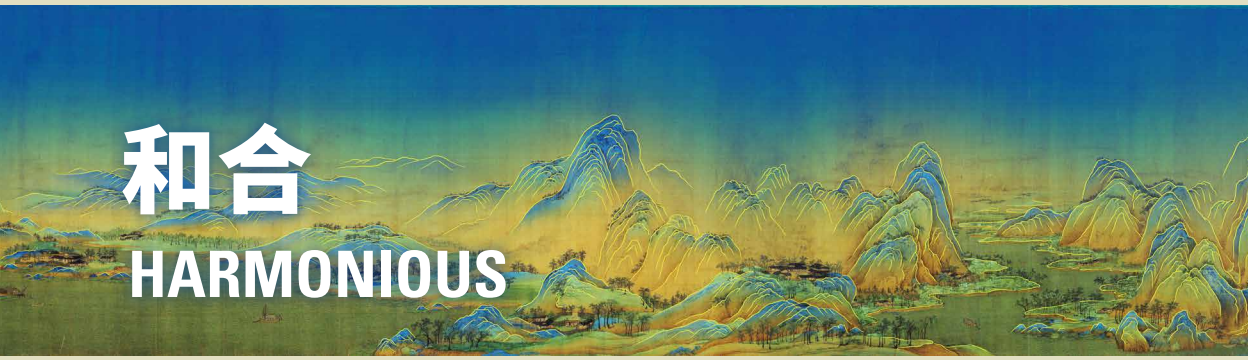
和合与共生

HARMONIOUS CO-EXISTENCE

和合共生，与时偕行。当今世界，和而不同，共享发展；文化理念，你中有我，我中有你；产经融合，相互联系、相互依存。中国化纤人致力于“大道之行，天下为公”的美好愿景，在求同存异中发展，为推动破解发展难题，提供中国方案；为实现世界各国人民对美好生活的向往，贡献中国智慧。

Promote harmony and cooperation, and advance with the times. Today's world encourages harmony in diversity and shared development. For cultural concept, it is mutual learning and communication; For development, it is the integration and connection of industry and economy. The Chinese chemical fiber people are committed to the beautiful vision of "a public spirit will rule all under the sky when the great way prevails ", developing in seeking common ground while reserving differences, providing Chinese solutions to promote and solve development problems, and contributing Chinese wisdom to realize the aspiration of people around the world for a better life.





和合
HARMONIOUS

世界和合：和而不同，美美与合

World harmony: harmony in diversity, and mutual learning

万物并育而不相害
大道并行而不相悖
中国为世界第一大化纤生产国
已深度融入全球纺织供应链和价值链
与全球化纤纺织产业互联互通、
休戚与共
中国为世界第一大化纤出口国和消费国
解决了全世界二分之一人口的穿衣问题
中国化纤架起一座纤韧的彩虹桥
跨越亚非欧的苍穹
勾勒出一道道山海相连的弧度
纤起一个个遥远的国度
用丝织就经济繁荣
化纤人共同面对环境问题
合力解决产业难题
打造群体与社会和谐
纤连世界
和合共生

All living creatures grow together without harming one another

ways run parallel without interfering one another.

China is the largest chemical fiber manufacturer around the world

It has been deeply integrated into the global textile supply chain and value chain

And is connected and shares weal and woe with the global chemical fiber and textile industry

China is the largest chemical fiber exporter and consumer around the world

It has solved the clothing problem for half of the world's population

Chinese chemical fiber industry has built a rainbow bridge with fiber

across the skies of Asia, Africa and Europe

Connecting mountains and seas

Linking distant countries

And spinning economic prosperity through fiber

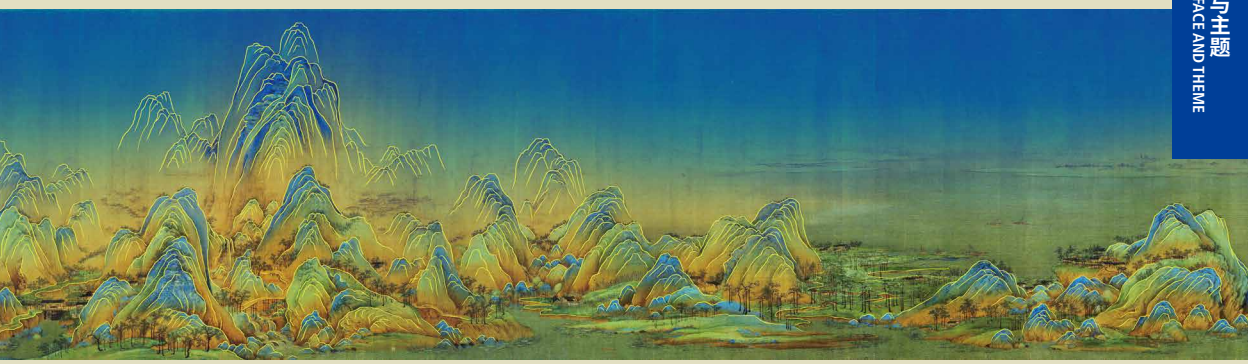
Chemical fiber people face the environmental problems together

Jointly solve industrial problems

And promote group and social harmony

Connecting the world by fiber

And promoting harmony and cooperation



人体和合：亲和舒适，自然合谐

Body harmony: skin-friendly and comfort, and natural harmony

我们不断面临着消费者的考题
什么是亲和舒适关系
化纤人的回答是
一接触、就会放下防备
一拥抱、就感觉舒适
一习惯、就难以离开
不带来身体束缚、自由自在
不带来思想负担、轻松自如
若即若离、不远不近，一切恰到好处
什么是自然合谐关系
化纤人的回答是
纤维颜色，可游走黑白之间，也可炫彩夺目
纤维形状，可圆可方、可直可卷、能屈能伸
纤维触摸，可轻轻微凉、轻盈呼吸
纤维味道，可鲜活清新、沁人心脾
纤维性能，可导湿透汗、降温、保暖
纤维功能，可抵抗病毒入侵、屏蔽紫外线、亦可阻燃消臭
纤维于人体
可亲可疏、可远可近
一切出于自然

We are constantly facing the test questions of consumers

What is skin-friendly and comfort

The answers of the chemical fiber practitioners are

Putting down guard at a touch

Feeling comfortable at a hug

And being difficult to leave once getting used to it

Free from physical constraints

Free from psychological burden

Everything is just right

What is natural harmony

The answers of the chemical fiber people are

The color of fiber can be black and white or colorful

The shape of fiber can be round or square, straight or rolled, bended or stretched

The touch of fiber can be gently cool, light and breathable

The smell of fiber can be fresh and vivid

The performance of fiber can be wet permeable, perspired, temperature-reducing and warm-keeping

The function of fiber can be antiviral, ultraviolet light shielding, flame retardant and deodorant

It can be either close or far to the body, as it's all out of natural

共生
CO-EXISTENCE

自然共生：和谐发展，共生共荣

Cooperation with nature: harmonious development, intergrowth and co-prosperity

群体与社会、人与自然
和谐共生，是我们追求的永恒目标
我们从未停止对自然万物的追问
也被自然拷问
我们正面临着一场“零碳”的考试
考试出题人是地球
我们需要在每一个流程、
每一道工序上演算
在每一种产品里勾选
纤维人交出了自己的答案
为了降低地球负荷、保护地球“内核”
用可再生原料缩减石油消耗
为了净化自由呼吸的空气
减少能耗、物耗和有害物质的排放
为了保护蓝色海洋
我们对微塑料发起挑战
为了明天走得更远
我们取材大自然，开发绿色环保、
寿命终结后回归大自然的产品
为了呵护地球上的生命
以“人造仿”代替天然真
“0”分是我们追求的满分
和谐发展，共生共荣
是我们对地球的回答

For group and society, man and nature

Harmonious coexistence is our eternal goal

We have never stopped questioning everything in nature

In turn, we have also been questioned by nature

We are facing a "zero carbon" test

The setter is earth

We need to calculate in every process and procedure

And check each product

Fiber people give the answers

To reduce the load and protect the “core” of earth

We reduce oil consumption with renewable raw materials

To purify the freely breathing air

We reduce energy consumption, material consumption and the emission of hazardous substances

To protect the blue ocean

We challenge microplastics

To go further in the future

We draw from nature and develop products which are green and environment-friendly, and can be returned to nature after the end of service life

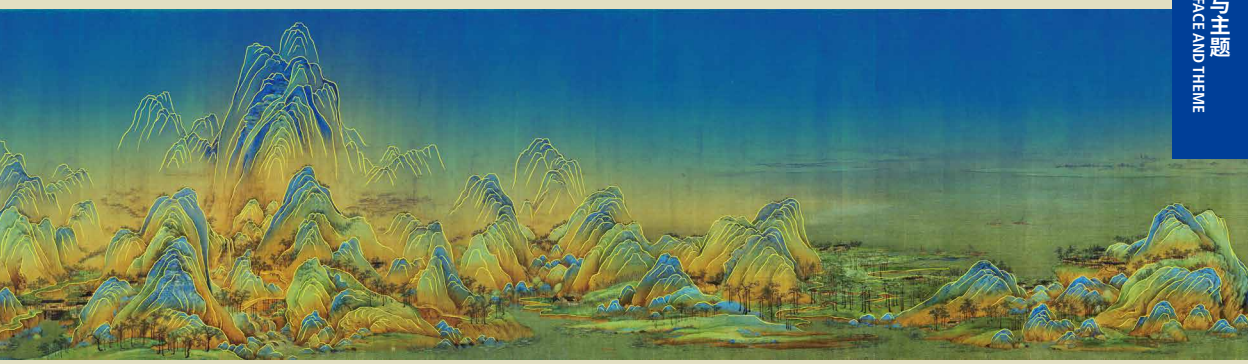
To protect life on earth

We substitute "artificial fiber" for natural genuine

"0" has always been the full score we seek

Harmonious development and intergrowth and co-prosperity

Is our answer to earth



科技共生：
科技赋能，创新共生

Cooperation with technology: technology and innovation empowerment

科技是我们的内核
科技开辟绿色催化
点燃了“无锑”纤维的畅想
拉近“高冷”元素与百姓距离
实现消费升级、美美与共
感受“微元素”的能量
让冬天不再寒冷、夏天不再酷热
为纤维注入“金刚不坏”的灵魂
筑起同心抗疫的钢铁长城
打造形状各异、千变万化的横截面
营造仿棉、仿毛、仿真的百变效果
催生纳米科技、生物工程
在化纤领域开花结果
享受科技带来的丰硕果实
实现高端封锁产品
从“0 到 1”历史跨越
奏响新时代发展的交响乐
纤维的维度
从平实的路面延伸到遥远的太空
从百姓的生活家到农民的农田梗
从贴身呵护到“直抵人心”
科技创新从未如此与我们贴近
日新月异，创新不止

Technology is our core

It opens up green catalysis

Ignites the imagination of "antimony free" fiber

Closes the distance between "reserved " elements and the people

And realizes consumption upgrading and mutual learning

With the power of “micro element”

Winter is no longer cold and summer is no longer hot

Fiber is injected with the soul of “adamantine”

The Great Wall of steel to fight against COVID-19 is built

The cross sections with different shapes and changes are shaped

A variety of effects like cotton, wool and emulation are created

And the nanotechnology and bioengineering are promoted in the field of chemical fiber for positive results

Enjoying the abundant fruits brought by technology

Achieve the historical leap of high-end blockaded products from "0 to 1"

And play the development symphony of the new era

Let the fiber extend from flat road to the distant space

From people's homes to farmers' farmland

And from personal care to "reaching the heart"

Technological innovation has never been so close to us

That innovation continues with each passing day

性能图标
Performance Icon


弹性持久
Durable Elastic


均匀稳定
Good Stability


吸湿速干
Fast Dying


透气
Breathable


凉感
Cool feeling


吸湿发热
Absorbing Moisture and Emitting Heat


亲肤
Skin Friendliness


柔软
Soft


蓬松
Fluffy


保暖
Heat Preservation


质量轻
Lightweight


婴儿级纺织品
infant textile products


抗蠕变
Creep Resistance


水溶
Water-soluble


氨基酸
Amino acid


生物质
Biomass


循环再生
Recycling & Regeneration


绿色环保
Green & Environmental Protection


生物降解
Biodegradability


部分替代原生纤维
Virgin Fiber Replacement


仿棉
Cotton-like


仿真
Imitated


光泽好
Good luster


抗皱
Anti-wrinkle


挺括
Structured


悬垂性好
Good Drapability


易打理
Ease-care


易加工
Easy Processability


导热
Heat conduction


生物相容性
Biocompatibility


易上染
Easy-dyable


色彩持久
Durable Color


原液着色
Dope dyed


色彩丰富
Enriched colors


染色鲜艳
Durable Color


耐磨
Wear Resistance


抗起球
Anti-pill


除臭
Deodorizing function


抑菌
Anti-bacteria


驱蚊
Mosquito repellent


防泼水
Water-repellent


耐洗涤
Washing-resistant


耐污
Stain-resistant

耐光
Light resistance

高吸水性

high water absorbent

耐高温

Heat-resistant

隔热

Heat Insulation

温度调节

Warmth & Cooling

吸收光源

Absorption from light sourcet

防紫外线

Anti-UV

耐老化

Anti-aging

耐酸碱

Acid & Alkali Endurance

耐腐蚀

corrosion resistance

低熔点

Low melting-point

抗熔滴

Anti-drip

低烟

Low toxicity

防透视

Anti-perspective

耐辐射

Radiation resistance

耐烧蚀

Ablation resistance

防螨

Anti-mite

防病毒

Antivirus

远红外

Far infrared

耐化学药品

Chemical resistance

无重金属析出

No Heavy Metal

电绝缘

Electric insulation

高耐(电)压

High (Electricity) Pressure Resistant

抗静电

Anti-static

阻燃

Flame Retardant

可塑性好

Plastic

密度小

low-density

单丝纤度

Fineness monofilament

纤度细

Small fineness

异形截面

Specially Shaped Section

尺寸稳定

Dimensional stability

防霉

Mildew resistance

低温热粘合

Low-temperature thermal adhesion

高强度

High-strength

高模量

High Modulus

抗冲击性

Impact-resistance

耐高低温

High and Low Temperature Resistant

高伸长

High Stretch

抗拉强度高

High Tensile Strength

低应力

Low Stress

低模量

Low Modulus

分散性好

Dispersion

可追溯性

Traceability

效率高

High productive efficiency

使用寿命长

Long service life

形状记忆

Shape memory

发光

Luminescent

低能耗

Low energy consumption

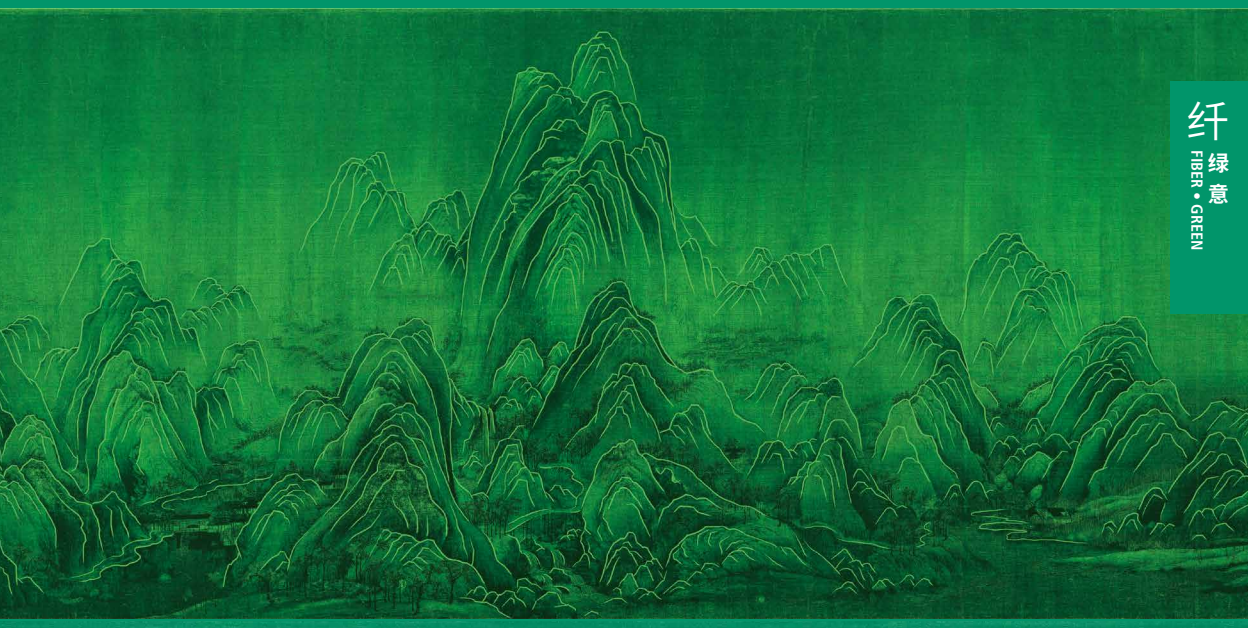
中国纤维流行趋势 China Fibers Fashion Trends 2023/2024

纤/绿意

FIBER · GREEN

城市繁华渐渐淹没自然的绿意，“复得返自然”成为理想。中国纤维建立一套完善丰富、多维度的绿色低碳制造体系。农林、植物、动物等副产物的低碳开发及功能性品种拓展，引领绿色制造，收获一片绿意；原液着色技术的升级迭代，赋予纤维五彩斑斓的外衣，勾画彩色纤维的绿色属性，播种美丽梦想。

The prosperity of the city has gradually drowned the green of nature, and "a green and natural life" becomes an ideal hard to achieve. Chinese fiber industry has established a complete and multi-dimensional green low-carbon manufacturing system to carry out the low-carbon development and functional product development of agricultural and forestry, plants, animals, biological by-products and other raw material resources, leading green manufacturing and creating a green atmosphere; And the upgrading and iteration of dope dyeing technology enables the fiber with colorful appearances, and outlines the green properties of colored fiber, sowing a beautiful dream.



BIOBASED CHEMICAL FIBER

生物基化学纤维

生物基化学纤维，自原材料开始精算低碳效应。可再生原料替代不可再生石油原料，速生、耐旱、生命力顽强的菌草替代经济价值高的木材，实现低成本开发；100%源于天然植物，结合生物酶技术的纤维素醚短纤维，常温水溶性优异、遇水成凝胶态的特性适用于医疗卫材领域。国产化聚乳酸纤维更上一层楼，专业化与差异化定制为毛纺领域提供多元绿色选择；生物基聚酰胺 56 纤维，蕴含吸湿速干属性，演绎环保锦纶的别样风采。

For biobased chemical fiber, the low-carbon effect is calculated from raw materials. To realize low-carbon and low-cost development, the non-renewable petroleum is replaced by renewable raw materials, and the wood with long growth cycle and high economic value is replaced by the fast-growing Mycorrhiza with low value; In view of its water solubility, the way where the fiber come from is the way go back , the product will dissolve and turn into water and gas to boost the growth of plants after being abandoned; On the basis of domestic manufacture, the polylactic acid fiber has strived for further improvement, realizing specialized and differentiated customization, and providing new raw materials for wool spinning field; the bio-based polyamide 56 fiber, with the core of science and technology and functional deduction, represents the unlimited possibilities of biobased.

推荐纤维及品牌 Recommended fibers and brands

菌草基再生纤维素纤维
Mycorrhiza-based regenerated cellulose fiber

水溶再生纤维素醚短纤维
Water soluble regenerated cellulose ether staple

毛纺专用聚乳酸纤维
Polylactic acid fiber for wool spinning

吸湿速干生物基聚酰胺 56 纤维
Moisture-absorbing andquick-drying bio-basedpolyamide 56 fiber

白鹭 Bailu

隆腾纤维 LONGRISING

福泰来丝 FUTAILAISI

伊纶 EYLON

白鹭 Bailu

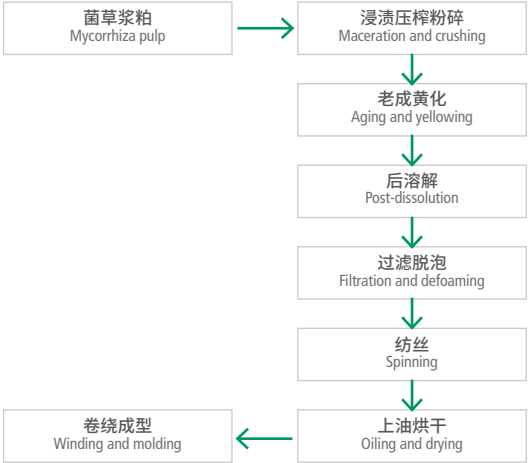
菌草基再生纤维素纤维

Mycorrhiza-based regenerated cellulose fiber

制备技术
Processing Technology

采用碱法提取草本植物菌草秸秆中的纤维素成分，经过次氯酸钠或其他成分的漂白、制浆等一系列工艺制备菌草浆粕，再经湿法纺丝制备菌草纤维素纤维。

The cellulose component in the straw of the herbaceous plant Mycorrhiza is extracted by alkaline process, and the Mycorrhiza pulp is prepared by a series of processes such as bleaching and pulping with sodium hypochlorite or other components, and then the Mycorrhiza cellulose fiber is prepared by wet spinning.



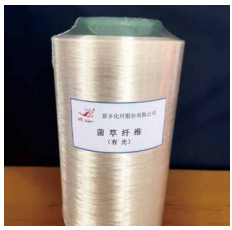
推荐理由

纤维原料为速生草，增加植物原料的多样性，资源易再生；再生纤维素纤维长丝，本质抑菌，可满足高端产品的需求。

Recommendation Reasons

Its raw material is fast-growing grass, which is easy to regenerate and can increase the diversity of plant raw materials; The regenerated cellulose fiber filament yarns, which is essentially anti-bacteria, can meet the needs of high-end products.

纤维及制品特点
Characteristics of Fiber and Product



主要规格

长丝：82.5~330dtex/24~60F

Main Specifications

Filament: 82.5~330dtex/24~60F

标准及认证

《连续纺粘胶长丝》（FZ/T 54011-2014）

Standards and Certifications

Continuous Spinning of Viscose Filament Yarns(FZ/T 54011-2014)

纤维性能与制品特点

- 生物基材质，低碳环保
- 可降解
- 抑菌效果好，抑菌率大于 99%

Fiber Performance and Product Features

· Bio-based material, which is low carbon and environmental protection

· Degradable

· Good anti-bacteria effect, which is greater than 99%

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂伸长率（%） Elongation at break (%)	断裂伸长率 CV（%） Elongation at break CV(%)	染色均匀度（级） Uniformity of color （Grade）	抑菌率（%） Bacteriostasis rate (%)
82.5dtex/24F	1.85	14.2	6.8	4	金黄色葡萄球菌＞ 99% 白色念珠菌＞ 99% 大肠杆菌＞ 99% Staphylococcus aureus>99% Candida albicans>99% Escherichia coli>99%

下游应用指导
The downstream application guidance

织造：可单独使用或者与各种纤维交织，适用于制作各种针织和梭织面料

染整：建议使用分散低温染料，染色温度和热定型温度≤ 130℃

Weaving: It can be used alone or interwoven with various fibers, suitable for making various knitted and woven fabrics

Dyeing and finishing: It is recommended to use disperse low-temperature dyes, and dyeing temperature and heat setting temperature should be less than or equal to 130℃

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓		✓	✓		✓			
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
						✓		✓
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓							
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓	✓							

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
						✓		✓
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：菌草基再生纤维素纤维与常规纤维素纤维有何不同?

A：菌草纤维素纤维的原料来自于菌草，菌草属于草本植物，易生长。常规再生纤维素纤维的原料来源于木材，相对于木材，草本植物生长更快，因此更加经济，同时也增加了生物基原料的多样性。但菌草中的纤维素含量较木材低，所以制浆技术难度更大。

Q：菌草基再生纤维素纤维目前的市场应用情况如何?

A：菌草基再生纤维素纤维可应用于服装用品、家纺用品、汽车内饰、军用纺织品等领域。目前产品已被多个下游厂商关注，并要求合作开发下游系列产品，具有广阔的市场空间。

Q: What are the differences between the Mycorrhiza-based regenerated cellulose fiber andconventional cellulose fiber?

A: The raw material of the Mycorrhiza-based regenerated cellulose fiber sources from Mycorrhiza, which is a kind of herbaceous plant and is easy to grow. While the raw material of conventional regenerated cellulose fiber comes from wood. Compared with wood, herbaceous plants, which grow faster, can be more economical and increase the diversity of bio-based raw materials. However, Mycorrhiza has lower cellulose content than wood, and its pulping technology is more difficult.

Q: What is the current market status of Mycorrhiza-based regenerated cellulose fiber?

A: The Mycorrhiza-based regenerated cellulose fiber can be used in the fields of clothing products, home textile products, automobile interior decoration, military textiles, etc. It has a vast potential for future development that many downstream manufacturers have already paid attention to the products and required cooperation in the development of downstream series products.

LONGRISING®

隆腾纤维
LONGRISING

水溶再生纤维素醚短纤维

Water soluble regenerated cellulose ether staple

制备技术
Processing Technology

以纤维素为原料，采用生物酶技术，通过纤维素 C3、C6 的羟丙基、羧甲基改性生产纤维素醚，经湿法纺丝工艺制备水溶再生纤维素醚短纤维。

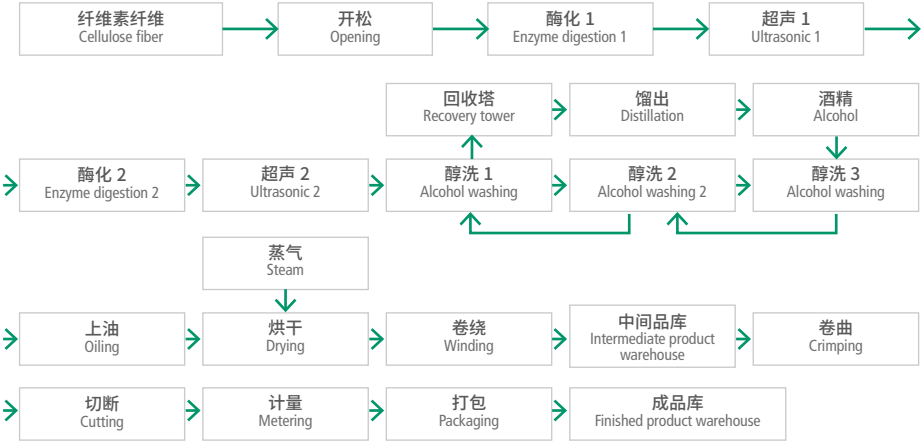
With cellulose as raw material, cellulose ether is produced through the hydroxypropyl and carboxymethyl modification of cellulose C3 and C6 by biological enzyme technology, and then the water-soluble regenerated cellulose ether staple is prepared by wet spinning process.

推荐理由

纤维素纤维品种再创新，提升了产品的附加值，拓展了产品的应用领域。纤维可水溶、可降解、安全无害、适用于医疗卫生领域。

Recommendation Reasons

The re-innovation of cellulose fiber varieties has increased the added value of products and expanded the application fields of products. The fiber is water-soluble, degradable, safe and harmless, and suitable for medical and health fields.



纤维及制品特点
Characteristics of Fiber and Product

后道产品图
Back-end product figure

主要规格
短纤：1.1 ～ 3.0dtex×20 ～ 62mm

Main Specifications
Staple fiber: 1.1~3.0dtex×20~62mm

标准及认证
《聚乳酸短纤维》(FZ/T 52041-2015)

Standards and Certifications
Polylactic acid staple fiber (FZ/T 52041-2015)

纤维性能与制品特点
- 100% 源于天然植物，绿色环保
- 常温水溶，遇水成凝胶态，质感微滑柔顺
- 亲水性能优异，具有瞬间吸水、高吸水特点
- 可降解、90 天相对降解率 87.5%，安全无毒、可做医疗卫材专用

Fiber Performance and Product Features
· 100% from natural plants, green and environmental protection

· Water-soluble at normal temperature, becoming gelatinous when meeting water, with slightly-smooth and soft texture

· Excellent hydrophilic performance, being able to absorb water instantly and superbly

· Degradable, with a relative degradation rate of 90 days of 87.5%, safe and non-toxic, can be used for medical and sanitary materials

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂伸长率（%） Elongation at break (%)	20°C、1min 内溶解质量分数 (%) Dissolution mass fraction in 1min at 20°C (%)	水溶液 COD (mg/L) Water solution COD(mg/L)	初始污染菌 (fu/g) Initial contaminating bacteria (fu/g)
1.33dex×38mm	⩾ 3.3	⩾ 10	⩾ 80	⩽ 100	⩽ 100
吸湿性能 Moisture absorption performance			安全性能 Safety performance		
吸液倍率不小于自身重量的 10 倍 离心保液量不小于自身重量的 15 倍 加压吸收量不小于自身重量的 15 倍 The liquid absorption ratio is not less than 10 times of its own weight The centrifugal liquid retention capacity is not less than 15 times of its own weight The absorption under pressure is not less than 15 times of its own weight			零刺激、零致敏、细胞成活率⩾ 70% 水溶液 COD ⩽ 100mg/L 初始污染菌⩽ 100cfu/g Zero stimulation, zero sensitization, cell survival rate ⩾ 70% Water solution COD ⩽ 100mg/L Initial contaminating bacteria ⩽ 100cfu/g		

与 PVA 水溶纤维水溶性能对比：
Comparison of water solubility with PVA water-soluble fiber:

项目 Name	PVA 水溶纤维 PVA water-soluble fiber		水溶再生纤维素醚短纤维 Water soluble regenerated cellulose ether staple
醇解度 Alcoholysis degree	部分醇解 Partial alcoholysis	⩾ 20°C水溶 ≥20°C Water-soluble	常温皆可溶 无醇解度影响 Soluble at room temperature No influence of alcoholysis degree
	完全醇解 Complete alcoholysis	⩾ 90°C水溶 ≥90°C Water-soluble	

与天丝吸水性能对比：
Comparison of water absorption capacity with Tencel:

项目 Name	天丝纤维 Tencel fiber	水溶再生纤维素醚短纤维 Water soluble regenerated cellulose ether staple
吸水性 Water absorption	吸水倍率 3-4 倍 Water absorbent rate 3-4 times	瞬间吸水，纤维透明、顺滑；吸水倍率⩾ 10 倍 Instantaneous water absorption, transparent and smooth fiber; Water absorbent rate≥ 10 times

下游应用指导
The downstream application guidance

混纺退维：取代传统 PVA 纤维，常温水溶，凝成胶态
非织造布：可以通过热轧工艺、针刺工艺制成热轧非织造布、针刺非织造布

Removed PVA fiber from the blending: it can replace traditional PVA fiber, dissolve in water at normal temperature, and coagulate into colloidal state
Non-woven fabrics: the hot-rolled nonwovens and needle-punched nonwovens can be made through hot-rolling process and needle-punching process

纤维应用
Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
	✓							
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓			✓				
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
					✓			✓

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
							✓	✓
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
	✓							

Q&A

Q：水溶再生纤维素醚短纤维的环境友好性能体现在哪些方面?

A：1. 生物基水溶材料，遇水 - 溶胀 - 溶解 - 降解；
2. 健康、环保、可降解（90 天堆肥相对降解率 87.5%）；
3. 生物酶技术，生产过程材料环保友好；
4. 生产溶剂回收循环利用，降低能耗，低碳生产；
5.COD 化学需氧量小于 100mg/L，对水质环保友好。

Q：水溶再生纤维素醚短纤维的吸水倍率是多少?

A：1. 常规状态下：自来水，156.55 g/g；纯净水，147.65 g/g；0.9% 生理盐水，39.4 g/g；
2. 离心力作用下：离心保液量，15 g/g；
3. 加压力作用下：加压吸收量，15 g/g

Q: What are the environmentally friendly properties of water-soluble regenerated cellulose ether staple?

A: 1. Bio-based water-soluble materials, which can swell, dissolve and degrade in water;
2. Healthy, environmental protection and degradable (the relative degradation rate of compost in 90 days is 87.5%);
3. Biological enzyme technology. The production process and materials are environmentally friendly;
4. Recovery and recycling of production solvent, which can reduce energy consumption and promote low-carbon production;
5. COD chemical oxygen demand less than 100mg/L, which is environmentally friendly to water quality.

Q: Do you know the current development of polylactic acid fiber and its contribution to the realizatoal?

A: 1. Under normal condition: tap water, 156.55g/g; Purified water, 147.65g/g; 0.9% normal saline, 39.4 g/g;
2. Under centrifugal force: centrifugal liquid retention, 15g/g;
3. Under pressure: pressurized absorption, 15g/g

毛纺专用聚乳酸纤维

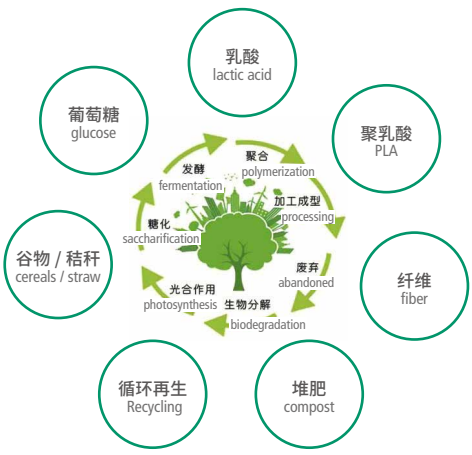
Polylactic acid fiber for wool spinning

制备技术

Processing Technology

将玉米、木薯、红薯、甜高粱等农作物分解提取出淀粉，再利用酶转化成葡萄糖；或将秸秆分解提取出纤维素和半纤维素，再通过物理和化学方法转化成五碳糖、六碳糖。糖经过发酵生成乳酸，乳酸通过浓缩制得丙交酯，再经开环聚合生成聚乳酸，经熔融纺丝工艺制得聚乳酸纤维。

Corn, cassava, sweet potato, sugar grass and other crops are decomposed to extract starch, which is then converted into glucose by enzymes; Or the straw is decomposed to extract cellulose and hemicellulose, which are then converted into pentose and hexose through physical and chemical methods. The sugar is fermented to produce lactic acid, which is concentrated to produce lactide. Then, through ring opening polymerization, the polylactic acid is produced and finally the polylactic acid fiber is prepared by melt-spinning process.



生态循环示意图
Ecological cycle diagram

福泰来丝®
FUTAILAISI

福泰来丝
FUTAILAISI

推荐理由

聚乳酸纤维品种拓展与升级。毛纺型聚乳酸降低了毛纺制品的成本，赋予了毛纺成品抑菌抗螨亲肤的特点，避免了存放期间虫蛀的问题。

Recommendation Reasons

It is the expansion and upgrading of polylactic acid fiber varieties. The wool-spun type of polylactic acid reduces the cost, endows wool-spun products with anti-bacteria, anti-mite and skin-friendly characteristics, and prevents the moth-eaten problem during storage.

纤维及制品特点
Characteristics of Fiber and Product

主要规格

短纤：2.22dtex×88mm、3.33dtex×88mm

Main Specifications

Staple fiber:2.22dtex×88mm,3.33dtex×88mm

标准及认证

《聚乳酸丝织物》（FZ/T 43057-2021）

《可水洗聚乳酸纤维 / 棉复合絮片》（T/CTCA 10-2021）

Standards and Certifications

"Polylactic acid silk-fabric" (FZ/T 43057-2021)

Washable polylactide/cotton composite wadding(T/CTCA 10-2021)

纤维性能与制品特点

- 生物基材料、绿色环保、可生物降解
- 难燃、难烧、无黑烟
- 亲肤透气，本质抑菌、抗螨、防过敏
- 抗紫外线

Fiber Performance and Product Features

· Bio-based raw materials, green and environmentally-friendly, biodegradable

· Flame-retardant, fire-resistance,without black smoke

· Skin-friendly and breathable, intrinsically anti-bacteria, anti-mite and anti-allergy

· Uvioresistant

产品规格 Specifications	干断裂强度 cN/dtex Breaking tenacity in dry state(cN/ dtex)	断裂伸长率（%） Elongation at break (%)	沸水收缩率（%） Boiling water shrinkage rate (%)
2.22dtex×88mm	3.0-5.0	28-60	4-6
极限氧指数（%） Limiting oxygen index (%)	抗螨性（%） Anti-mite performance (%)	抑菌率（级） Anti-bacterial rate(Grade)	回潮率（%） Moisture regain (%)
25-27	⩾ 60	3A	0.6

下游应用指导
The downstream application guidance

纺纱：可与羊毛进行半精纺，建议聚乳酸纤维含量高于 30% 有抑菌防螨的效果

织造：可以用于制作针织布、梭织布和非织造布

染整：使用分散低温染料进行染色；染色温度和热定型温度≤ 115°C

Spinning: It can be semi-spun with wool. It is suggested that the content of polylactic acid fiber is higher than30%, which has the effect of anti-bacteria and anti-mite

Weaving: It can be used to make knitted fabrics, woven fabrics and nonwovens

Dyeing and finishing: Dyeing with low-temperaturedispersing dyes; Dyeing temperature and heat setting temperature ≤ 115 °C

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓			✓	✓				✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓	✓	✓				✓		
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓							
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓	✓	✓	✓	✓				

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
			✓					

Q&A

Q：聚乳酸纤维在医疗领域的应用，你了解吗？

A：聚乳酸纤维由于其生物相容性良好，可生物分解吸收，在医疗领域有着广泛的应用前景。如聚乳酸手术缝合线有较强的抗张强度，能有效控制聚合物的降解速率，随着伤口的愈合，缝合线自动缓慢降解消失。此外，还可应用于牙科材料、眼科植入材料、药用控制系统、人造皮肤、人造组织工程支架材料等医药学领域。

Q: Do you know the application of polylactic acid fiber in the medical field?

A: The polylactic acid fiber has a broad application prospect in the medical field because of its good biocompatibility and biodegradability. For example, polylactic acid-based surgical suture has strong tensile strength and can effectively control the degradation rate of polymer. With the healing of the wound, the suture will degrade and disappear automatically and slowly. In addition, it can also be applied to dental materials, ophthalmic implant materials, drug-release systems, artificial skin, artificial tissue engineering scaffold materials and other medical and pharmaceutical fields.

伊纶

EYLON

推荐理由

相比传统石油基聚酰胺材料，吸湿速干生物基聚酰胺 56 纤维可降低约 50% 的不可再生资源消耗，同时更加柔软、吸湿速干、耐温、易染并具有凉感，兼具环保和功能性，竞争优势明显。

Recommendation Reasons

Compared with traditional petroleum-based polyamide materials, the bio-based polyamide 56 fiber exhibit good moisture-absorbing and quick-drying properties while reducing the consumption of non-renewable resources by about 50%. It gives cool feeling and better performance in flexibility as well, and is also easy to dye. It is both environmentally-friendly and functional with obvious competitive advantages.

吸湿速干生物基聚酰胺 56 纤维

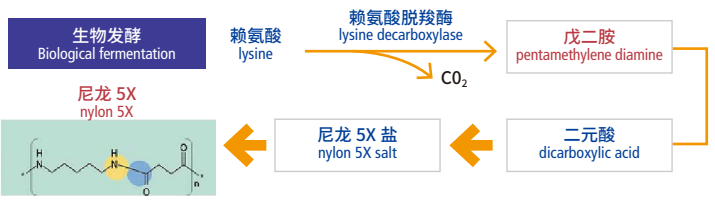
Moisture-absorbing andquick-drying bio-basedpolyamide 56 fiber

制备技术

Processing Technology

可再生的植物原料经生物发酵制成赖氨酸，通过赖氨酸脱羧酶制成戊二胺，戊二胺与己二酸缩聚形成聚酰胺 56 盐，后经纺丝制备形成长丝和短纤产品。

The renewable plant raw materials are made into lysine by biological fermentation and then made into pentamethylene diamine by lysine decarboxylase. Afterwards, the pentamethylene diamine and adipic acid are condensed to form polyamide 56 salt, which is spun to filament fiber and staple products.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

短纤：1.55dtex×38mm，2.75dtex×51mm

长丝：22~77dtex/24~68F FDY/DTY SD/FD

毛条：2.22dtex×88mm

Main Specifications

Staple fiber: 1.55dtex×38mm,2.75dtex×51mm

Filament: 22~77dtex/24~68F FDY/DTY SD/FD

Wool top: 2.22dtex×88mm

标准及认证

参考《锦纶短纤维》（FZ/T 52002-2012）

Specifications and certification

refer to polyamide staplefiber (FZ/T 52002-2012)

纤维性能与制品特点

- 植物来源材料绿色环保
- 具有很好的吸湿排汗性能，接触凉感
- 可在常压下低温染色，上染温度低、速度快、色牢度高、不易褪色
- 本质阻燃，纤维及织物的极限氧指数（LOI）超过 30%
- 优良的弹性、弹性持久、回复率高

Fiber Performance and Product Features

· The plant-originated materials are green and environmentatally-benign

· It has good moisture absorption and sweat-wicking performance and cool touch

· It can be dyed at low temperature under normal pressure, with fast dying speed, high color fastness and fastness to fading.

· Intrinsically flame-retardant. The limiting oxygen index (LOI) of fiber and fabric exceeds 30%

· Excellent elasticity, lasting elasticity and high recovery rate

规格 Specifications	线密度值（dtex） Yarn density value(dtex)	断裂强度（cN/dtex） Breaking tenacity(cN/dtex)	断裂伸长率（%） Elongation at break (%)	卷曲收缩率（%） Crimp shrinkage (%)
1.55dtex×38mm	1.65	4.05	56.29	---
22dtex/24F	23.29	3.6	26.32	41.65

产品规格 Specifications	弹性回复率（%） Elastic recovery rate (%)	定力伸长率（%） Elongation under constant tension (%)	抗起球等级（级） Anti-pilling grade (grade)	色牢度等级（级） Color fastness grade(grade)
70%PA56+30% 氨纶面料 70%PA56+30%Spandex fabric	99.9	103.6% 直向 153.1% 横向 103.6% Vertical 153.1% Horizontal	4	4-5
吸水率（%） Specifications (%)	滴水扩散时间（s） Drip diffusion time (s)	吸芯高度（mm） Wicking height (mm)	蒸发速率（g/h） Rate of evaporation (g/h)	透湿率 g/(m^2•24h) Water and vapor transfer ratio (m2•24h)
188	4.9	161	0.31	1.15×10^4

下游应用指导

The downstream application guidance

纺纱：预定型：预定温度建议 195°C～ 198°C

染色：中浅色尽量选用释酸剂染色，保温时长同聚酰胺 6 纤维，温度推荐为 90°C

Preset type: the preset temperature is suggested to be 195°C ~198°C

Dyeing: the medium and light color shall be dyed with acid-releasing agent as far as possible. The insulation time is the same as polyamide 6 fiber, and the temperature is recommended to be 90°C

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓		✓	✓		✓	✓	✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓	✓	✓	✓	✓	✓	✓		✓
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
✓	✓				✓	✓		
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
		✓						

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
						✓		
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓								
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								

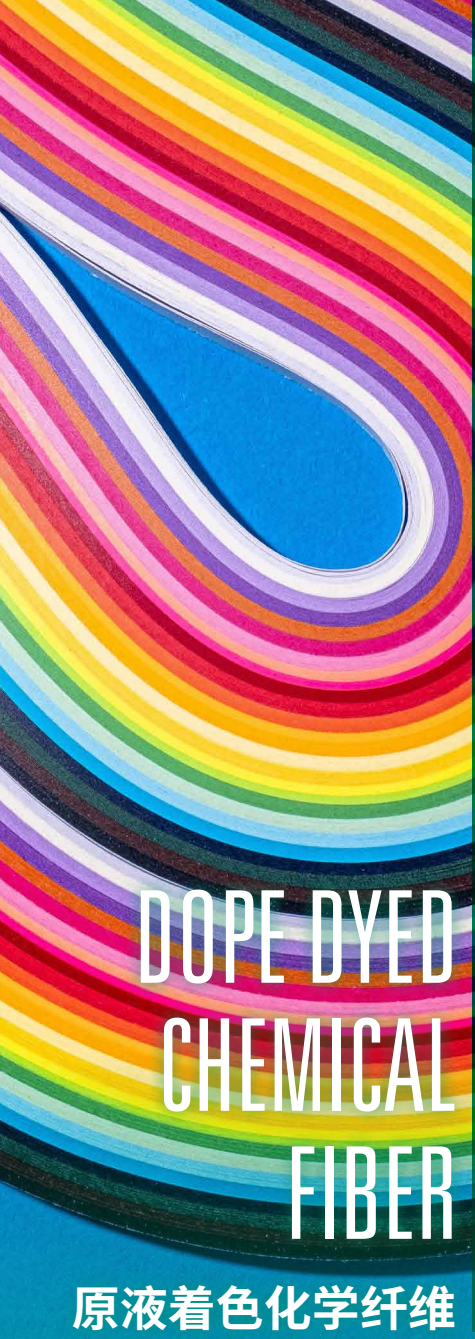
Q&A

Q：吸湿速干生物基聚酰胺 56 纤维与常规聚酰胺或生物基聚酰胺纤维具有哪些优势？

A：首先，与石油为原料的聚酰胺 6 或聚酰胺 66 相比，吸湿速干生物基聚酰胺 56 纤维的原料来自于可再生植物，所以可减少化石能源的使用。其次，该聚合物分子链链段上的亲水基团，使其具有更好的亲水性能，回潮率约在 5.5%~6%，可减轻过度干燥导致的刺痒感和静电效应，且有凉感效果。最后，与常规生物基聚酰胺纤维相比，生物基聚酰胺 56 的分子链段柔性更大，纤维更亲肤柔软，染色温度更低、着色深、上染率高。

Q: What are the advantages of moisture-absorbing and quick-drying bio-based polyamide 56 fiber compared with conventional polyamide or bio-based polyamide fiber?

A: First of all, compared with petroleum-based polyamide 6 or polyamide 66, the raw material of moisture-absorbing and quick-drying bio-based polyamide 56 fiber is made from renewable plants, so it can reduce the use of fossil energy. Secondly, the hydrophilic group on the molecular chain segment of the polymer affords a better hydrophilic performance. With a moisture regain of about 5.5%~6%, it can reduce the itching and electrostatic effect caused by excessive drying, and has a cool feeling. Finally, compared with conventional bio-based polyamide fiber, the bio-based polyamide 56 has more flexible molecular chain segment, and the fiber is more skin-friendly and softer, with lower dyeing temperature, deeper dyeing and higher dye-uptake.



DOPE DYED CHEMICAL FIBER

原液着色化学纤维

色彩，万物最本真的存在。原液着色纤维，在每一个流程、每一道工序中精算低碳公式。原位聚合工艺，将染料分子与大分子链牢牢相连，少一分色彩差异，多一分灵动耐久之美。色浆在线添加工序，与可追溯的示踪剂相结合，随纤维素纤维变幻多姿，仍可精确识别；双组份并列复合与色母粒在线添加，创造聚丙烯纤维自然活力的色彩美学。原液着色绚烂美好，最美底色皆为绿色。

Color is the most authentic existence of all things. For dope-dyed fiber, the low carbon effect is calculated in each procedure and process. In in-situ polymerization process, dye molecules and macromolecular chains are firmly connected to endow the color with more flexibility and durability. With the combination of color paste and traceable tracer agents used online adding process, accurate identification can be carried out as the cellulose fiber changes; The bi-component compound complex and online addition of color master batch process build a natural and dynamic color aesthetics for the polypropylene fiber that is difficult to present color. The groundings for dope-dyeing are all green.

推荐纤维及品牌 Recommended fibers and brands

高品质原液着色聚酰胺 6 纤维
High-quality dope-dyed polyamide 6 fiber

申丽纶 Eco Colors

可追溯原液着色再生纤维素纤维
Traceable dope-dyed regenerated cellulose fiber

唐丝 TangCell

双组分并列复合有色聚丙烯纤维
Bi-component composite colored polypropylene fiber

蒙泰 MODERN

申丽纶®

申丽纶

Eco Colors

高品质原液着色聚酰胺 6 纤维

High-quality dope-dyed polyamide 6 fiber

制备技术

Processing Technology

在聚酰胺聚合过程中添加颜料单体，颜料分子与聚酰胺 6 以共价键或氢键结合，制得有色聚酰胺 6 切片，再将切片经熔融、挤出、喷丝、冷却、上油和卷绕成型，制备原位聚合原液着色聚酰胺 6 纤维。

In the process of polyamide polymerization, the pigment monomer is added, and the pigment molecule is combined with polyamide 6 by covalent bond or hydrogen bond to prepare colored polyamide 6 chips. Then, the chips are melted, extruded, spinneretned, cooled, oiledand, winded and molded to prepare the dope-dyed polyamide 6 fiber.

推荐理由

采用原位聚合原液着色技术，纤维色泽更均匀、色牢度高，颜料分子粒径更小，分散均匀，减少织针磨损。品质升级满足高档产品的市场需求。

Recommendation Reasons

Using the in-situ polymerization dope-dyeing technology, the fiber color is more uniform, with high fastness, small-sized and uniformly-dispersed pigment molecules, and less needlewear. The quality upgrade meets the market demand of high-end products.

纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：22dtex/24F、33dtex/68F、
44dtex/72F、77dtex/96F FDY
92dtex/24F POY
155dtex/48F DTY
44dtex/12F HOY

Main Specifications

Filaments: 22dtex/24F,33dtex/68F,
44dtex/72F, 77dtex/96F FDY
92dtex/24F POY
155dtex/48F DTY
44dtex/12F HOY

标准及认证

《锦纶牵伸丝》（GB/T 16603-2017）
《锦纶 6 预取向丝》（FZT 54024-2019）
《锦纶 6 弹力丝》（FZT 54007-2019）

Standards and Certifications

Polyamide drawn yarn (GB/T 16603-2017)
Polyamide 6 pre-oriented yarns(FZT 54024-2019)
Polyamide 6 drawntextured yarns(FZT 54007-2019)

纤维性能与制品特点

- 采用原位聚合原液着色技术，纤维染色深、色泽均匀
- 下游加工无需染整工艺、低碳环保
- 耐摩擦、耐皂洗、耐光、耐汗复合色牢度高

Fiber Performance and Product Features

· The in-situ polymerized dope-dyeing technology is adopted, and the fiber is dyed deeply and evenly

· The downstream processing requires no dyeing and finishing process, which is low-carbon and environmentally friendly

· High color fastness to friction, soaping, light and perspiration

产品规格 Specifications	断裂强度 (cN/ dtex) Breaking tenacity (cN/dtex)	断裂伸长率 (%) Elongation at break (%)	沸水收缩率 (%) Boiling water shrinkage rate (%)	耐摩擦色牢度 (级) Color fastness to friction (grade)	耐皂洗色牢度 (级) Rate of Moisture regainColor fastness to soaping (grade)	耐光、汗复合色牢度 (级) Color fastness to light and perspiration (grade)
22dtex/24F	⩾ 4.9	39.7	11	干摩擦 4-5 湿摩擦 4-5 Dry friction 4-5 Wet friction 4-5	Color changed 4-5 Color stained 4-5	耐碱性光汗 4-5 Resistance to alkaline, light and perspiration 4-5

下游应用指导
The downstream application guidance

混纺：可与棉、毛、麻等混纺，也可以与涤纶、腈纶等化学纤维混纺
储存：产品存放应尽量避免阳光直射

Blending: It can be blended with cotton, wool, flax, etc., and other chemical fibers such as polyester and acrylic fiber
Storage: The products should be stored away from direct sunlight as far as possible

纤维应用
Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
		✓		✓				
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓							
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

产业用纺织品 Industrial textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓							✓	
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								



Q&A

Q：高品质原液着色聚酰胺 6 纤维比色母粒法原液着色聚酰胺 6 纤维的优势在哪里?

A：与色母粒法相比，高品质原液着色聚酰胺 6 纤维中的颜料分子粒径更小，分散更均匀，因此染色深且均匀、色牢度更高，更加适合细旦纤维的制备。此外，原位聚合原液着色技术推动聚酰胺纤维行业技术创新，省去了后道染色工序，产品向中高端迈进，节能环保，实现绿色制造。

Q: What are the advantages of high-quality dope-dyed polyamide 6 fiber compared with the dope-dyed polyamide 6 fiber by color master batch method?

A: Compared with the dope-dyed polyamide 6 fiber by color master batch method, the pigment molecular size in the high-quality dope-dyed polyamide 6 fiber is smaller, and the dispersion is more uniform. Therefore, the dyeing is deep and uniform, and the color fastness is higher, which is more suitable for the preparation of fine denier fiber. In addition, the in-situ polymerization dyeing technology has facilitated the technological innovation of the polyamide fiber industry, eliminated the subsequent dyeing process, made the product move towards the middle and high end, and promoted energy conservation and environmental protection to realize green manufacturing.

TangCell唐丝

唐丝

TangCell

推荐理由

生产过程中加入色浆和追踪剂，实现了再生纤维素纤维原液着色的同时，保证纤维到终端制品整体产业链的透明和可追溯。

Recommendation Reasons

The mill base and tracer are added in the production process to realize the dope-dying of regenerated cellulose, and ensure the transparency and traceability of the whole industrial chain from fiber to terminal products.

可追溯原液着色再生纤维素纤维

Traceable dope-dyed regenerated cellulose fiber

制备技术

Processing Technology

筛选适用于纺前注入工艺的追踪剂，将其制备成追踪剂浆料；将追踪剂和色浆共混后加入到纺丝液中，经湿法纺丝工艺制成可追溯原液着色再生纤维素纤维。

Thesuitable tracer for the pre-spinning injection process is selected and prepared into tracer paste; The tracer paste and mill base are blended into the spinning solution, and then the traceable dope-dyed regenerated cellulose fiber can be produced through wet spinning process.

纤维及制品特点

Characteristics of Fiber and Product

主要规格

1.33dtex×38mm

Main Specifications

1.33dtex×38mm

标准及认证

《粘胶短纤维》（GB/T 14463-2008）

Standards and Certifications

Viscose staple fiber (GB/T 14463-2008)

纤维性能与制品特点

- 采用分子追踪技术、即使通过纺织品加工后，仍可在终端应用中识别原料来源
- 采用原液着色技术，省去传统的染色步骤，节能降耗，绿色环保
- 色牢度好，颜色丰富，可实现 24 种颜色制备
- 织物手感柔软，悬垂性好，穿着舒适亲肤

Fiber Performance and Product Features

· The molecular tracking technology is adopted to identify the source of raw materials in terminal applications even after textile processing

· The dope-dyeing technology is adopted, which saves traditional dyeing steps, saves energy and reduces consumption, and is green and environmentally friendly

· Good color fastness, rich color, 24 colors can be prepared

· The fabric feels soft, has good drapability and is comfortable to wear

产品规格 Specifications	干态断裂强度 Breaking tenacity in dry state (cN/ dtex)	湿态断裂强度 (cN/dtex) Breaking tenacity in wet state (cN/dtex)	干态断裂伸长率 (%) Breaking elongation in dry state (%)	湿态断裂伸长率 (%) Breaking elongation in wet state (%)	湿模量 (cN/dtex) Wet modulus (cN/dtex)	色牢度 (级) Color fastness (grade)
1.33dtex×38mm	2.3-2.5	1.2-1.4	20-22	18-20	0.24-0.26	4-4.5

下游应用指导

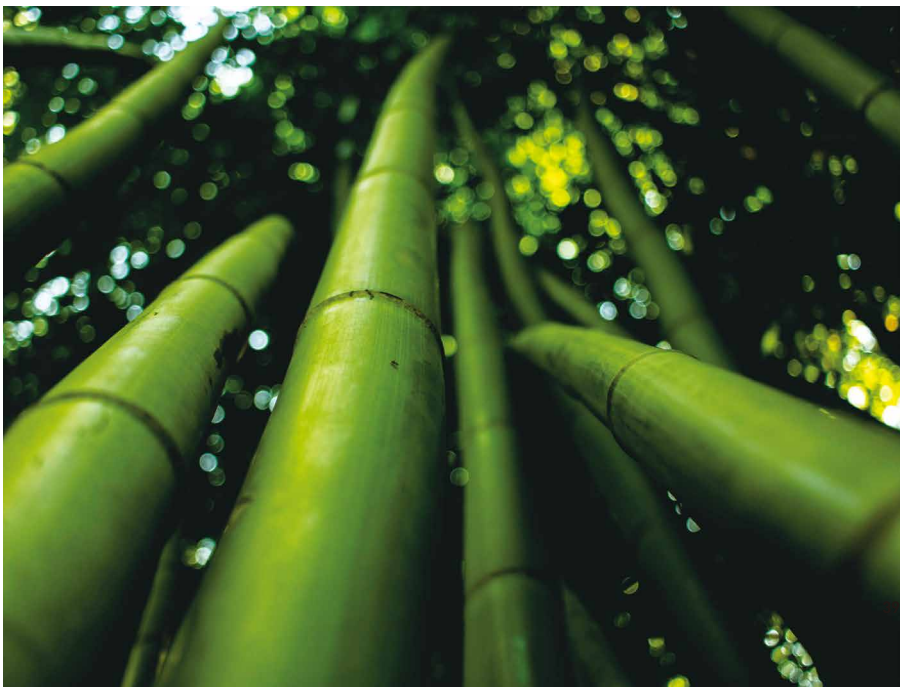
The downstream application guidance

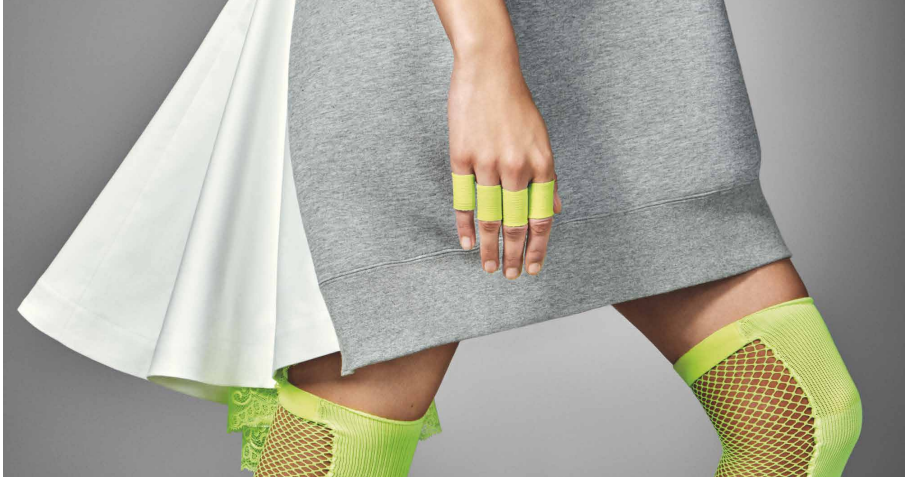
纺纱：可以纯纺，也可与其他纤维进行混纺

织造：可纺成纱线，用于制作针织与梭织面料；也可用于生产水刺、针刺、热轧等无纺布

Spinning: It can be spun solely or blended with other fibers

Weaving: It can be spun into yarn for making knitted and woven fabrics, or used to produce spunlaced, needle-punched, hot-rolled and other non-woven fabrics





纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓		✓	✓	✓	✓	✓	✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓	✓	✓	✓					
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓							
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓	✓		✓					

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								

Q&A

Q：可追溯原液着色再生纤维素纤维的优势体现在哪里？

A：该纤维产品在制备过程中采用原液着色技术，并添加了追踪剂，纤维的色牢度高，可实现 24 种颜色的制备，同时绿色升级，低碳效果叠加，实现从原材料到终端品牌整体产业链的透明。

Q: What are the advantages of the traceable dope-dyed regenerated cellulose fiber?

A: In the process of preparation, the fiber product adopts dope-dyeing technology and adds tracer. The color fastness of the fiber is high, and there are 24 colors can be prepared. In addition, the green upgrade and low carbon effect are combined, and the transparency of the whole industrial chain from raw materials to terminal brands is realized.

蒙泰 Modern

蒙泰
MODERN

双组分并列复合有色聚丙烯纤维

Bi-component composite colored polypropylene fiber

制备技术
Processing Technology

不同融指聚丙烯经干燥后按比例添加色母粒进入各自螺杆，经加热熔融挤出进入复合纺丝箱体，由喷丝板喷出侧吹风冷却后，集束上油，通过甬道经预网络、拉伸、定型后进行收卷。

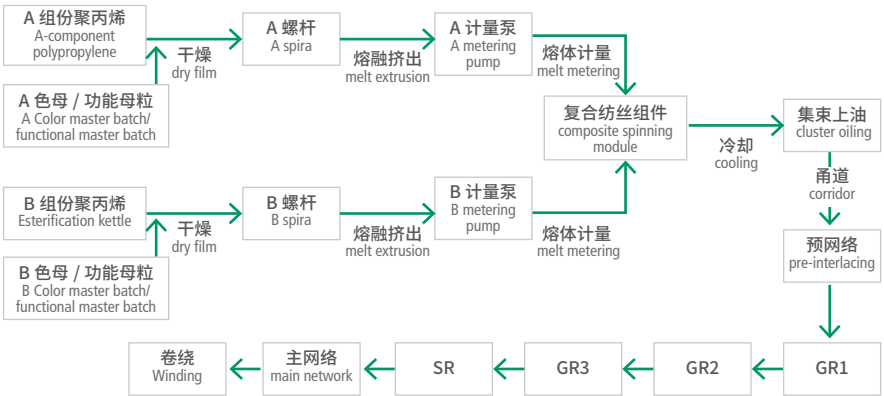
After drying, the color master batch is added to the spirals of polypropylenes with different melting indexes in proportion respectively. Then, it is heated, melted and extruded, and enter into the composite spinning manifold. After being cooled by the side blowing from the spinneret, it is clustered and oiled, and then rolled through the corridor after being pre-interlaced, stretched and shaped.

推荐理由

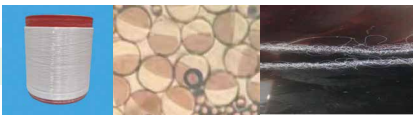
双组分复合纺丝及原液着色技术赋予聚丙烯纤维优异的卷曲性、回弹性及色彩丰富性，拓宽了聚丙烯纤维的用途。

Recommendation Reasons

The bi-component composite spinning technology and dope-dyeing technology endow the polypropylene fiber with excellent crimpiness, resilience and color richness, and expand the use of polypropylene fiber.



纤维及制品特点
Characteristics of Fiber and Product



主要规格

长丝：55-110dtex/24-48F DTY

Main Specifications

Filament: 55-110dtex/24-48F DTY

标准及认证

《有色丙纶弹力丝》（TCCFA 01043-2019）

Standards and Certifications

Colored stretch polypropylene fiber(TCCFA 01043-2019)

纤维性能与制品特点

- 采用原液着色技术，省去传统的染色步骤，节能降耗，绿色环保
- 具有永久性螺旋状的立体卷曲，弹性和抗皱回弹性好，持久弹性
- 织物轻量化，手感柔软丰满，穿着舒适

Fiber Performance and Product Features

· The dope-dyeing technology is adopted, which saves traditional dyeing steps, saves energy and reduces consumption, and is green and environmentally friendly

· Permanent heliciform and stereoscopic curl, good elasticity and anti-wrinkle resilience, and lasting elasticity

· Lightweight fabric, soft and full feel, comfortable to wear

规格 Specifications	断裂强度（cN/ dtex） Breaking strength (cN/dtex)	湿态断裂伸长率（%） Wet breaking elongation (%)	沸水收缩率（%） Boiling water shrinkage rate (%)	含油率（%） Oil length(%)
75dtex/48F	3.0-3.2	40-50	⩽ 5	1.0±0.5

下游应用指导
The downstream application guidance

混织：可以与其他纤维进行混织，织造保暖内衣等

织造：可以用于针织面料，织造袜子

Weaving: Blending: It can be blended with other fibers to weave thermal underwear, etc

Weaving: It can be used for knitting fabrics and weaving socks

纤维应用
Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

Q&A

Q：双组分并列复合有色聚丙烯纤维的优点，你了解吗?

A：聚丙烯纤维比重小（0.91g/cm^3），耐磨损、耐腐蚀、沸水收缩率小、干爽排汗、保暖性好。通过复合纺丝技术，赋予了双组分丙纶纤维的新性能——优异的卷曲性和回弹性，同时原液着色的异色性，赋予了丙纶在颜色上的丰富性，拓宽了丙纶的用途，其竞争优势更明显。

Q: Do you know the advantages of bi-component composite colored polypropylene fiber

A: The polypropylene fiber has small specific gravity (0.91g/cm^3), good resistance to abrasion and corrosion, low boiling water shrinkage, good moisture-absorbing performance, and good warmth retention. Through composite spinning technology, the bi-component polypropylene fiber has new properties - excellent crimpiness and resilience. At the same time, the heterochromatosis of the dope-dying endows the polypropylene fiber with richness in color and expansion in use, giving it obvious competitive advantages.

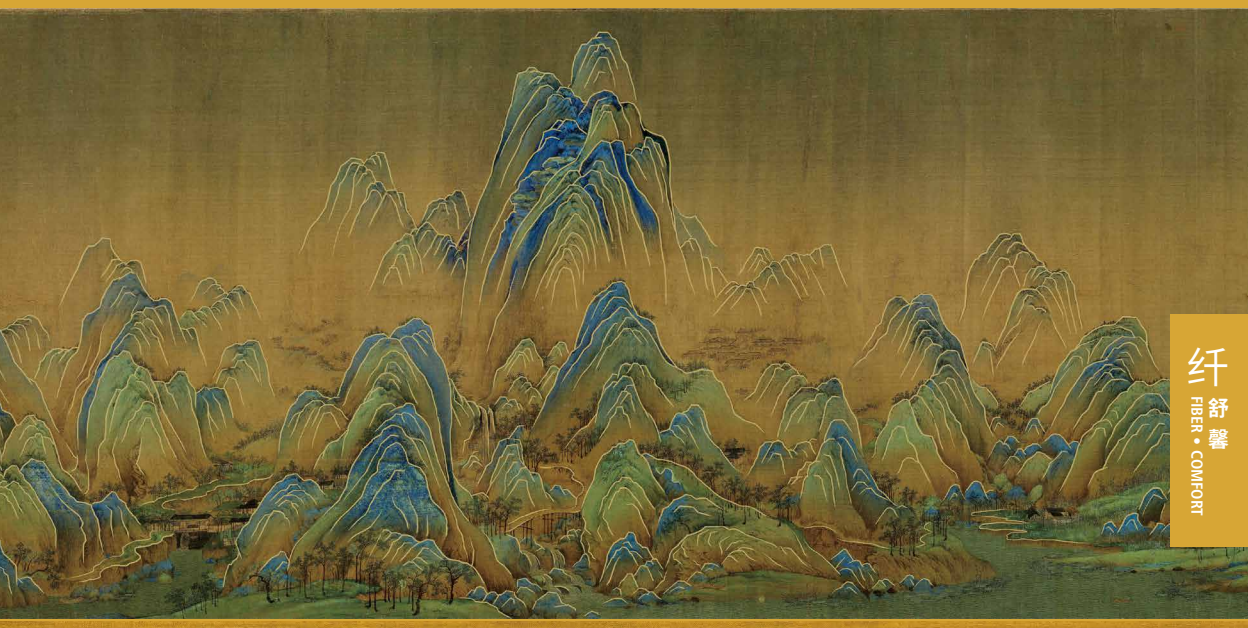
中国纤维流行趋势 China Fibers Fashion Trends 2023/2024

纤/舒馨

FIBER · COMFORT

挑战刻板印象，追求舒适自我。中国纤维一直走在迭代升级的路上，“创新”成就舒馨。中国纤维可以轻盈保暖，驱散冬天的寒冷，带来最贴心的温暖；可抵挡酷暑，为夏天带来丝丝清凉；可吸湿排汗、柔软亲肤、弹力无限，让身体随心所欲，轻松舒畅；可抑菌、防螨、消臭，让呵护伴随身边，无处不在。

Challenge stereotypes and pursue comfort. Chinese fiber industry has always been on the path of upgrading and iteration, making innovations to provide better and more comfortable products. The fiber can be warm and light, dispelling the cold and bringing the most intimate warmth in winter; It can withstand the heat and bring coolness and refreshing in summer; It is soft, skin-friendly and elastic, and can absorb moisture and facilitate perspire, making your body feel relaxed and comfortable; And it can inhibit bacteria, prevent mites and deodorize, caring you all the time no matter where you are.



舒感纤维，纵享柔美生活。创新开发水溶性聚酯成孔技术，织物优异的滴水扩散性与透气透湿速干性，开启自由跃动的无限可能；细旦搭档十字截面，亲肤柔滑，轻若无物，为消费者带来极致的舒适体验；将牛皮边角料变废为宝，18 种有益氨基酸贴身呵护皮肤健康，绽放美丽芳华。

Comfort fiber, comfort life. The water-soluble polyester pore-forming technology has been developed innovatively through which a large number of compact micropores can be produced, endowing the fiber with such excellent features as water diffusion, air permeability, moisture permeability and quick drying. Therefore, the product can create a comfortable micro-environment for consumers and make it difficult for them to leave once they get used to it; The combination of fine-denier and cross section, which endows the fabric with light, ultra-soft, skin-friendly, smooth and other functions, is able to offer consumers the best comfortable sensation at a touch; And the leftover materials of cattlehide is recycled and turned into treasures through wet spinning process. The 18 kinds of beneficial amino acids will offer consumers appropriate caring, ensuring their skin health.

COMFORT FIBER
舒感纤维

推荐纤维及品牌 Recommended fibers and brands

微孔聚酯纤维
Micropore polyester fiber

通用技术凯泰特纤 GENERTEC CHTF
通用技术中纺院 GENERTEC CTA
凯泰特纤 CTA

细旦异形聚酰胺 66 纤维
Fine-denier heterotypic polyamide 66 fiber

嘉华尼龙 PRUTAC

胶原蛋白改性再生纤维素纤维
Collagen modified regenerated cellulose fiber

ANWENS 安文思

通用技术凯泰特纤 GENERTEC CHTF

ANTA 通用技术中纺院 GENERTEC CTA

凯泰特纤

CTA

微孔聚酯纤维

Micropore polyester fiber

推荐理由

具有均匀度高的多微孔结构，增加了蒸发面积，提高了织物的透气性和吸湿速干性，带来舒适的穿着体验。

Recommendation Reasons

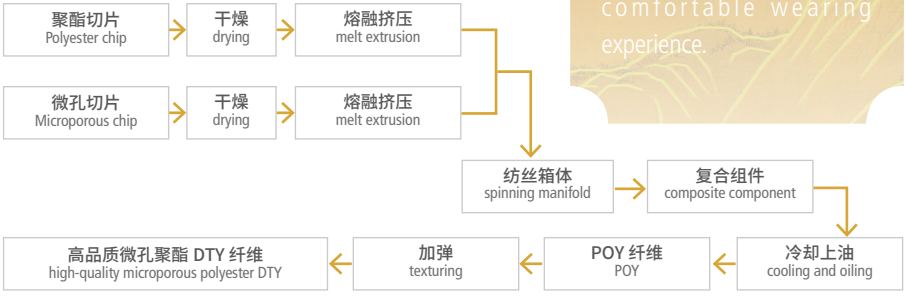
It has a microporous structure with high uniformity, which increases the evaporation area, improves the breathability and moisture-absorbing and quick-drying performance of the fabric, and brings comfortable wearing experience.

制备技术

Processing Technology

采用微孔切片与聚酯切片两种不同成分切片共混，经熔融纺丝制备。

Microporous chips and polyester chips are blended and prepared by melt spinning.



纤维及制品特点

Characteristics of Fiber and Product

主要规格

长丝：83dtex/48F、55dtex/48FDTY

Main Specifications

Filament: 83dtex/48F,55dtex/48F DTY

标准及认证

《涤纶低弹丝》（GB/T 14460-2015）

Standards and Certifications

Polyester drawn textured yarn (GB/T 14460-2015)

纤维性能与制品特点

• 具有微孔结构，比表面积为常规涤纶的 7 倍，面料的洗后吸水率为 211%，吸湿速干性优良

• 具有天然纤维自然的触感，优良的抗起球性能、保暖性

Fiber Performance and Product Features

· With microporous structure, the specific surface area is 7 times that of conventional polyesterfiber. The water absorption of the fabric after washing is 211%, and the moisture-absorbing and quick-drying performance is excellent

· Natural fiber touch, excellent anti-pilling performance and good warmth retention

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂伸长率（%） Elongation at break (%)	比表面积（m^2/g） Specific surface area (m^2/g)	抗起球等级（级） Anti-pilling grade (grade)
55dtex/48F	⩾ 3.14	24.37	0.3829	4
面料洗后吸湿率（%） Water absorption after washing (%)	面料蒸发速率（g/h） Rate of evaporation (g/h)	洗后吸湿性 Water absorption after washing	洗前速干性 Quick drying before washing	洗后速干性 Quick drying after washing
211	0.38-0.41	滴水扩散时间＜ 1s, 吸水率 211%，芯吸高度直向 182mm，横向 190mm Drip diffusion time ＜ 1s, water absorption 211% Wicking height: vertical 182mm, horizontal 190mm	蒸发速率 0.38g/h；透湿率：1.17×104g/(m^2•24h) Rate of evaporation 0.38g/h; water and vapor transfer ratio: 1.17×104g/(m^2•24h)	蒸发速率 0.41g/h；透湿率：1.05×10^4g/(m^2•24h) Rate of evaporation 0.41g/h ; water and vapor transfer ratio: 1.05×10^4g/(m^2•24h)

下游应用指导

The downstream application guidance

碱处理：碱处理 100°C下处理 30min，碱浓度 6-8%

Alkali treatment: alkali treatment at 100°C for 30min, with the concentration of 6-8%

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

Q&A

Q：微孔聚酯纤维的开发优势，你了解吗？

A：国内外虽相继开发出了许多微孔聚酯纤维产品，目前大多以短纤维为主，纤维强度低，成孔剂不均匀，染色存在色差。而微孔聚酯长丝及其相关产品，在致孔剂均匀分散、切片的聚合、可纺性稳定、纺丝工艺等方面做了极大的改进。

Q：微孔聚酯纤维的作用机理是什么？

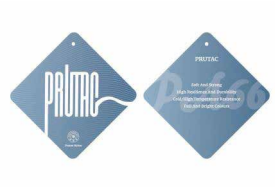
A：将常规聚酯切片与水溶性致孔切片进行复合纺丝制备高品质 DTY 纤维，纤维经织造后进行碱减量处理，其中的水溶性致孔成份溶于水中，因此纤维表面产生大量的微孔，增加了纤维及织物的表面积，从而使纤维的吸湿性得到极大的提高；其次，由于表面的微孔，增加了导湿通道，也极大的提升了导湿、透气、排汗速率。

Q: Do you know the development advantages of microporous polyester fiber?

A: Although many microporous polyester fiber products have been developed at home and abroad, most of them are staples at present, with low fiber strength, uneven pore-forming agent and color difference in dyeing. However, microporous polyester filament and its related products have made great improvements in the aspects of uniform dispersion of pore-foaming agent, polymerization of chips, stability of spinnability and spinning process.

Q: What is the functional mechanism of microporous polyester fiber?

A: The conventional polyester chips and water-soluble pore-forming chips are blended to prepare high-quality DTY fiber. After weaving, the fiber is subject to alkali peeling treatment. The water-soluble pore-forming components are dissolved in water and produce a large number of micropores on the fiber surface, which increases the surface area of the fiber and fabric, and greatly improves the moisture absorption of the fiber. In addition, the micropores on the surface also increase the moisture transmission channel, and greatly improve the moisture transmission rate, breathability and perspiration rate.



嘉华尼龙
PRUTAC

推荐理由

解决了聚酰胺 66 长丝细旦化和异形化，实现吸湿排汗及凉感功能，品质稳定。

Recommendation Reasons

It realizes the production of fine denier and heterotypic polyamide 66 filament yarns and endows it with moisture absorption and perspiration functions, cool feeling, and stable quality.

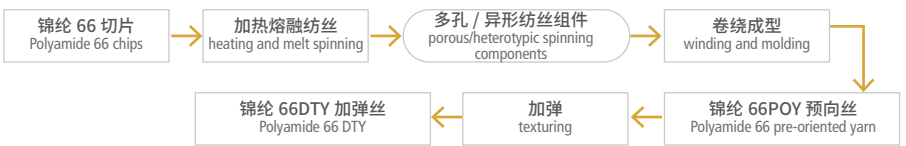
细旦异形聚酰胺 66 纤维

Fine-denier heterotypic polyamide 66 fiber

制备技术
Processing Technology

精准调控优化生产工艺，自主设计和优化喷丝板构造，通过专用的“+”型喷丝板，经熔融纺丝工艺制备具有吸湿排汗及凉感功能的细旦异形聚酰胺 66 纤维。

The production process is precisely controlled and optimized, and the spinneret structure is independently designed and optimized. Through the special "+" spinneret and the melt spinning process, the fine-denier heterotypic polyamide 66 fiber with moisture absorption and perspiration functions and cool feeling is prepared.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：44.4dtex/51F DTY 细旦轻质
44.4dtex/34F DTY 十字截面

44.4dtex/51F 纤维原貌图
44.4dtex/51F Fiber original appearance

44.4dtex/51F 截面图
44.4dtex/51FFiber cross section

Main Specifications

Filaments: 44.4dtex/51F DTY Fine-diner and light-weight
44.4dtex/34F DTY Cross section

44.4dtex/34F 纤维原貌图
44.4dtex/34F Fiber original

44.4dtex/34F 十字截面
44.4dtex/34F Fiber cross section

标准及认证

《锦纶 66 弹力丝》（FZ/T 54014-2009）

Standards and Certifications

Polyamide 66 draw textured yarn(FZ/T 54014-2009)

纤维性能与制品特点

- 单丝纤度低、异形截面、品质稳定
- 44.4dtex/51F，旦数小于 1，织物轻薄、超柔亲肤，丝滑触感
- 44.4dtex/34F，十字截面、吸湿排汗、凉感、亲肤

Fiber Performance and Product Features

· Low dpf, heterotypic section, stable quality

· 44.4dtex/51F. With a denier number less than 1, the fabric is light and thin, and ultra-soft and skin-friendly, with a silky touch

· 44.4dtex/34F, cross section, moisture absorption and perspiration, cool feeling, skin friendly

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂强度变异系数（%） Breaking strength deviation coefficient (%)	断裂伸长率（%） Elongation at break (%)	断裂伸长率变异系数 Breaking elongation deviation coefficient	卷曲收缩率（%） Crimp shrinkage rate (%)
44.4dtex/51F	⩾ 4	⩽ 5.0	27±4	⩽ 5.0%	⩾ 32

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂强度变异系数（%） Breaking strength deviation coefficient (%)	断裂伸长率（%） Elongation at break (%)
44.4dtex/34F	⩾ 3.4	⩽ 5.0	27±4
断裂伸长率变异系数 Breaking elongation deviation coefficient	卷曲收缩率（%） Crimp shrinkage rate (%)	吸湿排汗指标 Moisture absorption and perspiration index	
⩽ 5.0%	⩾ 25	芯吸高度⩾ 100mm Wicking height ≥100mm	滴水扩散时间⩽ 3s Drip diffusion time ≤3s

下游应用指导

The downstream application guidance

纺纱：产品为长丝，可省去纺纱流程，直接用于织造

织造：可用于制作针织与梭织面料

染整：由于聚酰胺 66 纤维染色时具有上染速率快的特点，对于单丝细度较细及异形截面的纤维，纤维结构与常规规格相差较大，在染色过程中易产生色差及染色不匀等现象。根据染料的配伍性设置分段保温，同时可考虑在染色前处理引入抗氧化剂等，改善染色效果。

Spinning: The product is filament yarn, which can be directly used for weaving without spinning process

Weaving: It can be used to make knitted and woven fabrics

Dyeing and finishing: Given the fast dyeing rate of polyamide 66 fiber during dyeing, the structure of the fiber with fine monofilament size and heterotypic section is quite different from the conventional specifications, which is easy to cause color difference and uneven dyeing during dyeing. Therefore, heat preservation is set in sections according to the compatibility of dyes. And the introduction of antioxidants in the pretreatment of dyeing is considered to improve the dyeing effect.

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓								
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓						✓	
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

Q&A

Q：细旦异形聚酰胺 66 纤维具备怎样的竞争优势?目前与哪些下游品牌建立了合作?

A：该纤维的研发，解决了聚酰胺 66 纤维细旦化、高端化等难题，成功将聚酰胺 66 纤维应用拓展到民用服饰领域。目前，该纤维用于瑜伽服及内衣领域，广受好评并得到 lululemon、Victoria's Secret 等知名品牌使用与认可。

Q: What are the competitive advantages of fine-denier heterotypic polyamide 66 fiber? At present, which downstream brands has it established cooperation with?

A: The R&D of this fiber has realized the production of fine-denier and high-end polyamide 66 fiber, and successfully expanded the application of polyamide 66 fiber to the field of civilian clothing. At present, this fiber is widely used in yoga clothing and underwear, and has been widely praised and recognized by well-known brands such as Lululemon and Victoria's Secret.

安文思
ANWENS

胶原蛋白改性再生纤维素纤维

Collagen modified regenerated cellulose fiber

推荐理由

采用牛皮边角料作为原料，废弃资源回收再利用，并且保留了胶原蛋白的特性，具有亲肤、抑菌防螨、防污防油等多种功能，实现高值化开发。

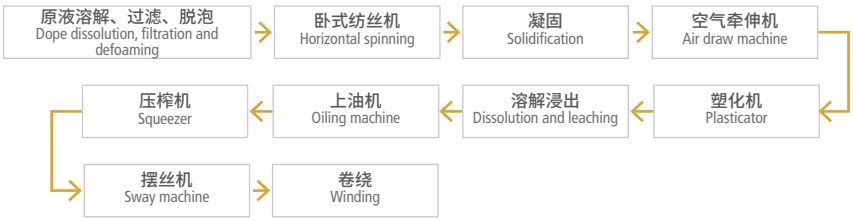
Recommendation Reasons

It uses cattlehide leftover materials as raw materials, recycling waste resources and retaining the characteristics of collagen. It has a variety of functions such as skin-friendly, anti-bacteria, anti-mite, anti-pollution and anti-oil, realizing high-value development.

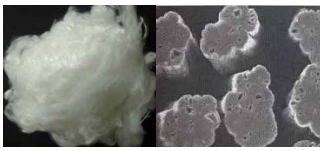
制备技术
Processing Technology

蓝牛皮原料使用 NMMO 溶剂溶解，经过滤、脱泡等工序获取纺丝原液，再通过卧式湿法纺丝工艺制备胶原蛋白改性再生纤维素纤维。

The blue cattlehide raw material is dissolved by NMMO solvent, and filtered and defoamed to obtain spinning dope. Then, the collagen modified regenerated cellulose fiber is prepared by horizontal wet spinning process.



纤维及制品特点
Characteristics of Fiber and Product



主要规格

短纤：1.55dtex×38mm

Main Specifications

Staple fiber: 1.55dtex×38mm

标准及认证

《生物质再生胶原蛋白短纤维企业标准》（Q/330281Q10101-2022）

Standards and Certifications

Standards for enterprises of biomass regenerated collagen staple fiber(Q/330281Q10101-2022)

纤维性能与制品特点

- 抑菌防螨防霉
- 含有多种氨基酸、总含量达 80.8%
- 织物质轻、手感柔软、蚕丝一样的柔和光泽
- 结晶度高、尺寸稳定性好易加工

Fiber Performance and Product Features

· Anti-bacteria, anti-mite and mildew proof
· Multiple amino acids with a total content of 80.8%
· Light fabric, soft feel, silk-like soft luster
· High crystallinity, good dimensional stability and easy processing

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂伸长率（%） Elongation at break (%)	卷曲数（个 /25mm） Crispation number (Pc/25mm)	异状纤维（mg/100g） Abnormal fiber (mg/100g)	回潮率（%） Moisture regain (%)
1.55dtex×38mm	⩾ 4.5	20±2.0	⩾ 8	⩽ 4	20±2
	抑菌率（%） Bacteriostasis rate (%)				防霉等级 Mildew proof level
	金黄色葡萄球菌 Staphylococcus aureus	大肠杆菌 Escherichia coli	白色念珠菌 Candida albicans	红色毛癣菌 Trichophyton rubrum	
	＞ 99	＞ 99	81	89.67	0 级

下游应用指导

The downstream application guidance

混纺：可以和天然纤维、化学纤维混纺

后整理：避免强酸强碱，同时生物酶也可能会对胶原纤维造成伤害，因生物酶种类繁多，建议先做小试

染色：建议低温活性染色，短时间定型温度不超过 160°C（为保证活性物质不受损，建议100°C以下）

洗涤：成品尽量使用中性洗涤剂

Blending: It can be blended with natural fiber and chemical fiber

After-finishing: Strong acid and alkali shall be avoided. Biological enzymes may also cause damage to collagen fibers. Since there are many kinds of biological enzymes, it is recommended to do aexperiment first

Dyeing: It is recommended to use low-temperature activity dyeing, and the short-time setting temperature shall not exceed 160°C (in order to ensure that the active substance is not damaged, the temperature is recommended to be less than 100°C)

Washing: It is recommended to use neutral detergent for finished products

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

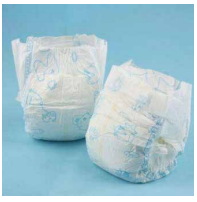
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓			✓					
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓								
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
	✓		✓					

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
							✓	✓
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				



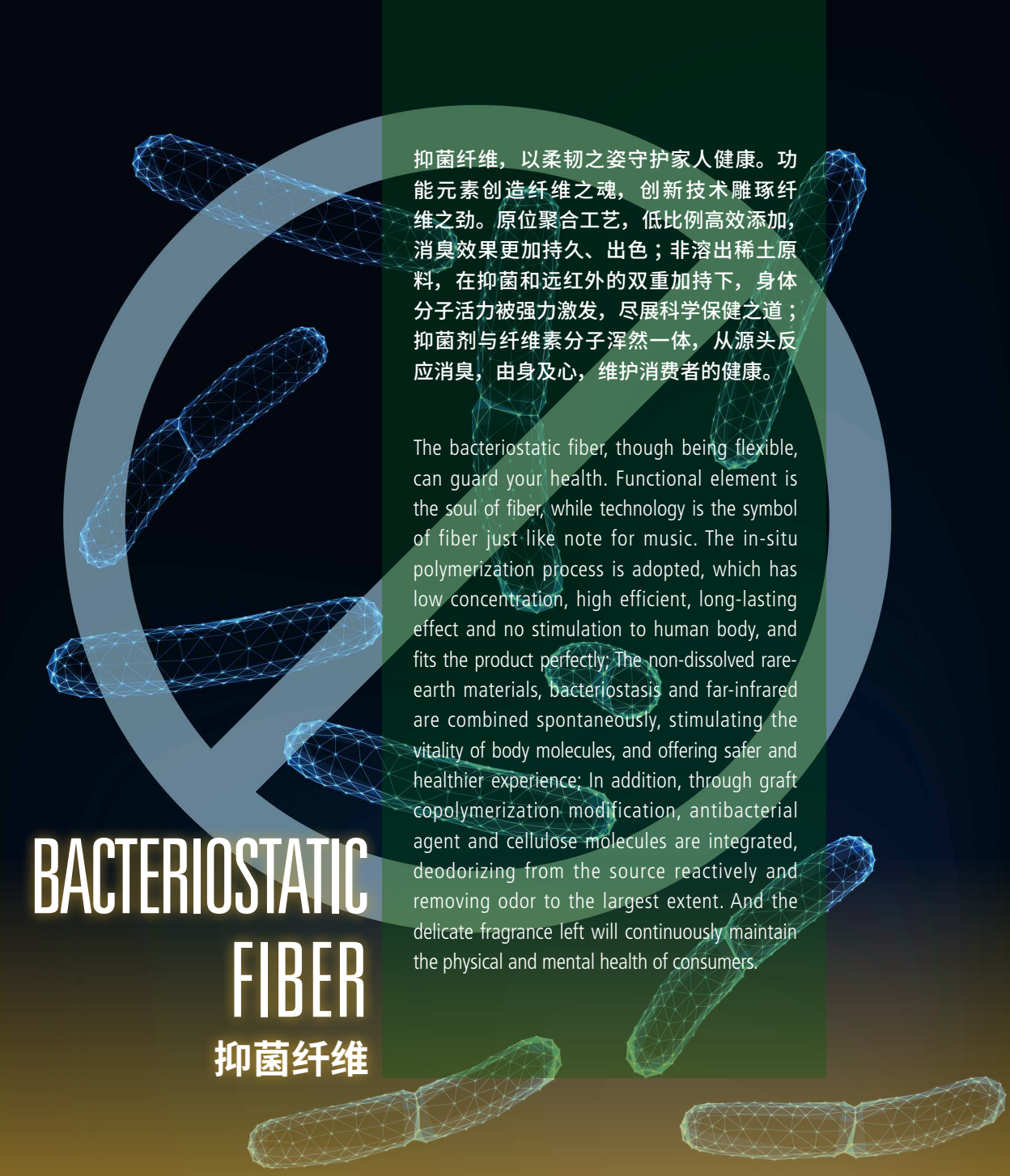
Q&A

Q：胶原蛋白改性再生纤维素具有哪些优势？

A：胶原蛋白改性再生纤维素纤维含有多种氨基酸，纤维亲和人体，物理性能优异，同时悬垂性好，并且具有桑蚕丝般的手感；胶原蛋白纤维本身有抑菌抗螨的特性，可用在高档的家纺领域和内衣领域；产品开发成本介于再生纤维素纤维和蚕丝之间，具有成本优势。

Q: What are the advantages of collagen modified regenerated cellulose?

A: Collagen modified regenerated cellulose fiber contains a variety of amino acids. The fiber is human friendly, and has excellent physical properties, good drapability, and a silk-like feel; With the anti-bacteria and anti-mite properties of collagen fiber, it can be used in the fields of high-end home textiles and underwear; The product, whose development cost is between that of regenerated cellulose fiber and that of silk, has cost advantages.



BACTERIOSTATIC FIBER
抑菌纤维

抑菌纤维，以柔韧之姿守护家人健康。功能元素创造纤维之魂，创新技术雕琢纤维之劲。原位聚合工艺，低比例高效添加，消臭效果更加持久、出色；非溶出稀土原料，在抑菌和远红外的双重加持下，身体分子活力被强力激发，尽展科学保健之道；抑菌剂与纤维素分子浑然一体，从源头反应消臭，由身及心，维护消费者的健康。

The bacteriostatic fiber, though being flexible, can guard your health. Functional element is the soul of fiber, while technology is the symbol of fiber just like note for music. The in-situ polymerization process is adopted, which has low concentration, high efficient, long-lasting effect and no stimulation to human body, and fits the product perfectly; The non-dissolved rare-earth materials, bacteriostasis and far-infrared are combined spontaneously, stimulating the vitality of body molecules, and offering safer and healthier experience; In addition, through graft copolymerization modification, antibacterial agent and cellulose molecules are integrated, deodorizing from the source reactively and removing odor to the largest extent. And the delicate fragrance left will continuously maintain the physical and mental health of consumers.

推荐纤维及品牌 Recommended fibers and brands

消臭氨纶
Deodorizing elastane

奥神 AOSHEN

稀土抑菌光蓄热聚酯纤维
Anti-bacteria polyester fiber based onrare-earth photo-thermal storage

镧光丝 catchwarm

抑菌消臭再生纤维素纤维
Anti-bacterial and deodorizing regenerated cellulose fiber

植物原 Naturefi

奥神
AOSHEN

消臭氨纶

Deodorizing elastane

推荐理由

在保持氨纶优异性能的同时实现低添加消臭功能，性能持久耐用，对人体安全无刺激。

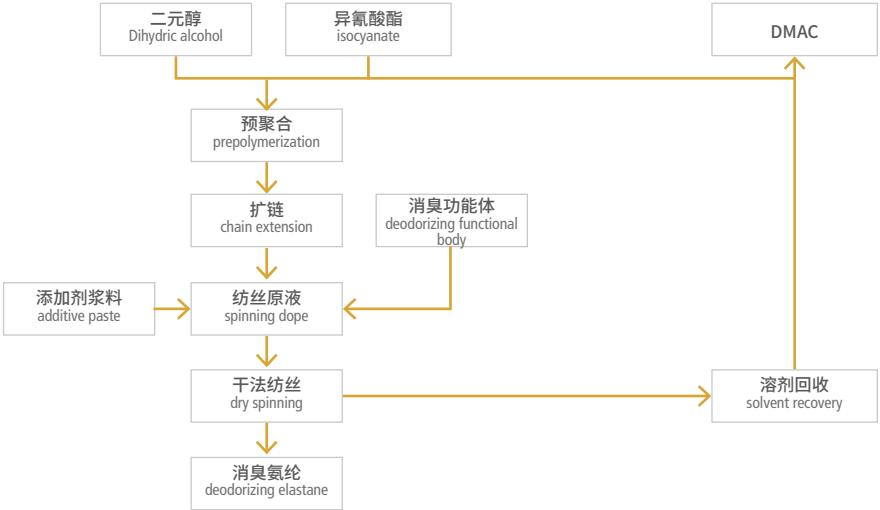
Recommendation Reasons

While maintaining the excellent performance of elastane, it realizes the deodorizing function with low addition, which is durable and safety and has no stimulation to human body.

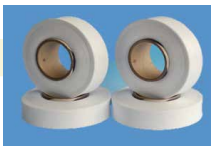
制备技术
Processing Technology

设计合成聚氨酯用消臭功能体，并引入到聚氨酯溶液中，通过干法纺制备得到消臭氨纶，赋予氨纶减少臭味的功能。

The deodorizing functional body for polyurethane is designed and synthesized, and introduced into the polyurethane solution. Then, the deodorizing elastane is prepared by dry spinning, endowing the elastane with deodorizing function.



纤维及制品特点
Characteristics of Fiber and Product



主要规格
长丝：20-140D

Main Specifications
Filament: 20-140D

标准及认证
《氨纶长丝》（FZ/T 54010-2014）
《消臭氨纶长丝》（Q/320700DZ05-2022）

Standards and Certifications
Elastane filament yarns (FZ/T 54010-2014)
Deodorizing elastane filament yarns (Q/320700DZ05-2022)

纤维性能与制品特点

• 保持氨纶优异的弹性性能
• 持久的消臭功能，有效应对汗味、体味、排泄物味等异味的主要成分氨气、醋酸等
• 优异的耐水洗性能，水洗 50 次后消臭保持率达到 90% 以上，对人体无刺激

Fiber Performance and Product Features

· Excellent elastic performance
· Persistent deodorizing function, which can effectively deal with the main components (ammonia gas, acetic acid, etc.) of such odors as sweat stink, body odor, excreta odor, etc.
· Excellent washable performance that the deodorizing retention rate is more than 90% after 50 times of washing; no irritation to human body

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	300% 拉伸时断裂强度 (cN/dtex) Breaking strength at 300% stretch (cN/dtex)	断裂伸长率（%） Elongation at break (%)	300% 时弹性回复率（%） Elastic recovery rate at 300% stretch (%)
22D	1.49	0.43	473	95.4
纤维静置 2 小时消臭效果 Deodorizing effect of fiber after standing for 2 hours			面料（棉 54%+ 锦纶 41%+ 消臭氨纶 4%）臭味化学成分的最低浓度减少率（%） Minimum concentration reduction rate (%) of odor's chemical components of the fabric (54% cotton + 41% chinlon + 4% deodorizing elastane)	
氨气减少率≥ 99.8%；醋酸减少率≥ 87.5%；异戊酸≥ 96.9%；2- 壬烯醛≥ 93% Ammonia gas reduction rate≥99.8%; Acetic acid reduction rate≥87.5%; Isovaleric acid ≥96.9%;Trans-2-nonen-1-al≥93%			氨气 74.7% Ammonia 74.7%　醋酸 86.9% Acetic Acid 86.9%	

下游应用指导
The downstream application guidance

纺纱：可与棉、锦纶、涤纶混纤使用。
染整：染色温度建议小于 120°C

Spinning: It can be blended with cotton, chinlon and polyester
Dyeing and finishing: The dyeing temperature is recommended to be less than 120°C

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓		✓					
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓		✓						
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
							✓	
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：抑菌氨纶也有一定的消臭功能，该产品与抑菌氨纶的区别在哪里？

A：抑菌不等于消臭。抑菌氨纶是通过抑制织物上细菌的生长与繁殖，从而减少臭味的产生。然而人体表面会不断产生汗液，抑菌氨纶无法保证 100% 的抑菌率，且抑菌需要一定的时间才能产生效果，因此不能完全避免臭味的产生。而消臭氨纶则是通过物理吸附、化学分解已经产生的臭味成分来减少织物或者环境中的臭味，有效应对生活中的异味烦恼。

Q: Anti-bacteria elastane also has certain deodorizing effect. What is the difference between this product and anti-bacteria elastane?

A: Anti-bacteria does not indicate deodorizing. Anti-bacteria elastane can reduce the generation of odor by inhibiting the growth and reproduction of bacteria on the fabric. However, human body produces sweat constantly. The anti-bacteria elastane cannot guarantee 100% anti-bacteria rate, and it takes a certain time to produce anti-bacteria effect. Therefore, the production of odor cannot be completely avoided. However, the deodorizing elastane can reduce the odor in the fabric or the environment through the physical adsorption and chemical decomposition of the odor components that have been produced, and effectively deal with the odor in life.

通用技术天津纺科
GENERTEC CTA-FIBER TECH

镧光丝
catchwarm

推荐理由
稀土基元素的添加改性，赋予纤维非溶出性高效抑菌及光蓄热保暖功能。

Recommendation Reasons
The addition and modification of rare-earth-based elements endow the fiber with the non-soluble and high-efficiency bacteriostasis and photo-thermal storage functions.

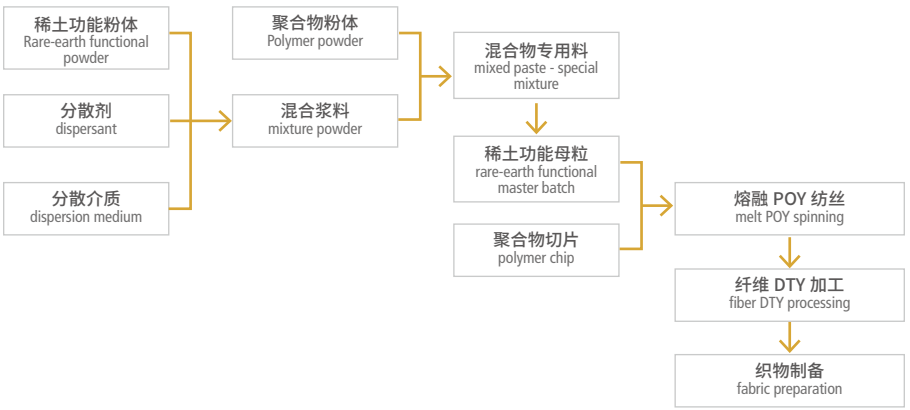
稀土抑菌光蓄热聚酯纤维

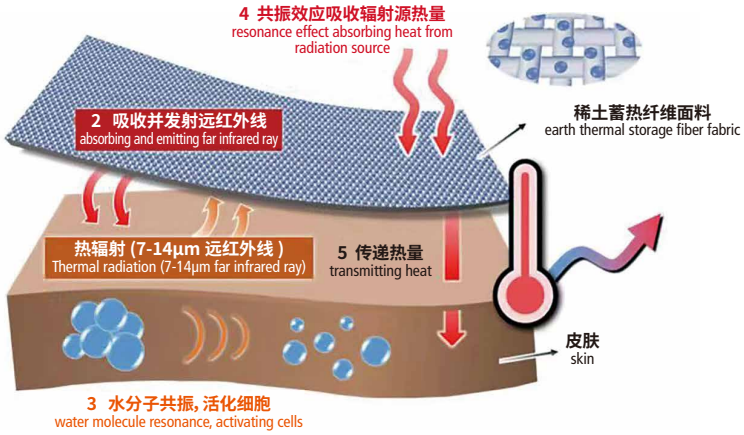
Anti-bacteria polyester fiber based onrare-earth photo-thermal storage

制备技术
Processing Technology

先将稀土功能粉体、分散剂、分散介质等按比例混合均匀，再与聚合物粉体进行共混，制备稀土功能聚合物粉体专用料。然后，通过复配不同比例的母粒助剂，制备稀土复合功能母粒。最后，通过熔融纺丝技术制备稀土光蓄热抑菌聚酯纤维。

The special materialofrare-earth functional polymer powder, is prepared by mixing the rare-earth functional powder, dispersant and dispersion medium in proportion, and then blending with the polymer powder. Afterwards, the rare-earth composite functional master batch is prepared by compounding master batch additives of different proportions. Finally,anti-bacteriapolyester fiber based on the rare-earth photo-thermal storage is prepared by melt spinning technology.





稀土蓄热升温原理：纤维中的稀土粒子可以吸收人体辐射出的远红外线，并以 93% 的发射率将远红外线高效返回人体，纤维与人体形成热循环效应，防止人体热量流失。皮肤吸收的远红外线可以加速细胞中水分子的运动，实现人体内部加热的效用。同时，由于稀土粒子与光辐射的共振效应，可以高效吸收近红外光，使其具有很好的光蓄热性能，达到外部升温的效果。

The principle of rare-earth thermal storage and heating-up: the rare-earth particles in the fiber can absorb the far infrared ray radiated from human body, and efficiently return the far infrared ray to the body with the emissivity of 93%. The fiber and the body can form a thermal cycle effect to prevent the loss of heat from body. The far infrared ray absorbed by the skin can accelerate the movement of water molecules in cells and achieve the effect of heating inside the body. At the same time, due to the resonance effect of rare-earth particles and light radiation, near-infrared lightcan beefficiently absorbed, making it have good photo-thermal storage performance and achieve the effect of external heating-up.

纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：82.5dtex/48-72F DTY

Main Specifications

Filament: 82.5dtex/48-72F DTY

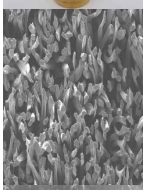
标准及认证

《涤纶低弹丝》（GB/T 14460-2008）

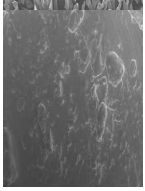
Standards and Certifications

Polyester drawn textured yarn(GB/T 14460-2008)

纤维图
Fiber diagram



纤维横截面
Fiber cross section



聚酯中稀土材料分布
Distribution of rare earth materials in polyester

纤维性能与制品特点

• 稀土原料添加改性具有零溶出、抑菌叠加保暖功能

• 高效持久抑菌，对金黄色葡萄球菌、大肠杆菌以及白色念珠菌的抑菌率大于97%，对人体安全友好

• 光蓄热较好，远红外发射 0.93、远红外辐射温升为 2.4°C

Fiber Performance and Product Features

· With the addition and modification of rare-earth raw materials, the fiber is non-soluble, anti-bacteria and warm-keeping

· Highly effective and durable anti-bacteria that the anti-bacterial rate of staphylococcus aureus, Escherichia coli and candida albicans is more than 97%; safe and skin friendly to human

· Far infrared ray icon: good photo-thermal storage performance, far infrared emission: 0.93, far infrared radiation temperature rise: 2.4°C

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity	断裂伸长率（%） Elongation at break	130°C干热收缩率（%） Dry-hot shrinkage at 130°C	回潮率（%） Moisture regain
82.5dtex/48F	3.08	29.16	2.1	0.6%
抑菌率 Bacteriostasis rate		远红外发射 Far infrared emission	远红外辐射温升（°C） Far infrared ray radiation temperatu	重金属含量（mg/kg） Extractable Metal Content
金黄色葡萄球菌＞ 99% 白色念珠菌＞ 97% 大肠杆菌＞ 99% Staphylococcus aureus ＞ 99% Candida albicans ＞ 97% Escherichia coli ＞ 99%		0.93	2.4	锑：0.5 铜：0.2 Sb:0.5 Cu:0.2

下游应用指导

The downstream application guidance

纺纱：可以纯纺，也可与其他纤维交织、包覆等组合使用。

染色：由于纤维本身具有一定的颜色，故在染色过程中颜色的选择需要考虑本身色带来的影响

Spinning: It can be used purely or interwoven, wrapped with other fibers.

Dyeing: Because of the fiber itself with a certain color, the influence of its own color should be taken into considerationwhen selecting color in the dyeing process.

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓		✓					
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Winter jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
✓					✓			
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓	✓	✓						

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓								
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：稀土元素在纺织品的研发及应用情况，你了解吗?

A：目前市场上稀土元素在纺织品的应用比较广泛，如前处理、染色、后整理阶段均有所应用，同时在材料端也有所深入。天津纺科利用自身的技术和设备成功的将聚酯材料与稀土材料进行优势结合，研发出更加适合市场的稀土类功能纤维。利用稀土抑菌光蓄热聚酯纤维制备的面料具有高发射率、轻薄舒适、保暖保健等特点，有较高的经济效益和市场欢迎度。

Q: Do you know the development and application of rare-earth elements in textiles?

A: At present, rare-earth elements have been widely used in textiles in the market, such as pretreatment, dyeing, after-finishing, and material. Tianjin Textile Science&Technology successfully combines the advantages of polyester and rare-earth materials with its own technology and equipment, and develops the rare-earth functional fiber that is more suitable for the market. The fabric made of rare-earth photo-thermal storage anti-bacteria polyester fiber, with the characteristics of high emissivity, light and comfortable, warm and healthy etc., has high economic benefits and market popularity.

BetterTex 邦特纤维

植物原
Naturefi

推荐理由
采用天然植物及矿物元素，降低或切断异味气体产生的途径，并快速清除氨气、醋酸等异味，达到抑菌除臭双重功能。

Recommendation Reasons
Natural plants and mineral elements are adopted to reduce or cut off the production way of odor gas, and quickly absorb the odor such as ammonia gas and acetic acid etc., achieving the dual functions of anti-bacteria and deodorizing.

抑菌消臭再生纤维素纤维

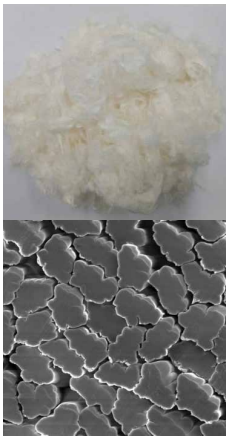
Anti-bacterial and deodorizing regenerated cellulose fiber

制备技术
Processing Technology

将天然植物类、天然矿石类提取物与再生纤维素纤维纺丝液共混，通过湿法纺丝工艺制备抑菌消臭再生纤维素纤维。

The natural plants and mineral extracts are blended with the spinning solution of regenerated cellulose fiber to prepare anti-bacterial and deodorizing regenerated cellulose fiber through wet spinning process.

纤维及制品特点
Characteristics of Fiber and Product



主要规格

短纤：1.56dtex×38mm、5.56dtex×51mm

Main Specifications

Staple fiber: 1.56dtex×38mm,5.56dtex×51mm

标准及认证

《粘胶短纤维》（GB/T 14463-2008）

Standards and Certifications

Viscose staple fiber (GB/T 14463-2008)

纤维性能与制品特点

- 具有优良的抑菌功能，能够防止异味气体再次产生。对三种常见菌种的抑菌率可达到 90% 以上（AAA 级）
- 高效抑菌除臭，对氨气、醋酸的清除效果好
- 织物亲肤舒适，手感柔软

Fiber Performance and Product Features

· With excellent anti-bacteria function, it can prevent the reproduction of odor gas. The anti-bacterial rate of three common bacteria can reach more than 90% (AAA Grade)

· High-effective anti-bacteria and deodorizing, good removal effect on ammonia gas and acetic acid

· Skin-friendly, comfortable and soft

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂伸长率（%） Elongation at break (%)	倍长纤维含量（mg/100g） Double length fiber content (mg/100g)	疵点（mg/100g） Defects(mg/100g)
1.56dex×38mm	⩾ 1.84	23.66	5.0	0.0
抑菌指标（抑菌消臭再生纤维素纤维 28%、棉 65.3%、氨纶 6.7%） Anti-bacteria index (Anti-bacterial and deodorizing regenerated cellulose fiber 28%Cotton 65.3%,Elastane6.7%)			消臭指标（棉 49.7%、抑菌消臭再生纤维素纤维 27.4%、聚酯纤维 22.9%） Deodorizing index (Cotton 49.7%,Anti-bacterial and deodorizing regenerated cellulose fiber27.4%, Polyester Fibers 22.9%)	
金黄色葡萄球菌：99.6%　大肠杆菌：98.6% 白色念珠菌：97.5% Staphylococcus aureus :99.6%　Escherichia coli :98.6% Candida albicans :97.5%			氨气异味成分浓度减少率：84.4% 醋酸异味成分浓度减少率：97.3 Concentration reduction rate of ammonia gas's component: 84.4% Concentration reduction rate of acetic acid's component: 97.3	

下游应用指导

The downstream application guidance

纺纱：可以纯纺，也可与其他纤维进行混纺，混纺建议添加比例不低于 30%

织造：可纺成纱线，用于制作针织或梭织面料；也可用于生产水刺、针刺等无纺布

染整：建议使用活性染料，进行回酸处理，低硬度水质加入冰醋酸，PH 5 ～ 5.5 左右，清洗 10 ～ 15 分钟

Spinning: It can be spun solely or blended with other fibers, and the recommended blending proportion is not less than 30%

Weaving: It can be spun into yarn for making knitted or woven fabrics; It can also be used to produce spunlaced, needle-punched and other non-woven fabrics

Dyeing and finishing: It is recommended to use reactive dyes and carry out acid recovery treatment; add glacial acetic acid to the water with low hardness (PH 5~5.5), and wash for 10~15 minutes

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓		✓	✓		✓		
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓		✓				✓		
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
				✓				

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
							✓	✓
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
			✓					
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

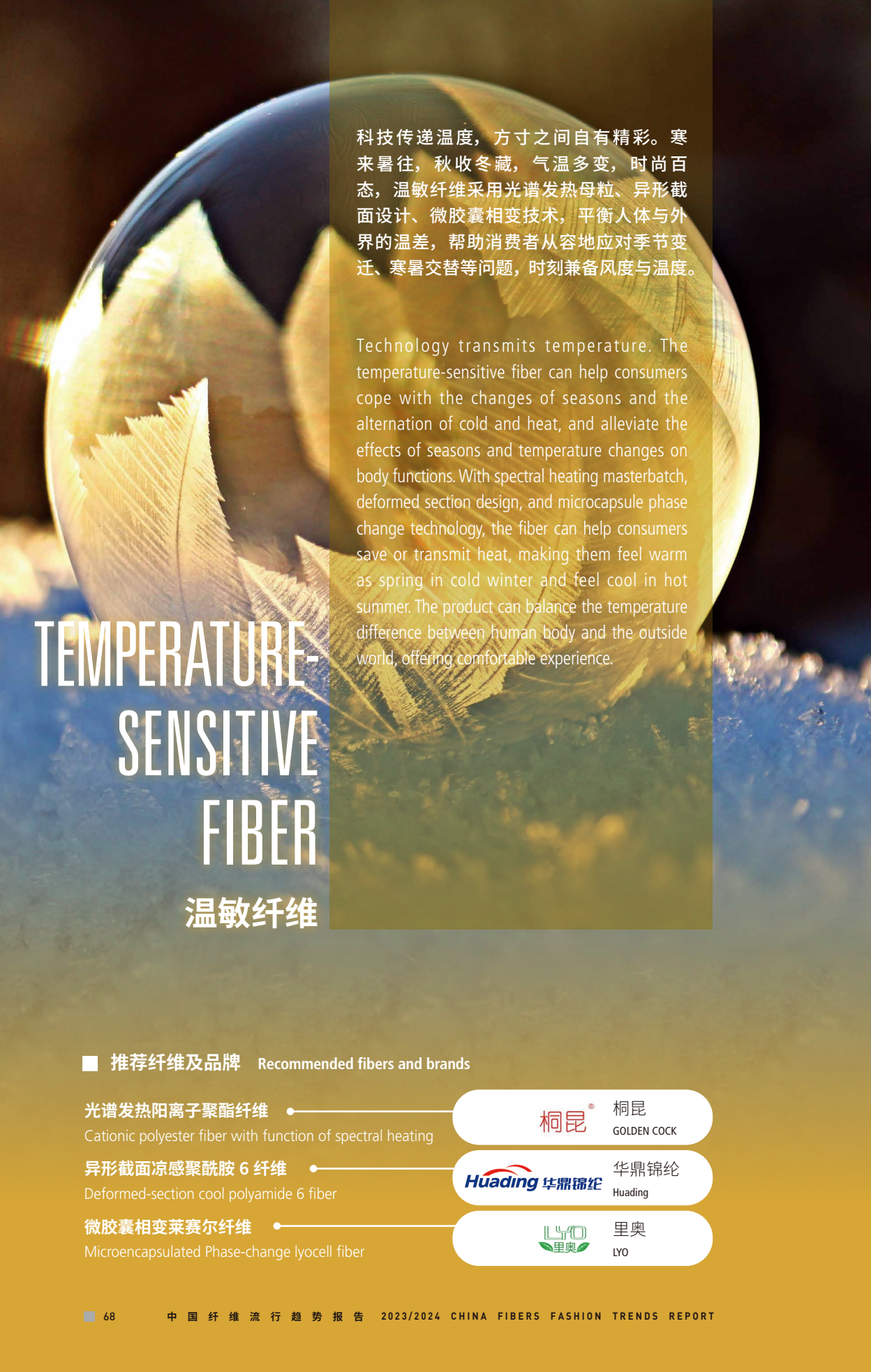
Q&A

Q：抑菌消臭再生纤维素纤维的开发背景及市场前景，你了解吗？

A：人类生存环境中存在各种各样的细菌和霉菌，还有一些依赖人体汗液滋生繁殖的“臭味菌”。在湿热环境下，“臭味菌”在皮肤上大量繁殖，容易在皮肤表面生成挥发性、有气味的物质如醋酸、氨气等，还容易引发某些皮肤病。纤维受到其酸性或者碱性代谢物的作用下也容易发生降解、变色。抑菌消臭再生纤维素纤维满足人们对纺织品卫生功能的要求，在中、高端市场接受度高，市场占有率持续增长，具有良好的发展前景。

Q: Do you know the development background and market prospect of anti-bacterial and deodorizing regenerated cellulose fiber?

A: There are various kinds of bacteria and molds in the human living environment, as well as some "stink bacteria" that rely on human sweat to breed and reproduce. In a hot and humid environment, "stink bacteria" multiply on the skin in large numbers, which is easy to produce volatile and odorous substances such as acetic acid and ammonia gas on the skin surface, and even causes some skin diseases. And conventional fiber is also prone to degradation and discoloration under the action of its acidic or alkaline metabolites. However, the anti-bacterial and deodorizing regenerated cellulose fiber meets consumers' requirements for the sanitary function of textiles. With high acceptance in the medium and high-end markets, it has ever-increasing market share and a good development prospect.



TEMPERATURE-SENSITIVE FIBER

温敏纤维

科技传递温度，方寸之间自有精彩。寒来暑往，秋收冬藏，气温多变，时尚百态，温敏纤维采用光谱发热母粒、异形截面设计、微胶囊相变技术，平衡人体与外界的温差，帮助消费者从容地应对季节变迁、寒暑交替等问题，时刻兼备风度与温度。

Technology transmits temperature. The temperature-sensitive fiber can help consumers cope with the changes of seasons and the alternation of cold and heat, and alleviate the effects of seasons and temperature changes on body functions. With spectral heating masterbatch, deformed section design, and microcapsule phase change technology, the fiber can help consumers save or transmit heat, making them feel warm as spring in cold winter and feel cool in hot summer. The product can balance the temperature difference between human body and the outside world, offering comfortable experience.

推荐纤维及品牌 Recommended fibers and brands

光谱发热阳离子聚酯纤维
Cationic polyester fiber with function of spectral heating

异形截面凉感聚酰胺 6 纤维
Deformed-section cool polyamide 6 fiber

微胶囊相变莱赛尔纤维
Microencapsulated Phase-change lyocell fiber

桐昆 GOLDEN COCK

华鼎锦纶 Huading

里奥 LYO

桐昆
GOLDEN COCK

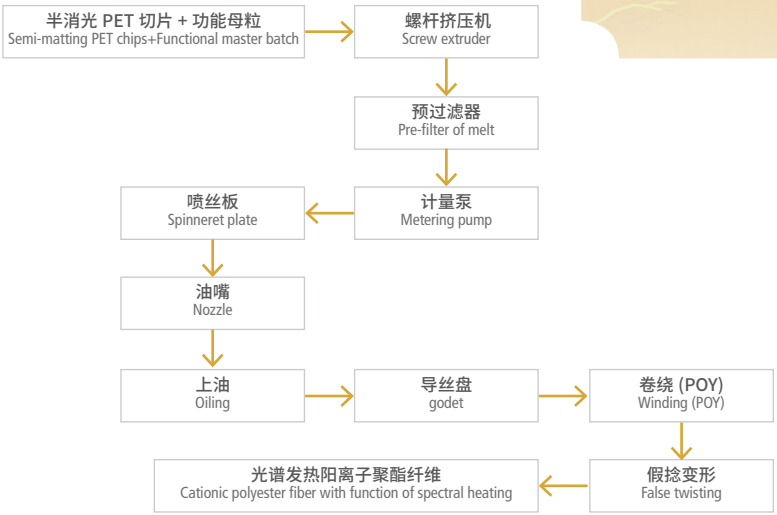
光谱发热阳离子聚酯纤维

Cationic polyester fiber with function of spectral heating

制备技术
Processing Technology

以阳离子聚酯切片为原料，添加光谱发热功能母粒，通过熔融纺丝和加弹工艺，制备出光谱发热阳离子聚酯纤维。

With cationic polyester chips as raw materials, the spectral heating functional master batch is added to prepare cationic polyester fiber with function of spectral heating through melt spinning and texturing process.



推荐理由

主动吸收太阳辐射中的可见光、红外线以及人体的散发热，起到蓄热保暖效果。叠加阳离子可染特性，纤维具有较强的应用潜能和市场竞争力。

Recommendation Reasons

The visible light, infrared ray in the solar radiation and the heat emitted by the human bodycan be actively absorbed and retained. Combined with the dyeability of cation, the fiber has strong application potential and market competitiveness.

纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：83 ～ 242dtex/36 ～ 144F DTY

Main Specifications

Filaments: 83~242dtex/36~144F DTY

标准及认证

《涤纶低弹丝》（GB/T 14460-2015）

Standards and Certifications

"Polyester drawn textured yarn" (GB/T 14460-2015)

纤维性能与制品特点

- 全光谱吸热、光温响应
- 蓄热保暖
- 低温易染、色彩艳丽

Fiber Performance and Product Features

· Full spectrum heat absorption, photo-thermal response

· Warm-keeping

· Easy to dye at low temperature, colorful

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂伸长率（%） Elongation at break (%)	卷曲稳定度（%） Crimp stability (%)	染色均匀度（灰卡） Dyeing uniformity (Gray card)
70dtex/36F	⩾ 2.5	22	⩾ 60%	⩾ 4 级
纤维升温指标 Fiber temperature-rise index	20°C、65%RH、300W 灯照 20°C ,65%RH,300W light		面料（100% 纯纺面料） Fabric (100% pure yarn fabric)	
	最大升温值（°C） Maximum temperature rise(°C)	平均升温值（°C） Mean temperature rise(°C)	远红外发射 Far infrared emission	远红外辐射温升（°C） Temperature rise of far infrared radiation (°C)
	⩾ 15	⩾ 5	0.93	1.9
染色指标 Dyeing index	阳离子染料染色试验（定性鉴别）FZ/T 54037-2011 附录 A Dyeing test of cationic dye (qualitative identification) FZ/T 54037-2011 Appendix A			
	通过 Pass			
面料保暖性能 Warm-keeping performance of fabric	面料克罗值（100% 纯纺）GB/T 35762-2017 Fabric CLO value (100% pure yarn)GB/T 35762-2017			
	0.398			

下游应用指导
The downstream application guidance

纺纱：可与其他纤维交织获得拼色效果，使用时注意调节纱线的喂入张力

织造：主要面向针织市场，用于制备保暖内衣、袜子等，也可用于制备地毯、毛毯等

染整：建议使用分散低温染料，染色温度和热定型温度≤ 115°C

Spinning: It can be interwoven with other fibers to achieve color matching effect. Pay attention to adjusting the feeding tension of yarn when using

Weaving: Mainly for the knitting market, it is used to prepare thermal underwear, socks, carpets, blankets, etc.

Dyeing and finishing: It is recommended to use disperse low-temperature dyes, with the dyeing temperature and heat setting temperature≤115℃

纤维应用

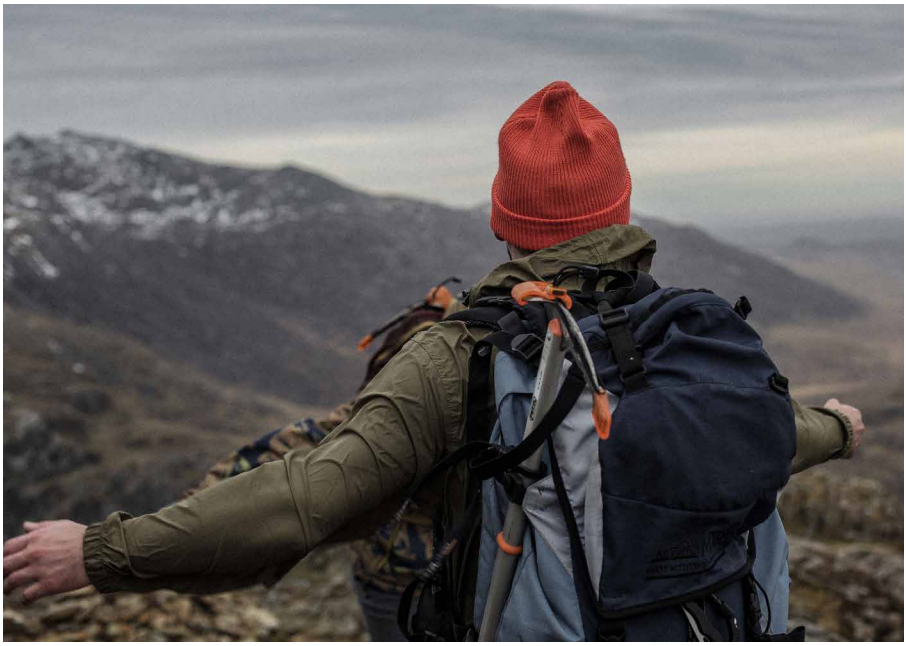
Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓	✓							
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

产业用纺织品 Industrial textiles

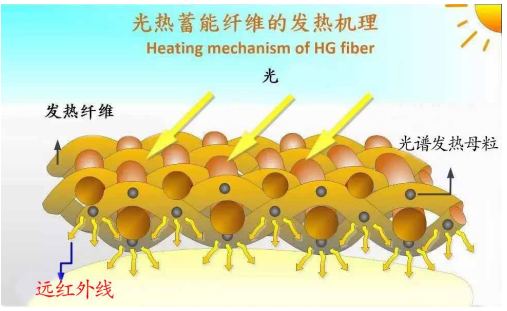
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓								
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				



Q&A

Q：光谱发热阳离子聚酯纤维是如何做到温度调节的?

A：该纤维中含有纳米 - 微米级光谱发热功能粉体，在光、热条件下，可主动吸收太阳光中的可见光与红外线，以及人体向外辐射的红外线。在脱离光照的情况下，这些功能粉体会将储存的能量释放，通过辐射远红外线的方式将能量反射至人体表面皮肤，从而起到蓄热保暖效果。



Q: How does the cationic polyester fiber with function of spectral heating achieve temperature regulation?

A: With light and heat, the visible light and infrared ray in solar radiation and the infrared radiation from human body with nano-micron spectral heating functional powdersin the fiber can be actively absorbed. In the absence of light, these functional powders will release the stored energy and reflect the energy to the skin of human body by radiating far infrared rays, thus achieving the effect of warm-keeping.

华鼎锦纶
Huading

异形截面凉感聚酰胺 6 纤维

Deformed-section cool polyamide 6 fiber

制备技术
Processing Technology

以相对粘度稳定的切片为原料，超凉感母粒作为添加物进行高温熔融共混，通过独特的异型截面设计，配合先进的纺丝工艺生产出异形凉感聚酰胺 6 纤维。

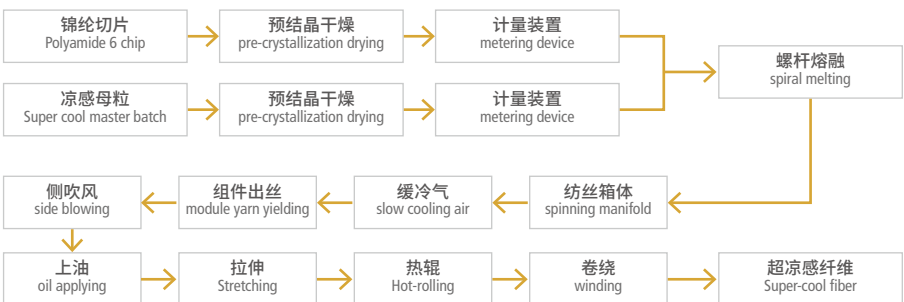
The chips with relatively stable viscosity are used as raw materials and super cool master batch as additives for high-temperature melt blending. And the deformed cool polyamide 6 fiber is produced through unique section design and advanced spinning technology.

推荐理由

通过异形截面设计，使纤维表面形成扁形沟槽，产生毛细芯吸效应，提升汗液导出速度。结合高导热母粒，加速热量扩散，持久保持凉感与舒适。

Recommendation Reasons

With deformed section, the fiber surface is a flat groove which has capillary wicking effect and can improve the speed of perspiration. Combined with high thermal conductivity master batch, it can accelerate heat diffusion and maintain cool and comfortable constantly.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：44-78dtex/12-68F FDY

Main Specifications

Filaments: 44-78dtex/12-68F FDY

标准及认证

《锦纶牵伸丝》（GB/T 16603-2017）

Standards and Certifications

"Polyamide drawn yarn" (GB/T 16603-2017)

纤维性能与制品特点

- 具有高导热性、接触瞬间凉感
- 独特的纤维横截面、吸湿排汗、功能持久
- 织物轻薄柔软，亲肤透气、穿着舒适

Fiber Performance and Product Features

· High thermal conductivity, instant cool feeling

· Unique fiber cross-section, moisture absorption and perspiration, lasting function

· Light-weight and soft fabric, breathable and comfortable to wear

产品规格 Specifications	断裂强度 (cN/ dtex) Breaking strength(cN/dtex)	断裂伸长率 (%) Elongation at break (%)	条干不匀率 (%) Yarn unevenness (%)	热收缩率 (%) Thermal shrinkage (%)	染色均匀度 Dyeing uniformity	凉感系数 (J/（cm^2•s) Cooling coefficient ($J/(cm^2•s)$)
78dtex/68F	5.3	26.4	1.28	8.8	4-5 级 Grade 4-5	0.27

下游应用指导
The downstream application guidance

参考常规聚酰胺 6 纤维

Refer to conventional polyamide 6 fiber

纤维应用
Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓						✓		
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
			✓				✓	✓
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

Q&A

Q：异形截面凉感聚酰胺 6 纤维与普通凉感纤维有什么不同?

A：异形截面凉感聚酰胺 6 纤维主要对纤维的横截面进行异形设计，使表面带有扁形沟槽，以此来增加纤维的芯吸效应，并扩大面料与皮肤的接触面积，达到吸湿排汗的效果。其次，添加高导热材料，进一步强化凉感效果，与国标 GB/T 35263 设定值相比瞬间凉感值提高了至少 50% 以上，且物理性能比常规标准规定值更优，增加了使用寿命的同时也达到了高凉感值的目的。

Q: What are the differences between deformed-section cool polyamide 6 fiber and ordinary cool fiber?

A: Firstly, with deformed section, the cool polyamide 6 fiber surface is a flat groove which has better wicking effect. And the contact area of the fabric and the skin is expanded to achieve moisture absorption and perspiration. Secondly, high thermal conductivity materials are added to further strengthen the cooling effect. Compared with the set value of the national standard GB/T 35263, the instantaneous cooling value is increased by at least 50%. And the physical performance is better than the value specified in the conventional standard. The service life is increased while the high cooling value being achieved.

里奥

LYO

推荐理由

微胶囊相变材料与莱赛尔纤维制造技术相结合，产品热焓值高、双向温度调节，可无限次可逆循环，提升莱赛尔纤维差异化水平，满足高端品牌需求。

Recommendation Reasons

Microencapsulated phase-change materials are combined with Lyocell fiber manufacturing technology, and the products have high enthalpy value, two-way temperature adjustment, and infinite reversible circulation, which improves the differentiation level of Lyocell fiber and meets the needs of high-end brands.

微胶囊相变莱赛尔纤维

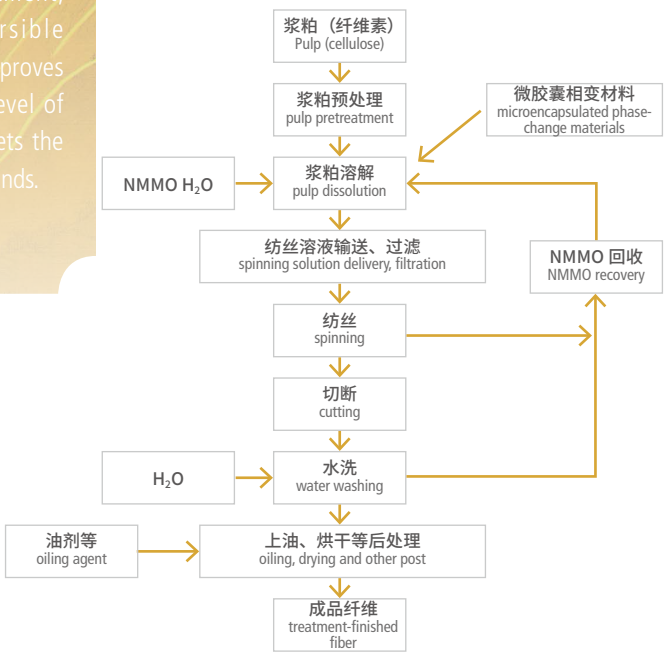
Microencapsulated Phase-change lyocell fiber

制备技术

Processing Technology

浆粕溶解于 NMMO 过程中加入一定比例的微胶囊，经湿法纺丝制得微胶囊相变莱赛尔纤维。

In the process of dissolving pulp in NMMO, a certain proportion of microcapsules are added, and microencapsulated phase-change Lyocell fiber isprepared by wet spinning.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

短纤：6.7dtex×60mm

Main Specifications

Staple fiber: 6.7dtex×60mm

标准及认证

《莱赛尔纤维》（FZ/T 52019-2011）

Standards and Certifications

Lyocell fiber (FZ/T 52019-2011)

纤维性能与制品特点

- 生物质，生产过程绿色环保、废弃后可回归自然
- 干、湿强度高、吸湿透气、亲和舒适
- 可染性好、染色后色泽鲜艳、色牢度优良
- 自动吸热和放热、无限次可逆循环，具有良好的温度缓冲，使人体处于舒适的状态

Fiber Performance and Product Features

· Biomass, the production process is green and environmentally-friendly,and the fiber can achieve the return to nature after being abandoned

· High dry and wet intensity, moisture absorption and breathability, affinity and comfort

· Good dyeability, bright color and excellent color fastness after dyeing

· Automatic heat absorption and release, infinite reversible circulation, and good temperature buffer, making the human body in a comfortable state

产品规格 Specifications	干断裂强度 (cN/dtex) Breaking tenacity in dry state(cN/ dtex)	干断裂伸长率 (%) Breaking elongation in dry state (%)	湿断裂强度 (cN/dtex) Breaking tenacity in wet state (cN/ dtex)	熔融热焓值 (J/g) Enthalpy value of fusion (J/g)	相变温度 (°C) Phase-change temperature (°C)
6.7dtex×60mm	1.76	15.84	1.46	70	28-32

下游应用指导

The downstream application guidance

漂白：尽量避免漂白，漂白会使其功能性明显下降

染整：高温后处理会造成有效成分流失，并且亲油性物质会被蒸发。印染时，要尽量降低处理温度和停留时间

清洁：仅可使用阳离子型的柔软剂和抗静电剂，避免使用表面活性剂

Bleaching: Bleaching shall be avoided as much as possible, which will obviously reduce its functionality

Dyeing and finishing: High-temperature post-treatment will cause the loss of effective components and the lipophilic substances will be evaporated. When printing and dyeing, the treatment temperature and retention time shall be reduced as much as possible

Cleaning: Only cationic softeners and antistatic agents can be used, and surfactants shall be avoided

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

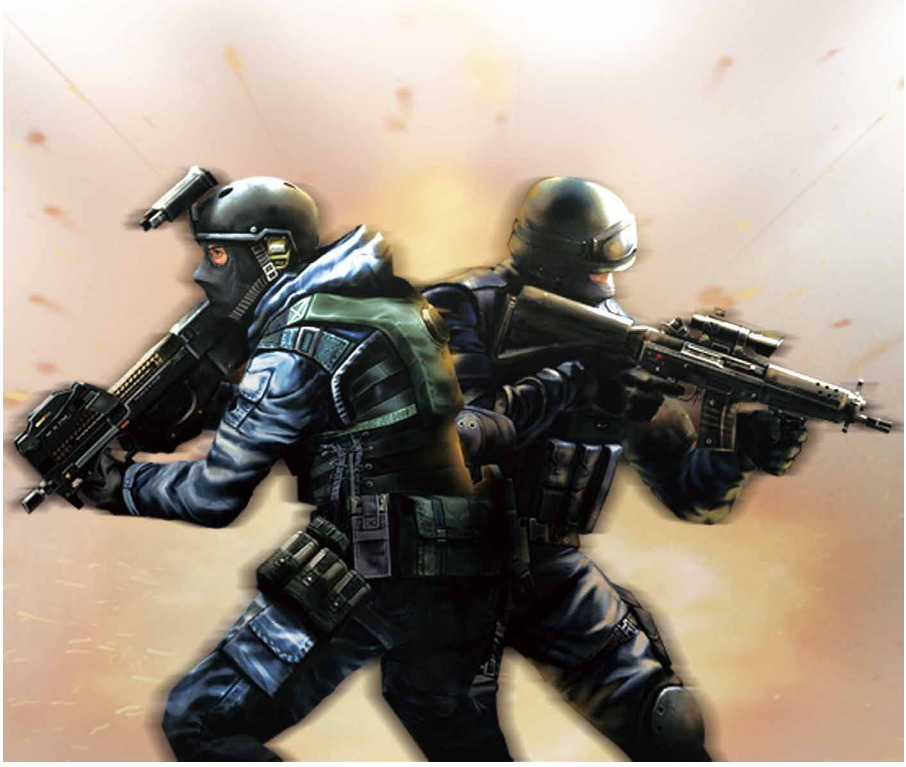
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							
✓	✓							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓				✓				

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓					✓	✓	
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
			✓					
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				



Q&A

Q：微胶囊相变莱赛尔纤维的优势体现在哪里？

A：该纤维是以新型再生环保纤维素纤维为基质，添加相变材料复合而成。纤维素溶剂 NMMO99% 以上可以回收利用，整个生产无有毒有害废水废气排放，生产环保无污染。纤维焓值更高，熔融热焓值可达 70J/g，相变温度 28°C -32°C，强力高，抱合力好。避免了因产生静电导致微胶囊易破裂等问题。

Q: What are the advantages of microencapsulated phase-change Lyocell fiber?

A: The fiber is compounded with a new type of regenerated environment-friendly cellulose fiber as the matrix and phase-change materials. More than 99% of the cellulose solvent NMMO can be recycled, and the whole production has no toxic and harmful waste water and waste gas discharge, and the production is environment-friendly and pollution-free. The fiber has a higher enthalpy value, the enthalpy value of fusion can reach 70J/g, and the phase-change temperature is 28 ℃ -32 ℃ , withhigh strength and good cohesion, thereby avoiding the problems such as easy cracking of microcapsules due to static electricity.

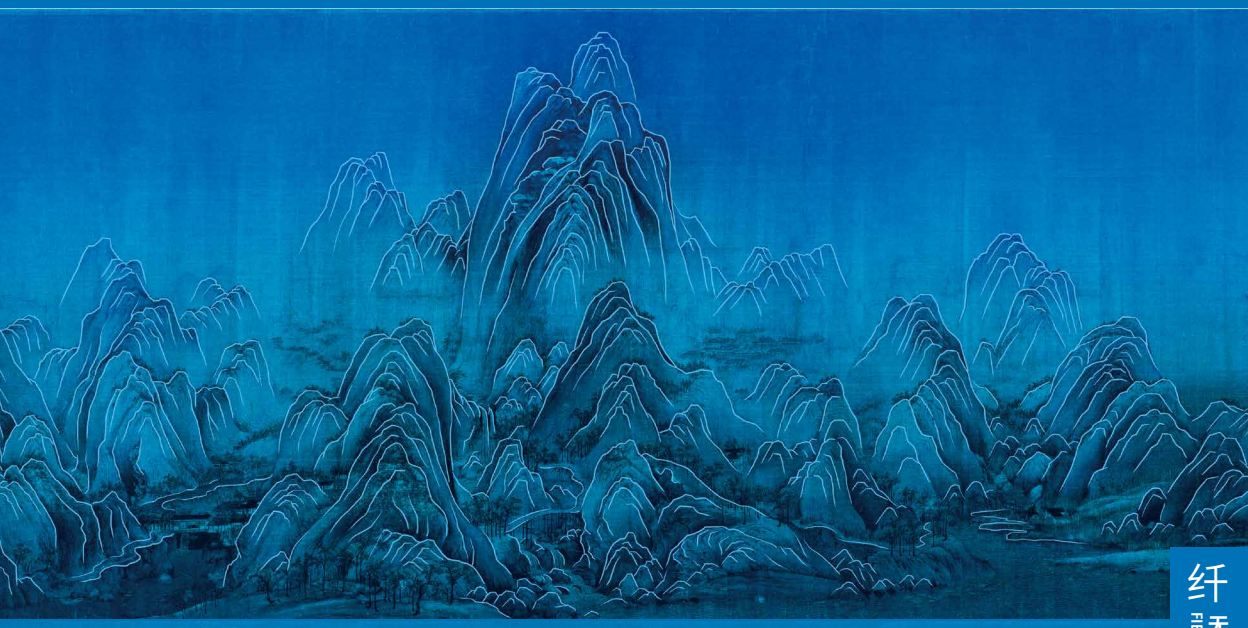
中国纤维流行趋势 China Fibers Fashion Trends 2023/2024

纤/无限

FIBER · INFINITE

铸造辉煌，挑战无限。精益求精的匠心理念、精湛的纤维技术是化纤人的不懈追求。挑战仿真极限，再细一点、再柔一点、再轻一点、再“真”一点，一点一点，“不设限”方能无极限。挑战节能极限，温度低一点、流程短一点、能耗低一点、寿命久一点、维护少一点，一点一点，即是极限。

Create brilliance, challenge infinite. Originality and exquisite technology are the continuous pursuits of chemical fiber people. Where there is a will, there is a way. The limit of emulation has been continually challenged, "no limit" can be unlimited. —— thinner, softer, lighter and more real. And the limit of energy saving also has been continually challenged ——lower temperature, shorter process, lower energy consumption, more durable and lesser maintenance. Low-carbon has always been our goal.



ARTIFICIAL FIBER
仿真纤维

小改进，大“变身”，从结构设计到截面设计，让纤维多角度无限接近兔毛、真丝，在性能上超越天然纤维，以仿超真。细旦轻柔与羊绒感兼具，双组分弹性复合混纤打造弹性和仿毛触感融合，从微末细节释放自然美感；梅花瓣状截面、光泽柔和饱满的棉感纤维，从丰盈触感延续温柔暖意。

Small improvement can lead to big "transformation". Through spinneret plate design and special process modification, the artificial fiber accurately emulates, if not exceeds, the rabbit fur and real silk in the aspects of appearance, luster and performance. The wool-like polyester fiber with fine monofilament, soft skin feeling, and the hand-feeling of wool, the artificial polyester fiber with bi-component elastic filament and mixed fiber technology, and the cotton-like fiber with plum-blossom-petal-shaped section and soft and full luster, whose hand-feeling is extremely like that of wool and cotton, have started a environmental-protection fashion with zero fur and set an example for caring the life on earth.

推荐纤维及品牌 Recommended fibers and brands

消光异形仿兔毛聚酯纤维
Rabbit hair-like polyester fiber based on profiled structure and delustering property

桐昆 GOLDEN COCK　盛虹 SHENGHONG

仿真丝生物基聚酰胺 510 纤维
Silk-like bio-based polyamide 510 fiber

泰纶® TERRYL

细旦羊绒感聚酯纤维
Fine-denier cashmere-like polyester fiber

羊绒迭代® 涤纶 ESMERE

仿毛聚酯弹性纤维
Wool-like polyester elastic fiber

永盛高纤 SKY

棉感再生纤维素纤维
Cotton-like regenerated cellulose fiber

雅赛棉 gracell cotton

消光异形仿兔毛聚酯纤维

Rabbit hair-like polyester fiber based on profiled structure and delustering property

桐昆 GOLDEN COCK

盛虹 SHENGHONG

推荐理由

该纤维具有超仿真效果，手感细腻、丰满、直立性好、保暖效果优异。纤维可以直接上机织造，降低下游使用成本。

Recommendation Reasons

The fiber has a super-simulation effect, with delicate and plump hand feeling, good uprightness, and excellent warm-keeping feature. The fiber can be directly woven on the machine, reducing the downstream use cost.

制备技术
Processing Technology

采用原位聚合法，在聚合低聚物管道上，利用注射设备在线添加二氧化钛 /EG 悬浮液实现全消光聚酯熔体的制备，再通过熔体直纺法制得消光异形仿兔毛聚酯纤维。

By in-situ polymerization method, titanium dioxide/EG suspension is added to the polymerized oligomer pipeline by injection equipment on the production line to realize the preparation of fully delustering polyester melt, and then therabbit hair-like polyester fiber based on profiled structure and delustering propertyis obtained by the direct spinning of melt.

纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：55dtex/12F、83dtex/36F、111dtex/48F（桐昆）
82.5-286dtex/ 36-60F（盛虹）

Main Specifications

Filaments: 55dtex/12F,83dtex/36F,111dtex/48F(GOLD COCK)
82.5-286dtex/ 36-60F（ShengHong)

标准及认证

《全消光涤纶牵伸丝》（FZ/T 54005-2018）

《异形涤纶牵伸丝》（FZ/T 54039-2018）

Standards and Certifications

Full dull polyester(PET) drawn yarns(FZ/T 54005-2018)

Profiled polyester(PET) drawn yarns(FZ/T 54039-2018)

纤维性能与制品特点

• 超仿真、仿兔毛效果好、毛感挺立；消光效果好，光泽度比普通消光产品更柔和

• 蓬松性好、手感柔软

• 深染性好、耐光性、抗紫外、防霉性

Fiber Performance and Product Features

· Super-simulation, good imitation of rabbit hair, and stand-up hair feeling; good delustering effect, softer glossiness than that of ordinary delustering products

· Good fluffiness and soft hand feeling

· Good deep dyeing, light resistance, ultraviolet resistance, and mildew resistance

产品规格 Specifications	断裂强度 (cN/ dtex) Breaking tenacity (cN/ dtex)	断裂伸长率 (%) Elongation at break (%)	沸水收缩率 (%) Boiling water shrinkage rate (%)	含油率 (%) Oil content (%)	染色均匀 (级) Dyeing uniformity (grade)	网络度 (个 /m) Degree of intertwining(Pc/m)	企业 Company
83dtex/36F	⩾ 3.50	29.0±3.0	0.7±0.8	1.25±0.20	4.5	16±4	桐昆 GOLD COCK
230dtex/48F	3.15	17.5	7.2	1.45	4	0-2	盛虹 SHENGHONG

下游应用指导

The downstream application guidance

织造：适用于经编双针床仿毛类产品，KS 经编机和圆机喷水机慎用

定型：200°C以上高温定型谨慎使用

Weaving: It is suitable for warp-knitting double-needle-bed wool-like products, but KS warp-knitting machine, circular knitting machine, and water jet machine shall be used with caution.

Shaping: Cautious use is required for shaping at a high temperatureof more than 200°C

纤维应用
Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
								✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
	✓		✓				✓	
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
		✓						
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
		✓						

Q&A

Q：消光异形仿兔毛聚酯纤维如何做到超仿真效果的，你了解吗？

A：消光异形仿兔毛聚酯纤维是一类全消光异形截面涤纶牵伸丝，纤维截面形似毛虫，可分为四节毛虫和五节毛虫两类，截面异形度高在 70% 以上。其纤维制品根据纤维规格和后道加工方式较高的还原兔毛、水貂毛等天然纤维制品的外观和质感，不仅具有天然纤维制品蓬松性好，手感柔软等特点，还具有比天然纤维制品更好的耐光性、抗紫外和防霉性。

Q: Do you know how to achieve the super-simulation effect of rabbit hair-like polyester fiber based on profiled structure and delustering property?

A: Rabbit hair-like polyester fiber based on profiled structure and delustering property is a kind of fully delustering profiled sectional polyester drawn yarn. The fiber section is similar to caterpillars, which can be divided into four-section caterpillars and five-section caterpillars, with the sectionalprofile degree higher than 70%. The appearance and the texture of natural fiber products such as rabbit hair and mink hairare restored in a higher mannerbased on fiber specifications and subsequent processing modes.The fiber not only has the characteristics of good fluffiness and soft handfeeling of the natural fiber products, but also has better light resistance, ultraviolet resistance, and mildew resistance than those of the natural fiber products.

泰纶

TERRYL

推荐理由

生物基聚酰胺纤维新品种，可规模化生产，拥有完整的知识产权和制造技术。仿真丝品种，拓展了生物基聚酰胺纤维的应用领域，在性能和风格上优于真丝。

Recommendation Reasons

This new typeof bio-based polyamide fiber can be produced in large scalewith complete intellectual property rights and manufacturing technology. The silk-like product expands the application field of bio-based polyamide fiber and are superior to real silk in performance and style.

仿真丝生物基聚酰胺 510 纤维

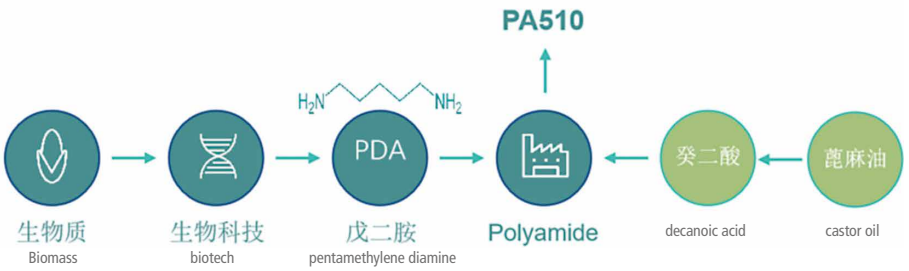
Silk-like bio-based polyamide 510 Fiber

制备技术

Processing Technology

仿照天然蚕丝分子结构、利用合成生物学开发生物基新型单体，再经成盐 - 聚合 - 切粒 - 干燥 - 熔融纺丝，构造仿真丝生物基聚酰胺纤维。

The technique simulates the molecular structure of natural silk to develop a novel bio-based monome by using synthetic biology, and then constructsthesilk-like bio-based polyamide fiber through salification – polymerization – granulation – drying - melt spinning.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

短纤：1.65dtex×38mm

长丝：22dtex/24F、44dtex/36F、70dtex/68F FDY 和 DTY

Main Specifications

Staple fiber: 1.65dtex×38mm

Filaments: 22dtex/24F,44dtex/36F,70dtex/68F FDY and DTY

标准及认证

参考《锦纶牵伸丝》（GB/T16603-2017）

Standards and Certifications

Refer to "Polyamide drawn yarn" GB/T 16603-2017)

纤维性能与制品特点

- 生物质原料、100% 生物基（戊二胺、癸二酸）
- 仿真丝、手感柔软亲肤
- 密度小、更轻盈
- 强度高，耐磨优异
- 抗皱、易打理
- 染色后色泽鲜艳、色牢度优良

Fiber Performance and Product Features

· Biomass raw material, 100% bio-based (pentamethylene diamine, sebacic acid)
· Silk-like, soft hand feeling
· Less density to realize light weight
· High intensity, excellent wear resistance
· Anti-wrinkle, easy to manage
· Bright colors and excellent color fastness after dyeing

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/dtex)	断裂伸长率（%） Elongation at break (%)	色牢度（级） Color fastness (Grade)	沸水收缩率（%） Boiling water shrinkage rate (%)
22dtex/24F FDY	4.94	42	⩾ 4	8.5
44dtex/36F DTY	4.04	28.4	⩾ 4	5.2

下游应用指导

The downstream application guidance

纺纱：短纤可以纯纺，也可与棉、羊毛、粘胶等混纺。在纺纱前进行充分调湿回潮，并严格控制纺纱环境温湿度

织造：可通过纬编大圆机、经编机、无缝针织机用于针织面料的织造，也可进行梭织面料的开发，在上浆过程中浆料需综合聚酯类和聚酰胺类浆料的特点

染整：可使用酸性染料、金属络合染料、分散染料进行染色及印花，染色温度 100°C左右，需在 80°C左右降低升温速率或进行阶段保温，热定型温度≤ 190°C

Spinning: Staple fibers can be purely spun or blended with cotton, wool, viscose, etc. Fullhumidifying and dampening before spinning are required, and the temperature and humidity of the spinning environment shall be strictly controlled

Weaving: It can be used for weaving knitted fabrics by a weft knitting circular machine, a warp knitting machine and a seamless knitting machine, and can also be used for developing woven fabrics; in the sizing process, the sizing agent needs to comprehensively consider the characteristics of polyester sizing agent and polyamide sizing agent

Dyeing and finishing: Acid dye, metal complex dye, and disperse dye can be used for dye and printing, the dyeing temperature is about 100°C, the heating rate shall be reduced or be carefully controlled by a temperature-ramping program near 80°C, and the heat setting temperature is ≤190°C

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓					✓			
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
✓			✓					
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓								

Q&A

Q：仿真丝生物基聚酰胺 510 纤维怎样实现仿真丝效果?

A：仿真丝生物基聚酰胺 510 纤维分子链段中含有戊二胺、癸二酸，分子链段柔软，具有天然仿真丝的分子结构，因此具有接近真丝的柔软手感，丰满而蓬松，折皱回复优良。再进一步结合消光、细旦化、异形截面技术，增加强度，耐磨，尺寸稳定性，超越真丝。

Q：仿真丝生物基聚酰胺 510 纤维目前产品的开发进度和应用推广情况如何?

A：仿真丝生物基聚酰胺 510 已实现大有光、半消光、全消光切片到长丝的开发、生产及销售，并广泛应用于内衣、泳装、瑜伽、羽绒服、冲锋衣等高端终端品牌。

Q: How can the Silk-like Bio-based Polyamide 510 Fiber achieve the silk-like effect?

A: The molecular segments of the Silk-like Bio-based Polyamide 510 Fiber contain pentamethylene diamine and sebacic acid, and the molecular segments are soft and have a natural silk-like molecular structure, so that it has the soft hand feeling similar to silk, which is plump and fluffy with good wrinkle recovery. In is a combination of thedelustering, fine-denier, and profiled sectional technology, the strength, wear resistance and dimensional stability are enhanced, which surpass the propertiesof the natural silk.

Q: How are the development progress and application and promotion of the Silk-like Bio-based Polyamide 510 Fiber products?

A: TheSilk-like bio-based Polyamide 510 has realized the development, production and sales of super-bright, semi-delustering, and full-delusteringslices to filaments, and is widely used in high-end brands such as underwear, swimsuits, yoga, down jackets, and avant-garde garments.

ESMERE

羊绒迭代 ® 涤纶

ESMERE

推荐理由

聚酯纤维品种再创新，兼具羊绒手感与聚酯纤维的优势，作为羊绒的迭代品，解决羊绒难打理、尺寸稳定差等问题。

Recommendation Reasons

The varieties of polyester fibers have new innovations; the new product has advantages with the cashmere-like properties of polyester fiber. As an iterative product of cashmere, the problems of difficult care and poor dimensional stability of cashmere can be solved.

细旦羊绒感聚酯纤维

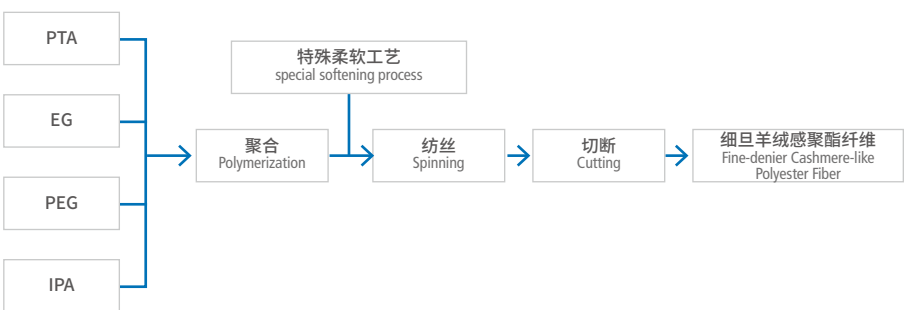
Fine-denier cashmere-like polyester fiber

制备技术

Processing Technology

以聚酯为主要材料，加入适量间苯二甲酸、醚进行共聚得到聚醚酯，形成亲水柔软的聚酯基材，经熔融纺丝和特殊柔软工艺制得富有弹性和羊绒手感的纤维。

Polyester is used as the main material, addinga proper amount of isophthalic acid and ether for copolymerization to obtain polyether ester.Itforms a hydrophilic and soft polyester substrate. Through melt spinning and the special softening process, the fiber with elasticity and cashmere hand feeling is made.



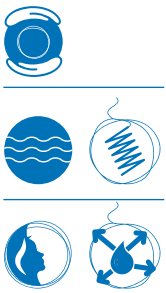
纤维及制品特点
Characteristics of Fiber and Product

主要规格
短纤：0.99dtex×38mm

Main Specifications
Staple: 0.99dtex×38mm

标准及认证
《涤纶短纤维》(GB/T 14464-2008)

Standards and Certifications
Polyester staple fiber(GB/T 14464-2008)



纤维性能与制品特点
- 羊绒般触感、细腻滑糯
- 强度是羊毛的 4 倍、强度高，不易皱、不变形、易打理
- 亲肤舒适、吸湿透气

Fiber Performance and Product Features
· Cashmere-like hand feeling, fine and delicate feeling
· Its strength is four times that of wool, with high strength, no wrinkle, no deformation and easy care
· Skin-friendly and comfortable, moisture-absorbing and breathable

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂伸长率（%） Elongation at break (%)	180°C干热收缩率（%） 180°C dry heat shrinkage (%)
0.99dtex×38mm	3.8	41.4	6.6
卷曲数（个 /25mm） Curl number(Pc/25mm)	比电阻（%） Specific resistance (%)	含油率（%） Oil content (%)	回潮率（%） Moisture regain (%)
11.4	5.2×10^{7}	0.68	1.2

下游应用指导
The downstream application guidance

纺纱：建议与羊毛或羊绒混纺，尽可能拉大羊毛或该纤维的粗细、长度差别，以确保羊毛在纱线表面更多。
染整：建议采用一浴染色法，与羊毛同时上色。

Spinning: It is recommended to blend with wool or cashmere to widen the difference in thickness and length of wool or the fiber as much as possible, so as to ensure more wool on the yarn surface.
Dyeing and finishing: It is recommended to adoptthe one-bath dyeing method to color with wool at the same time.

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓							✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓			✓					
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
			✓					
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

Q&A

Q：细旦羊绒感聚酯纤维在下游的具体应用方向及市场欢迎度如何?

A：该纤维的纤度是羊毛的 2/3，适用于与羊绒、羊毛、二醋酯、真丝混纺，可提升相关纱线的强力、韧性、尺寸稳定性、易打理和时尚性能。目前已应用于丹毛的匹染毛涤女装面料、太平鸟的时尚女装以及华艺的扎染面料等，获得下游用户好评。

Q: What are the specific application direction and market popularity of the fine-denier cashmere-like polyester fiber in downstream?

A: The fineness of this kind of fiber is 2/3 of that of wool.It is suitable for blending with cashmere, wool, diacetate and silk, improvingthe strength, toughness, dimensional stability, easy-care function and fashion performance of related yarns. At present, it has been applied to piece-dyeing wool polyester women's fabrics of Danmao, fashionable women's fabrics of PEACEBIRD and tie-dyed fabrics of Huayi, etc., and won favorable comments from downstream users.

永盛高纤
YONGSHENG HIGH POLYMER FIBER

永盛高纤

SKY

仿毛聚酯弹性纤维

Wool-like polyester elastic fiber

推荐理由

采用异粘双组分并列纺丝+混纤加弹工艺，制备具有多元复合聚酯弹性纤维。该纤维弹性卷曲优异，抗皱性能突出，织物蓬松毛感，实现进口替代。

Recommendation Reasons

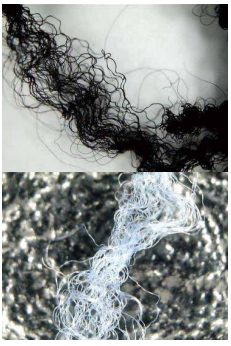
It adopts that process of hetero-adhesive two-component parallel spinning combiningfiber mixing and elastic enhancement to prepare the multi-component polyester elastic fiber. The fiber has an excellent elastic crimp, outstanding wrinkle resistance, anda fluffy and hairy feeling of the fabric, which realizes import substitution.

制备技术

Processing Technology

采用高低粘度的两种聚酯切片经复合纺丝制备双组分弹性聚酯复合纤维，然后以双组分弹性复合纤维长丝为芯层、聚酯仿毛纤维长丝作为外层，经复合混纤、热收缩加工整理，制备仿毛聚酯弹性纤维。

It adopts two kinds of polyester chips with high and low viscosity to prepare bicomponent elastic polyester composite fiber through composite spinning.Further,the bicomponent elastic composite fiber filamentis usedas the core layer and polyester wool-like fiber filament is as the outer layer to prepare wool-like polyester elastic fiber through composite fiber mixing and thermal shrinkage processing.



纤维及制品特点

Characteristics of Fiber and Product

主要规格

长丝：110dtex/96F 132dtex/84F 154dtex/48F

Main Specifications

Filaments: 110dtex/96F 132dtex/84F 154dtex/48F

标准及认证

《弹性涤纶牵伸丝 / 涤纶预取向丝（EDY/POY）混纤丝》(FZ/T 54093-2017)

Standards and Certifications

Polyester elastic drawn/Partially oriented (EDY/POY) combined yarn (FZ/T 54093-2017)

纤维性能与制品特点

• 多元复合弹性、优异的弹性卷、抗皱回复性好

• 机械仿真，仿毛的手感

Fiber Performance and Product Features

· multi-component elasticity, excellent elastic crimp, and good wrinkle recovery

· Mechanical simulation, wool-like hand feeling

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂伸长率（%） Elongation at break(%)	卷曲收缩（%） Curling shrinkage (%)	沸水收缩率（%） Boiling water shrinkage rate (%)
110dtex/96F	2.60	23	18	25

下游应用指导

The downstream application guidance

纺纱：可以纯纺，也可与其他纤维进行混纺或并线，如涤纶、棉、羊毛等

织造：通过加捻提高纤维的卷曲效果和弹性回复效果，捻度 600 ～ 1600 捻 / 米。可用于制作针织与梭织面料

染整：建议使用分散染料，染色温度 130°C左右、热定型温度 190°C左右。建议先收缩卷曲工艺，后再定型工艺

Spinning: It can be used purely or blend spinning with other fibers is availableor parallel spinning, such as polyester, cotton, and wool

Weaving: The curling effect and elastic recovery effect of the fiber are improved by twisting, and the twist is 600 - 1600 twists/meter, and itcan be used for making knitted and woven fabrics

Dyeing and finishing: It is recommended to use disperse dyes. The dyeing temperature is about 130 °C and the heat setting temperature is about 190 °C . It is recommended to shrink the curling process first, and then finalize the process

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓			✓		✓			✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
	✓							
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
	✓							
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
	✓							

Q&A

Q：仿毛聚酯弹性纤维如何实现毛感和弹性同时具备?

A：采用双组分弹性聚酯复合纤维为芯层的弹性骨架材料，双组份聚酯因为粘度差异，产生的收缩力不同，因此可以形成类似弹簧结构的卷曲。聚酯仿毛长丝作为外层纤维，芯层卷曲收缩的同时产生蓬松的大波浪毛感结构，实现仿毛手感并且拥有优异的弹性卷曲性能。

Q: How does wool-like polyester elastic fiber achieve both wool hand feeling and elasticity?

A: The two-component elastic polyester composite fiber is as the elastic skeleton material of the core layer. Due to the viscosity difference, the two-component polyester produces different contraction forces, forming a curl similar to a spring structure. As the outer fiber, polyester wool-like filament producesa fluffy and wavy wool-like structure while the core layer is curled and shrunk, realizinga wool-like hand feeling and excellent elastic crimping performance.

雅赛棉

雅赛棉

gracell cotton

推荐理由

纤维原料来源于树木天然环保，纤维具有棉的手感以及抗紫外线功能。其面料亲肤舒适、保形性好、光泽柔和饱满，在服装领域运用广泛。

Recommendation Reasons

It adopts lo-zinc, high-salt, high-spinning-speed and multi-stage drawing forming technology to realize high wet modulus of products, and prepares cotton-like regenerated cellulose fiber with anti-ultraviolet function through pre-spinning blending wet spinning technology.

棉感再生纤维素纤维

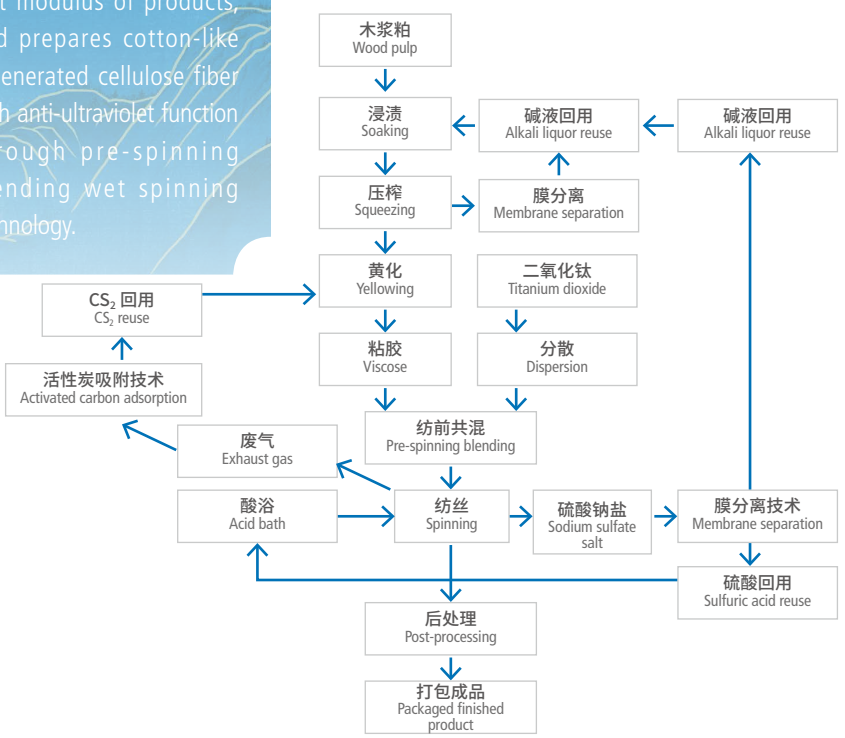
Cotton-like regenerated cellulose fiber

制备技术

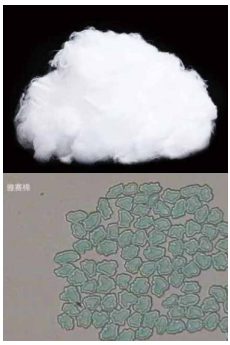
Processing Technology

采取低锌、高盐、高纺速、多段牵伸成型技术，实现产品高湿模量，通过纺前共混湿法纺丝技术制备具有防紫外功能性能的棉感再生纤维素纤维。

The fiber raw material comes from trees which is naturally environmental-friendly, and the fiber has the hand feeling of cotton and the anti-ultraviolet function. Its fabric is skin-friendly and comfortable, good in shape retention, soft and full in luster, and is widely used in the clothing field.



纤维及制品特点
Characteristics of Fiber and Product



主要规格
短纤：1.22dtex×38mm

Main Specifications
Staple fiber: 1.22dtex×38mm

标准及认证
《高强低伸粘胶短纤维》（HX/T 51012-2015）

Standards and Certifications
High-strength and low-elongation viscose staple fiber (HX/T 51012-2015)

纤维性能与制品特点
- 100% 木浆，可自然降解
- 纤维截面呈梅花瓣状结构，增加了纤维比表面积，面料吸湿透气性好
- 上染率高，色泽如棉般柔和饱满
- 棉感柔软、舒适透气
- 永久防紫外、抗起毛球、保形强韧

Fiber Performance and Product Features
· 100% wood pulp, naturally degraded

· The cross-section of the fiber is a plum petal-shaped structure, which increases the specific surface area of the fiber and makes the fabric absorb moisture and breathe well

· High dye-uptake rate, soft and full color like cotton

· Cotton-like softness, comfort, and breathability

· Permanent UV prevention, pilling resistance, shape retention and toughness

产品规格 Specifications	干断裂强度（cN/ dtex） Breaking tenacity in dry state (cN/ dtex)		干断裂伸长率（%） Breaking elongation in dry state (%)
1.22dtex×38mm	＞3.0		15-18
干断裂强力变易系数 CV(%) Variation coefficient of dry fracture strength CV (%)	UPF	UVA（%）	径向水膨润度（%） Radial water swelling degree (%)
⩽15	＞40	＜5	22～26

下游应用指导

The downstream application guidance

纺纱：可纯纺，也可与棉、涤等混纺，因其细旦、高强低伸特性，在纺纱梳棉过程中，采用“重梳理轻打击”的工艺，减少短纤维的产生，确保纱线粗细节、棉结品质

织造：在织造过程中，可提高牵伸或打纬的速度，提升效率，根据所织面料的经、纬密，克重等不同，可提升效率 10% ～ 30%，在整个牵经张力路线上采用低张力工艺

染色：参考常规粘胶产品

丝光：与棉混纺面料的丝光工艺需降低碱浓，按≤ 120 克 / 升进行控制，温度为常温

Spinning: It can be purely spun or blended with cotton and polyester. Due to its fine denier, high strength and low elongation, in the process of spinning and carding, the process of “more carding and less beating” is adopted to reduce the generation of microfiber and ensure the coarse details and nep quality of yarns

Weaving: In the weaving process, the speed of elongation or beating-up can be improved, and the efficiency can be improved by 10% - 30% according to the warp, weft density and gram weight of the woven fabric. The low tension process is adopted in the whole drawing tension route

Dyeing: Refer to conventional viscose products

Mercerizing: The mercerizing process of cotton-blended fabrics needs to reduce the alkali concentration, and it should be controlled at ≤ 120g/L at room temperature

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓			✓	✓				
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓						✓		
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓								

Q&A

Q：棉感再生纤维素纤维在后道工序的应用有那些优势，你了解吗?

A：首先，纤维缩水率小且均匀稳定，在牵经、织造、染色、后整理等加工过程中更易控制，不易变形，面料裁剪时损耗更低。其次，纤维强度较棉和粘胶纤维高 20%-30%，兼具特殊的截面结构，纤维间抱合力更好，面料后整理时加工适应性更强，提升各工序生产效率。其制作的梭织面料断裂强力、撕破强力更高，针织面料顶破强力、织物抗起毛起球性能更好。

Q: What are the advantages of the application of cotton-like regenerated cellulose fiber in the subsequent process? Do you know?

A: First of all, the shrinkage of fiber is small, uniform and stable, which is easier to control and uneasy to deform in the process of drawing, weaving, dyeing and after-treatment, and the loss of fabric is lower when cutting. Second, the fiber strength is 20%-30% higher than that of cotton and viscose fiber, and it has a special cross-sectional structure, so the cohesion between fibers is better, and the processing adaptability of fabrics is stronger when after-treatment, which can improve the production efficiency of each process. The woven fabric made of it has higher breaking strength and tearing strength, and the knitted fabric has better bursting strength and pilling resistance.

抗污聚酰胺 6 纤维挑战耐污极限，9 级抗污，如神来之笔，轻松搞定服装、家居的打理养护问题，干净整洁不失质感；常压深染抗起球聚酯纤维具有染色温度低、起球少、热稳定强，加工更低碳、色彩更绚烂等优势特点，如积蓄在春日里的力量，焕发着无限活力，纵横风雨，历久弥新。超低温定型聚烯烃弹性纤维，95-100℃即可定型，如净水无波，不为境转，传承产品优势，助力节能减排，为凉爽夏日增添科技力量。

The stain-resistant polyamide 6 fiber is featured by its industry-leading stain-resistant capacity; With the stain-resistant level of 9, it makes clothing and home care easier. The normal-pressure deep-dyed anti-pilling polyester fiber has the advantages of low dyeing temperature, less pilling, strong thermal stability, low-carbon processing links and more brilliant color. The ultra-low-temperature-finalized polyolefin elastic fiber can be finalized at 95-100°C, making contributions to save energy and reduce emissions, and adding scientific and technological strength to cool summer.

EASY-TO-CARE FIBER

易打理纤维

推荐纤维及品牌 Recommended fibers and brands

抗污聚酰胺 6 纤维
Anti-fouling polyamide 6 fiber

常压深染抗起球聚酯纤维
Ordinary-pressure deep-dyeing and anti-pilling polyester fiber

超低温定型聚烯烃弹性纤维
Ultra-low temperature setting polyolefin elastic fiber

HENGYI 恒逸 HENGYI

Porel 博尔 Porel

MENS 梦丝 MENS

HENGYI

恒逸
HENGYI

抗污聚酰胺 6 纤维

Anti-fouling polyamide 6 fiber

制备技术
Processing Technology

在己内酰胺中添加抗污功能改性单体经熔融共聚制备抗污聚酰胺 6 切片，再经熔融纺丝制得抗污聚酰胺 6 纤维；将牵伸后的纱线再通过变形器进行膨化变形。冷却后进行网络集束，收卷后制得抗污聚酰胺 6 BCF 纤维。

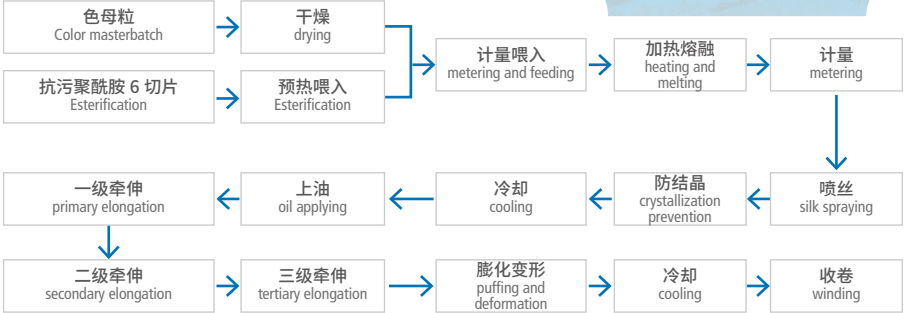
The anti-fouling functional modified monomer is added into caprolactam to prepare anti-fouling polyamide 6 chips by melt copolymerization, and then the anti-fouling polyamide 6 fiber by melt spinning;The drawn yarn is expanded and deformed by a deformer. After cooling, network bundling is conducted, and the Anti-fouling Polyamide 6 BCF Fiber is prepared after winding.

推荐理由

打破高端抗污聚酰胺产品被国外垄断的局面，纤维具有强度高、弹性好、耐磨性好、抗污持久等优点，在窗帘、地毯、汽车内饰等清洁频次低的应用场景中，优势显著。

Recommendation Reasons

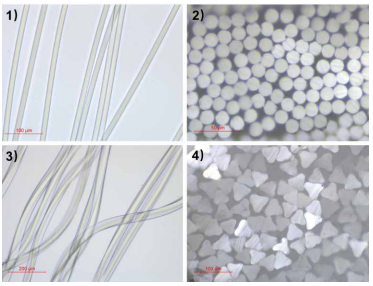
It breaks the situation that high-end anti-fouling polyamide products are monopolized by foreign countries. The fiber has the advantages of high strength, good elasticity, good wear resistance, and long-lasting anti-fouling property, and has obvious advantages in the application scenes with low cleaning frequency such as curtains, carpets and automobile interiors.



纤维及制品特点
Characteristics of Fiber and Product

主要规格
长丝：44dtex/24F FDY
750dtex/36F BCF
928dtex/42F BCF

Main Specifications
Filaments: 44dtex/24F FDY
750dtex/36F BCF
928dtex/42F BCF



抗污聚酰胺纤维形貌图：
1）FDY 表面 2）FDY 截面 3）BCF 表面 4）BCF 截面。
Morphological diagram of anti-fouling polyamide fiber:
1)FDY surface 2)FDY cross section 3)BCF surface 4)BCF cross section

抗污聚酰胺 6BCF 原色丝及有色丝
Primary color yarn and colored yarn of the Anti-fouling Polyamide 6 BCF

标准及认证
《锦纶 6 单丝》（FZ/T54071-2014）
《锦纶 6 预取向丝》（FZ/T54024-2019）
《锦纶 6 弹力丝》（FZ/T54007-2019）
《锦纶 6 膨体长丝》（FZ/T 54082-2015）

Standards and Certifications
Polyamide 6 monofilament (FZ/T 54071-2014)
Polyamide 6 pre-oriented yarns (FZ/T 54024-2019)
Polyamide 6 drawn textured yarn (FZ/T 54007-2019)
Polyamide 6 bulked continuous filament yarns(BCF) (FZ/T 54082-2015)

纤维性能与制品特点
• 强度高、弹性好、耐磨性好
• 相关纤维及织物制品抗污持久，不易沾染生活污渍，抗污等级达到 9 级（常规聚酰胺 6 抗污等级为 2 级），抗污性能大幅提升

Fiber Performance and Product Features
· High strength, good elasticity and good wear resistance
· Related fiber and fabric products are durable in stain resistance, and are not easy to be contaminated with domestic stains. The anti-fouling level reaches grade 9 (the conventional polyamide 6 has the anti-fouling level of grade 2), and the stain resistance is greatly improved

产品规格 Specifications	断裂强度 (cN/ dtex) Breaking strength(cN/dtex)	断裂伸长率 (%) Elongation at break(%)	卷曲率 (%) Crimp percentage(%)	回潮率 (%) Moisture regain(%)	含油率 (%) Oil content (%)	抗污等级 Anti-fouling grade
44dtex/24F	3.8	41.4	11.4	3.68	0.68	-
750dtex/36F	2.4	23.2	34.8	3.68	0.90	9
928dtex/42F	2.5	24.8	33.9	3.66	0.89	9

下游应用指导

The downstream application guidance

纺纱：可与其他纤维进行并股和交织设计不同组织结构的布料

染整：建议使用常规酸性染料和中性染料进行染色

Spinning: It can be multiplied and interwoven with other fibers to design fabrics with different weave structures

Dyeing and finishing: It is recommended to use conventional acid dyes and neutral dyes for dyeing

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
✓	✓		✓					
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
	✓	✓	✓		✓		✓	

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
✓	✓							
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：使用原位聚合抗污切片生产的抗污纱线对比采用其他抗污方式的纱线有什么优势？

A：使用抗污试剂对普通产品表面进行喷洒或浸润处理，在表面形成保护膜，从而达到抗污效果，但表面保护膜容易磨损，持久性较差。市场上还有采用具有抗污功效的纺丝油剂在纺丝上油阶段对纤维进行表面改性，可以达到抗污效果，但纤维在后续生产工序中会产生一定的损耗，使效果降低。本产品采用原位聚合对切片进行改性，抗污功能基团均匀地分布在整个分子链上，纱线抗污性能保持均匀稳定，耐水洗，效果持久。

Q：当前原位聚合抗污聚酰胺的发展情况以及市场应用情况，你了解吗？

A：20 世纪末，德国巴斯夫公司和美国英威达公司在抗污聚酰胺纤维领域取得一系列突破，解决了改性纤维抗污能力差的问题，推出了抗污聚酰胺 66 高强地毯纱等产品，在欧美等被大量应用在地毯等领域，但其价格高昂，国内难以实现大规模市场推广。目前国内抗污聚酰胺生产技术不成熟，存在染色牢度差、抗污性不佳等问题，因此抗污聚酰胺产品尚未规模化生产。本公司通过以聚酰胺 6 为基材开发的抗污聚酰胺纤维，可以在保证抗污效果的同时有效降低生产成本，市场前景广阔。

Q: What are the advantages of anti-fouling yarns produced by in-situ polymerization anti-fouling chips compared with yarns with other anti-fouling methods?

A: The anti-fouling agent is used to spray or soak the surface of ordinary products to form a protective film on the surface, so as to achieve the anti-fouling effect, but the protective film on the surface is easy to wear with poor durability. In the market, spinning oil with an anti-fouling effect is also used to modify the surface of fiber in the oiling stage of spinning, which can achieve the anti-fouling effect, but the fiber will havea certain loss in the subsequent production process, which will reduce the effect. This product adopts in-situ polymerization to modify the chips, and the anti-fouling functional groups are evenly distributed in the whole molecular chain, so that the anti-fouling performance of the yarn remains even and stable, and it is washable and has a long-lasting effect.

Q: Do you know the current development and market application of in-situ polymerization anti-fouling polyamide?

A: At the end of the 20th century, BASF Company in Germany and Invista Company in the United States made a series of breakthroughs in the field of anti-fouling polyamide fibers, and they solved the problem of poor anti-fouling ability of modified fibers and introduced anti-fouling polyamide 66 high-strength carpet yarn and other products, which were widely used in carpets and other fields in Europe and America, but their prices were too high to achieve large-scale market promotion in China. At present, the domestic production technology of anti-fouling polyamide is not mature with some problems such as poor dyeing fastness and poor anti-fouling effect, so the anti-fouling polyamide products have not been produced on a large scale. The anti-fouling polyamide fiber developed by the Company with polyamide 6 as thesubstrate can effectively reduce the production cost while ensuring the anti-fouling effect, with a broad market prospect.

常压深染抗起球聚酯纤维

Ordinary-pressure deep-dyeing and anti-pilling polyester fiber

博尔

Porel

推荐理由

解决普通聚酯纤维深染需要高温高压的问题，纤维具备常压易染、深染、抗起球等特点，实现纤维制备及后道染整工序的节能降耗。

Recommendation Reasons

Deep dyeing of common polyester fiberis under high temperature and high pressurewith high energy and material consumption. To solve the problem, the fiber with the characteristics of easy dyeing under ordinary pressure, deep dyeing, pilling resistance, etcrealizes the goal of energy saving and consumption reduction in fiber preparation and subsequent dyeing and finishing processes.

制备技术

Processing Technology

对聚酯大分子链进行重新设计，在熔体直纺工艺中，聚酯合成过程中增加第三单体、第四单体，降低聚酯大分子链段的柔顺性，达到常压易染改性，制得常压深染、抗起球聚酯纤维。

The polyester macromolecular chain is redesigned. The third monomer and the fourth monomer are added in the polyester synthesis process, which reduces the flexibility of the polyester macromolecular chain segment and achieves easy dyeing and modification underordinary pressure.The polyester fiber with deep dyeing and pilling resistance underordinary pressure is preparedthough the melt direct spinning process.

改性机理

Modification mechanism

分子解构 =PTA+EG+ 三单体 + 四单体共聚反应

The copolyester is obtained by copolymerization of PTA, EG, the third monomer andthe fourth monomer.

与维纶、丙纶、腈纶、锦纶等相比，聚酯纤维性价比最高、竞争力最强

Compared with vinylon, polypropylene fiber, acrylic fiber and chinlon, polyester fiber has the highest cost performance and the strongest competitiveness

对聚酯大分子链的重新设计，主链中植入高含量的三单体和四单体，纤维的玻璃化温度、模量、强度等基本物理性能、染色性等都发生了根本性的变化

The polyester macromolecular chain is redesigned, and the main chain is implanted with high content of the third monomer and the fourth monomer. Then, the basic physical properties, such as glass transition temperature, modulus, strength and dyeability, of the fiber have undergone fundamental changes.

纤维柔软、吸湿性增强，可实现离子染料常压沸染

The fiber is soft with enhanced moisture absorption, which can realize boiling dyeing of ionic dyes under ordinary pressure

纤维及制品特点
Characteristics of Fiber and Product

主要规格

短纤：1.33 ～ 1.56dtex×38mm

中空短纤：1.56dtex×38mm

Main Specifications

Staple: 1.33~1.56dtex×38mm22.22dtex ×38~51mm

Hollow staple fiber: 1.56dtex×38mm

标准及认证

《亲水柔软聚酯中空短纤维》(HX/T 50007-2012)

Standards and Certifications

Hydrophilic Soft polyester hollow staple fiber(HX/T 50007-2012)

纤维性能与制品特点

- 节能降碳，采用熔体直纺工艺改性，染整工序的低温深染
- 色彩鲜艳、上染率高、色牢度好，品质提升
- 模量较常规涤短低 30%、织物抗起球性能优异
- 具有良好的耐温性、亲水性、面料手感柔软

Fiber Performance and Product Features

· Energy saving and carbon reduction. Melt direct spinning process is adopted, and low-temperature deep dyeing is carried out in the dyeing and finishing process

· Bright colors, high dye uptake, good color fastness, and improved quality

· The modulus is 30% lower than that of conventional polyester staple fiber, and the fabric has excellent pilling resistance

· It has good temperature resistance, hydrophilicity, and soft hand feeling

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂伸长率（%） Elongation at break(%)	模量（cN/dtex） Modulus(cN/dtex)	180°C干热收缩率（%） 180°C dry heat shrinkage rate (%)
1.33dex×38mm	3.37	31.3	32	6.5
100°C染饱和值（%） 100°C dyeing saturation value(%)	卷曲数（个 /25mm） Crimp number (Pc/25mm)	水洗色牢度（级） LColor fastness to washing(Grade)	疵点含量（mg/100g） Defect content (mg/100g)	
5.3	10.7	4	0.5	

下游应用指导
The downstream application guidance

碱处理：碱处理时温度应尽量控制在 80°C以下，或缩短处理时间

染整：使用阳离子染料，常压染色

后整理：树脂整理注意织物强力的变化

Alkali treatment: During alkali treatment, the temperature shall be controlled below 80 °C or the treatment time shall be shortened

Dyeing and finishing: Using positive ion to conduct dyeing under ordinary pressure

Post-finishing: Paying attention to the change of fabric strength in the resin finishing

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓	✓		✓	✓		✓	✓	✓
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓	✓	✓	✓			✓		✓
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
		✓						
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓		✓	✓	✓	✓			

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓							
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞绳 Parachute cord
✓								
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								

Q&A

Q：常压深染抗起球聚酯纤维对实现双碳的作用，你了解吗？

A：常压深染抗起球聚酯纤维最主要的节能减碳效果体现在后道染色环节，用该纤维生产的 10000 米牛仔布的碳排放数据与常规聚酯短纤维的相比，节能降碳 520kg CO_2 e。目前该纤维在安踏、李宁、优衣库、黑牡丹等下游及终端得到应用。

Q：常压深染抗起球聚酯纤维可以用分散染料进行常压染色吗？

A：作为采用熔体直纺工艺生产的改性聚酯短纤维，既可以实现常压阳离子染料染色，同时也可以用分散染料常压染色，下游企业可以根据实际情况灵活选择。

Q: Do you know the effect of ordinary-pressure deep-dyeing anti-pilling polyester fiber on realizing carbon peaking and carbon neutrality?

A: The main energy-saving and carbon-reducing effect of the ordinary-pressure deep-dyeing anti-pilling polyester fiberare reflected in the subsequent dyeing section. Compared with conventional polyester staple fiber, the carbon emission data of 10,000m denim produced with this fiber can save energy and reduce carbon by 520kg CO_2 e. At present, the fiber has been applied in the downstream and terminal of Anta, Li Ning, Uniqlo, and Black Peony.

Q: Can the ordinary-pressure deep-dyeing anti-pilling polyester fiber be dyed with disperse dyes under ordinary pressure?

A: As a modified polyester staple fiber is produced by the melt direct spinning process.The ordinary-pressure deep-dyeing and anti-pilling polyester fiber can be dyed with cationic dyes or disperse dyes under ordinary pressure. The downstream enterprises can make flexible choices according to the actual situation.

梦丝
MENS

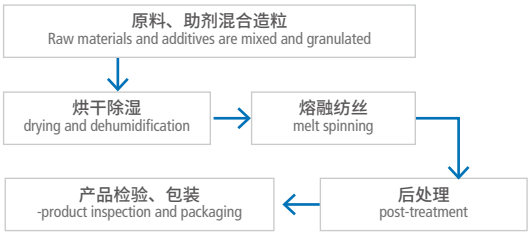
超低温定型聚烯烃弹性纤维

Ultra-low temperature setting polyolefin elastic fiber

制备技术
Processing Technology

以聚烯烃热塑性弹性体为原料，加入消光剂、抗氧化剂等助剂共混造粒，再通过熔融纺丝制备超低温定性聚烯烃弹性纤维。

With polyolefin thermoplastic elastomer as the raw material, delustering agent, antioxidant and other additives are added for blending and granulating, and then the ultra-low temperature setting polyolefin elastic fiber is prepared by melt spinning.



推荐理由

采用自主研发和技改创新的纤维制备装备。可实现95-100℃超低温定型，满足了（含）聚乙烯纤维系列的面料定型、保型、舒适、尺寸稳定性的要求，难以取代。

Recommendation Reasons

It adopts fiber preparation equipment with dependent research and development and technical innovation. The ultra-low temperature setting at 95-100 ℃ can be realized, which meets the requirements of setting, shape retention, comfort and dimensional stability of fabrics of (containing) polyethylene fiber (PE) series and is difficult to replace.

纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：36dtex/1F、46dtex/1F、83dtex/1F、156dtex/1F

Main Specifications

Filaments: 36dtex/1F,46dtex/1F,83dtex/1F,156dtex/1F

纤维性能与制品特点

- 超低熔点、95-100°C 超低定型温度
- 弹性回复率高、织物接触凉感
- 耐酸碱、耐氯、耐老化、持久稳定

Fiber Performance and Product Features

· Ultra-low melting point and ultra-low setting temperature of 95-100°C

· High elastic recovery rate, and cool feeling of fabric contact

· Acid and alkali resistance, chlorine resistance, aging resistance, and long-lasting stability

产品规格 Specification	断裂强度（cN/ dtex） Breaking strength (cN/ dtex)	断裂伸长率（%） Elongation at break (%)	300% 伸长应力（cN） 300% elongation stress (cN)
36dtex/1F	1.0±0.15	530±30%	7.5±0.5
300% 弹性回复率（%） 300% elastic recovery rate (%)	环境温度 20°C ±2，湿度 65±4%，温差 20°C织物凉感（W/（cm^2•s）） The ambient temperature is 20°C±2, the humidity is 65±4%, and the temperature difference is 20°C; cool feeling of the fabric (W/(cm^2•s))		
91±2	0.38-0.45		

下游应用指导

The downstream application guidance

织造：可与凉感乙烯纤维、超高分子量聚乙烯纤维交织制作面料，在 95-100°C定型

Weaving: It can be interwoven with cool-feeling ethylene fiber and ultra-high molecular weight polyethylene fiber to producethe fabric with the setting at 95-100°C

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
							✓	
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
✓		✓			✓			
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓							
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								

Q&A

Q：聚烯烃弹性纤维和氨纶的主要区别，及在哪些应用领域使用?

A：主要是主原料类型不同。聚烯烃材料是一种惰性材料，主要特点是“耐酸碱、耐老化、耐氯”，可以低温定型，在定型后形成相互粘连的“骨架”。采用了聚烯烃弹性纤维的面料质感佳、弹性稳定持久。聚烯烃弹性纤维的应用领域广泛，主要包括 (1) 需要160°C以下定型、尤其是需要 120°C以下定型的特种面料；(2) 需要酸强碱处理工艺的面料；(3) 需要耐氯使用的泳装类面料；(4) 针织仿梭织类面料，如内衣外穿系列等。

Q: What are the main differences between polyolefin elastic fiber and spandex, and in which application fields?

A: Thetypes of main raw materials are mainly different. Polyolefin material is an inert material; its main characteristics are “acid and alkali resistance, aging resistance and chlorine resistance”; it can be set at low temperatures; it forms an adhered “skeleton” after setting. The fabric with polyolefin elastic fiber has a good texture and stable and lasting elasticity. Polyolefin elastic fiber has a wide range of applications, mainly including (1) special fabrics that need to be set below 160°C, especially below 120°C; (2) fabrics requiring acid and alkali treatment process; (3) swimsuit fabrics requiring chlorine resistance; (4) Knitted tatting-like fabrics, such as underwear wear series.

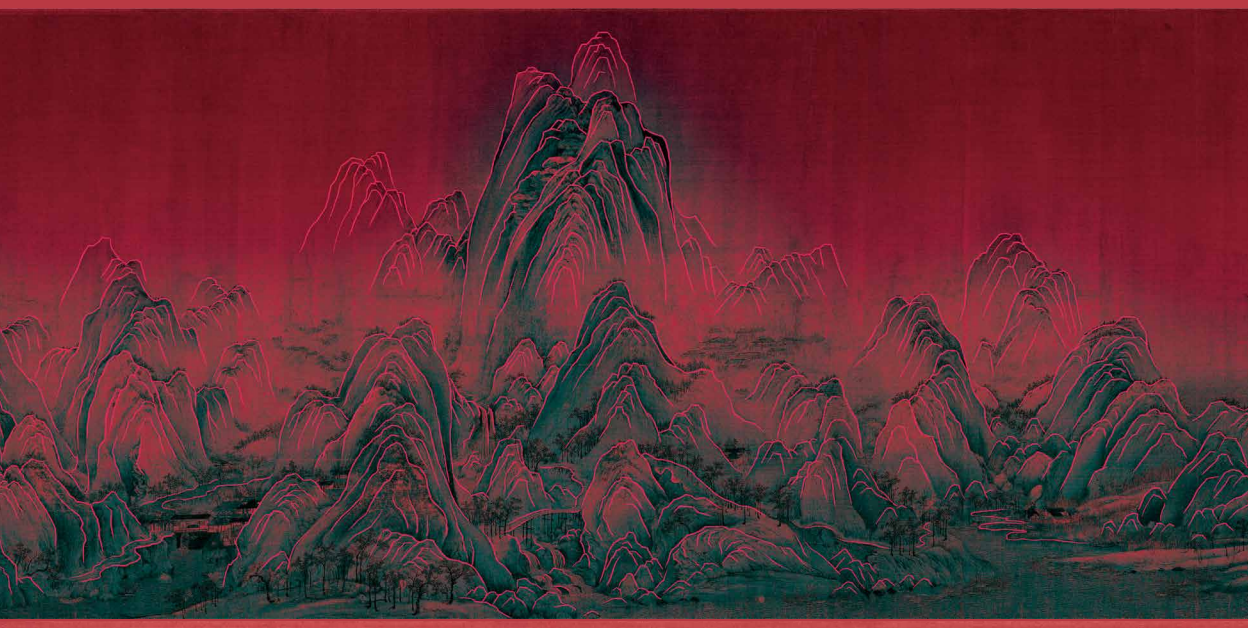
中国纤维流行趋势 China Fibers Fashion Trends 2023/2024

纤/破壁

FIBER · BREAKTHROUGH

打破壁垒，涌现活力。中国纤维突破壁垒，联通上下游的应用和技术门槛，阻燃聚酯、阻燃再生纤维素纤维，高强聚酰胺 66、柔性发光纤维等实现跨界应用，大放异彩。中国碳纤维深耕十年，厚积薄发，一步法、两步法大丝束碳纤维成功开发，突破国外技术壁垒，开创国产碳纤维高品质发展之路。

Break down barriers and stimulate vitality. Chinese fiber industry breaks through the application barrier, and unifies the application technical specifications and entry threshold of the upstream and downstream, yielding brilliant results, and achieving the cross-border application of flame-retardant polyester, flame-retardant man-made cellulose fiber, high-strength polyamide 66 and flexible light-emitting fiber, etc. Through ten years of development and accumulation, Chinese carbon fiber industry has successfully developed the one-step and two-step large-tow carbon fibers, breaking through foreign technical barriers, and creating a high-quality development path for domestic carbon fiber industry.



SAFETY PROTECTION FIBER

安全防护纤维

突破环保磷系阻燃剂与聚酯、循环再利用聚酯原位聚合技术，使阻燃更高效、功能更持久，实现产品高值化开发。磷氮系阻燃元素与再生纤维素纤维碰撞，使纤维柔软爽滑、吸湿透气、低烟无熔滴，满足终端品牌对可持续发展的迫切需求。高强聚酰胺 66 纤维集优异的强度、耐磨、耐低温、亲肤吸湿等优点于一体，跨界军民两用，赋予冲锋衣、军服新维度和舒适度。完美结合柔性发光技术的高性能纤维，为汽车工业、信息电子、智能鞋服提供时尚设计新方案。

The product uses the phosphorus-based flame retardant which has less smoke and low toxicity; The in-situ polymerization process enables the recycling of polyester fiber to regenerate the function; With the low-carbon combination of flame-retardant and man-made cellulose fiber, the product is highly effective in flame-retardant and durable in function, and has yield brilliant results is the fields of sports wears, indoor curtains, beddings and conveyor belts, etc. The high-strength polyamide 66 fiber, with the advantages of excellent strength, wear resistance, low temperature resistance, skin-friendly and moisture absorption, can offer winter jackets and military uniforms a new dimension and comfort level, and is used for both military and civilian purposes. The high-performance fiber, which is perfectly combined with flexible light-emitting technology, can provide new fashion design solutions for the automotive industry, information electronics, and intelligent shoes and clothing.

推荐纤维及品牌 Recommended fibers and brands

共聚改性阻燃聚酯纤维
Copolymerized modified anti-flaming polyester fiber

化学法循环再利用阻燃聚酯纤维
Chemical recycling anti-flaming polyester fiber

阻燃竹材再生纤维素纤维
Anti-flaming bamboo pulp regenerated cellulose fiber

高强聚酰胺 66 纤维
High-strength polyamide 66 fiber

柔性发光纤维
Flexible luminescent fiber

新凤鸣集团 XIN FENG MING GROUP 股票代码：603225 — 凤鸣 FENGMING

GREEN CIRCLE 佳人新材料 JIAREN NEW MATERIALS — 佳人 GREEN CIRCLE

TANBOOCEL — 天竹 ECOBAMBOO

神马 shenma

TAYHO 泰和新材 — 莱特美 LITME

共聚改性阻燃聚酯纤维

Copolymerized modified anti-flaming polyester fiber

新凤鸣集团
XIN FENG MING GROUP
股票代码：603225

凤鸣
FENGMING

推荐理由

采用环保磷系阻燃剂及原位聚合技术，使阻燃剂分散均匀，有效含量高。纤维具有高效阻燃、阻燃性持久等特点，产品竞争力强。

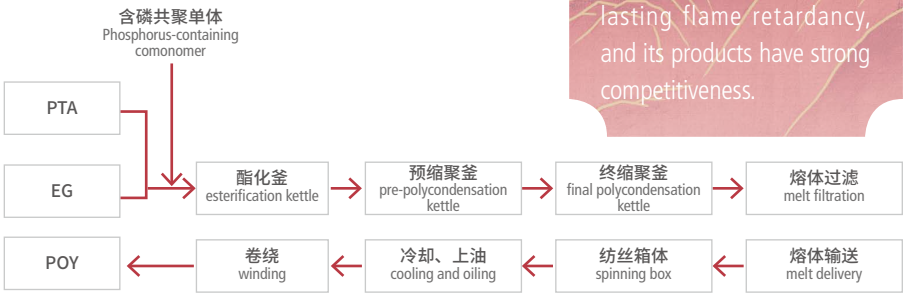
Recommendation Reasons

It adopts environment-friendly phosphorus-based flame retardant and in-situ polymerization technology, making flame retardant evenly dispersed and has high effective content. The fiber has the characteristics of high efficiency and long-lasting flame retardancy, and its products have strong competitiveness.

制备技术
Processing Technology

将磷系阻燃剂以原位聚合的方式在聚合反应釜共聚，使其均匀混入聚酯熔体中制得阻燃聚酯熔体，经熔体直纺工艺和卷绕技术制得共聚改性阻燃聚酯纤维。

The phosphorus-based flame retardant is copolymerized in the polymerization reactor by in-situ polymerization. It is evenly mixed into the polyester melt to prepare the anti-flaming polyester melt, and the copolymerized modified anti-flaming polyester fiber is prepared by melt direct spinning process and winding technology.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：83dtex/72F、178dtex/96F POY

Main Specifications

Filaments: 83dtex/72F,178dtex/96F POY

标准及认证

《阻燃涤纶预取向丝》（F/ZT 54084-2016）

Standards and Certifications

Flame-retardant polyester partially oriented yarns (F/ZT 54084-2016)

纤维性能与制品特点

- 极限氧指数≥ 32%、阻燃效果优异
- 阻燃剂在使用中无磷析出，对生态环境没有影响
- 织物挺括，悬垂，具有良好的染色性和手感

Fiber Performance and Product Features

· Limiting oxygen index ≥32%, excellent flame retardant effect

· The flame retardant has no phosphorus precipitation in use, without influence on the ecological environment

· The fabric is stiff and draping with good dyeability and hand feeling

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂伸长率（%） Elongation at break(%)	磷含量（ppm） Phosphorus Content (ppm)	极限氧指数（%） Limiting Oxygen Index(%)	含油率（%） Oil Content (%)
83dtex/72F	⩾ 2.0	130±5	⩾ 6800	32	0.4±0.1

下游应用指导

The downstream application guidance

阻燃聚酯纤维在高温条件下的耐碱性差，不宜高温碱减量处理

The anti-flaming polyester fiber has poor alkali resistance at high temperaturesl It is not suitable for alkali reduction treatment at high temperatures

纤维应用

Fiber Application

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
	✓							

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓							
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
						✓		
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：共聚改性阻燃聚酯纤维有什么突出的亮点?

A：本产品通过在聚合过程中添加环保磷系阻燃剂，阻燃剂均匀分散在聚酯熔体中，纤维中的磷含量可达到 6800ppm，制得的纤维具有优良的热稳定性，织物可获得永久阻燃性能，具有非常广阔的市场前景和良好的经济效益。

Q: What are the highlights of the copolymerized modified anti-flaming polyester fiber?

A: In this product, the environmentally-friendly phosphorus-based flame retardant is added in the polymerization process, makingflame retardantevenly dispersed in the polyester melt The phosphorus content in the fiber can reach 6,800ppm. The prepared fiber has excellent thermal stability, and the fabric can obtain permanent flame retardant performance.Ithas a very broad market prospect and good economic benefits.

GREEN CIRCLE

佳人新材料
JIAREN NEW MATERIALS

佳人
GREEN CIRCLE

推荐理由

化学法循环再利用技术升级，融合磷系阻燃聚合改性技术，创新了循环再利用聚酯纤维的阻燃功能，实现产品高值化开发。

Recommendation Reasons

The chemical recycling technology is upgraded with integrated phosphorus-based anti-flaming polymerized modification technology to innovate the anti-flaming function of recycling polyester fiber and realize the high-value development of products.

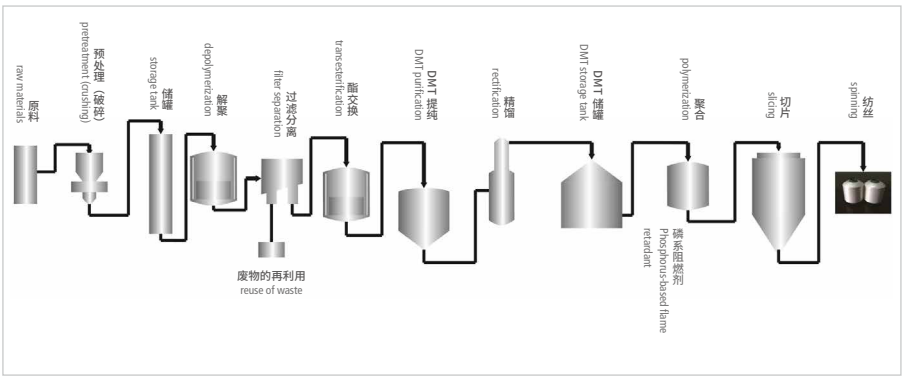
化学法循环再利用阻燃聚酯纤维

Chemical recycling anti-flaming polyester fiber

制备技术
Processing Technology

采用先进的 DMT 化学法循环再生技术与工艺装备，结合阻燃聚合改性切片生产技术，制备再生阻燃聚酯切片，经熔融纺丝制备纤维。

It adopts advanced DMT chemical recycling technology and process equipment, combined with anti-flamingpolymerized modified chip production technology, to prepare regenerated anti-flaming polyester chips, and then prepares fibers through melt spinning.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：22-330dtex/12-288F FDY

Main Specifications

Filaments: 22-330dtex/12-288F FDY

标准及认证

《再生涤纶牵伸丝》（FZ/T 54048-2012）

Standards and Certifications

Regenerated polyester drawn yarns (FZ/T 54048-2012)

纤维性能与制品特点

• 化学法再生、实现资源再利用

• 磷系阻燃、低烟无毒，极限氧指数达 32%

Fiber Performance and Product Features

· Chemical regeneration to realize resource reuse

· Phosphorus-based flame retardance, low smoke and nontoxicity, and the limiting oxygen index reaches 32%

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity(cN/ dtex)	断裂伸长率（%） Elongation at break(%)	磷含量（ppm） Phosphorus Content (ppm)	极限氧指数（%） Limiting Oxygen Index(%)	含油率（%） Oil Content (%)
83.38dtex/72F	3.85	28.81	6500	32	0.8
	沸水收缩率（%） Boiling water shrinkage (%)	网络度（t/m） Degree of intertwining (t/m)	条干（%） Tsun-gan(%)	染色等级（级） Dyeing grade (grade)	
	9.05	24.5	1.14	4.5	

下游应用指导
The downstream application guidance

与常规阻燃聚酯纤维一致

Consistent with conventional anti-flaming polyester fiber

纤维应用

Fiber Application

服装用纺织品 Clothing textiles								
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓							
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles								
床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
✓	✓		✓					

Q&A

Q：化学法循环再利用聚酯纤维在节能减排技术方面的体现，你知道吗？

A：当今社会对产品环保性能及功能的重视程度日益增加，通过先进的化学法循环再生技术，在 DMT 化学法对聚酯进行醇解、单体再聚合的过程中添加阻燃改性剂进行聚合改性，将环保、舒适、功能性等特点融入到循环再利用聚酯纤维中，产品种类不断丰富。化学法循环再利用技术相比传统以石油提炼为原料的生产工艺，CO_2 排放量降低，能源消耗少。

Q: Do you know the reflection of chemical recycling polyester fiber in energy saving and emission reduction technology?

A: The present society pays more attention to the environmental protection performance and function of products. Through the advanced chemical recycling technology, the anti-flaming modifier is added in the process of alcoholysis and monomer repolymerization of polyester by the DMT chemical method for polymerized modification. The characteristics of environmental protection, comfort and functionality are integrated into the recycling polyester fiber, and the variety of products is constantly enriched. Compared with the traditional production process with refined petroleum as the raw material, chemical recycling technology has lower CO_2 emissions and less energy consumption.

天竹
ECOBAMBOO

阻燃竹浆再生纤维素纤维

Anti-flaming bamboo pulp regenerated cellulose fiber

推荐理由

以竹材为原料，生态环保，可生物降解。纤维柔软爽滑、吸湿透气、磷氮阻燃、低烟无熔滴，功能性和绿色属性相联合，满足终端品牌对可持续发展的需要。

Recommendation Reasons

It uses bamboo as the raw material, which is eco-friendly and biodegradable. The fiber is soft and smooth, moisture-retentive and air-permeable, and anti-flaming by phosphorus and nitrogen with low smoke and no molten drops. The combination of functionality and green attributes meets the needs of terminal brands for sustainable development.

制备技术
Processing Technology

以竹子为原料，通过预水解硫酸盐工艺处理，把竹子内纤维素提取出来，再经碱化、黄化制备成纤维素磺酸酯，将磷氮系阻燃剂通过高效分散技术与之混合均匀，经纺丝、多级牵伸等工序制造而成。

It uses bamboo as the raw material, extracts cellulose from bamboo through a pre-hydrolysis sulfate process, then prepares cellulose sulfonate through alkalization and yellowing, then evenly mixes phosphorus-nitrogen-based flame retardant with it through efficient dispersion technology, and finally makes the fiber through spinning, multi-level elongation and other processes.

纤维及制品特点
Characteristics of Fiber and Product

主要规格
短纤：1.56dtex×38mm

Main Specifications
Staple: 1.56dtex×38mm

标准及认证
《竹材粘胶短纤维》（FZ/T 52006-2006）

Standards and Certifications
Viscose Staple Fibers Made From Bamboo Board (FZ/T 52006-2006)

纤维性能与制品特点

- 生物基来源、采用新原料（慈竹、黄竹、毛竹）、以竹代木、绿色环保
- 织物柔软爽滑、亲肤细腻、吸湿性和透气性良好
- 可降解
- 磷氮系阻燃，低烟无毒、极限氧指数达到 28%

Fiber Performance and Product Features

· Bio-based sources, using new raw materials (bambusa emeiensis, dendrocalamus membranaceus, and phyllostachys edulis), and replacing wood with bamboo, which is environmentally-friendly

· The fabric is soft and smooth, skin-friendly, and fine with good hygroscopicity and air permeability

· Degradable

· Phosphorus-based flame retardance, low smoke and nontoxicity, and the limiting oxygen index reaches 28%

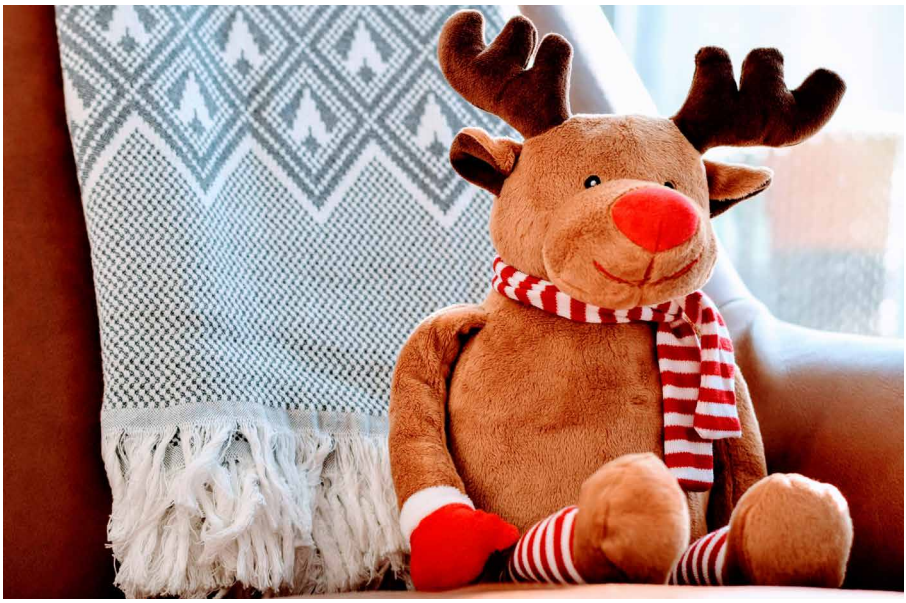
产品规格 Specifications	干断裂强度（cN/ dtex） Dry breaking strength (cN/ dtex)	干强变异系数（%） Variation coefficient of dry strength (%)	干断裂伸长率（%） Dry elongation at break (%)	湿断裂强度（cN/ dtex） Wet breaking strength (cN/ dtex)
1.56dtex×38mm	2.13	12.7	18.2	1.0
极限氧指数（%） Limit oxygen index (%)	疵点（mg/100g） Defect (mg/100g)	白度（%） Whiteness(%)	回潮率（%） Moisture regain (%)	
28	0.2	78.8	11.87	

下游应用指导

The downstream application guidance

参考常规再生纤维素纤维的后道工艺

Refer to thepost treatment process of conventional regenerated cellulose fiber



纤维应用
Fiber Application

服装用纺织品 Clothing textiles

休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
✓		✓	✓	✓			✓	
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
	✓	✓	✓	✓	✓	✓		

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓					✓		✓
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓		✓		✓				
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：阻燃竹浆再生纤维素纤维的优势体现在哪里？

A：阻燃竹浆再生纤维素纤维秉承了再生纤维素纤维的特点，光滑柔软、吸放湿优良，染色靓丽，资源环保再生，可生物降解，同时保留了竹浆纤维的抑菌性能，还采用磷氮系阻燃剂，阻燃性能好，燃烧无熔滴。其制成的织物可广泛应用于防护服装、内衣、装饰、家居、床品等众多领域。

Q: What are the advantages of the Anti-flaming Bamboo Pulp Regenerated Cellulose Fiber?

A: The Anti-flaming Bamboo Pulp Regenerated Cellulose Fiber inherits the characteristics of regenerated cellulose fiber, which is smooth, soft, excellent in moisture absorption and desorption, bright-dyeing, environmentally-friendly, and biodegradable, while retaining the antibacterial performance of bamboo pulp fiber. It also adopts phosphorus-nitrogen-based flame retardant, which has good flame retardant performance and no molten drops during combustion. The fabric made from it can be widely used in protective clothing, underwear, decoration, leisure wear,bedding and many other fields.

神马

shenma

推荐理由

强度高、耐高温、耐疲劳，综合性能优异。细旦纤维可用于高速缝纫线、降落伞伞绳、帐篷等产业用领域，拓展了纤维的应用范围。

Recommendation Reasons

High strength, high temperature resistance, fatigue resistance and excellent comprehensive performance. Fine-denier fiber can be used in high-speed sewing thread, parachute rope, tent and other industrial fields, which expands the application range of fibers.

高强聚酰胺 66 纤维

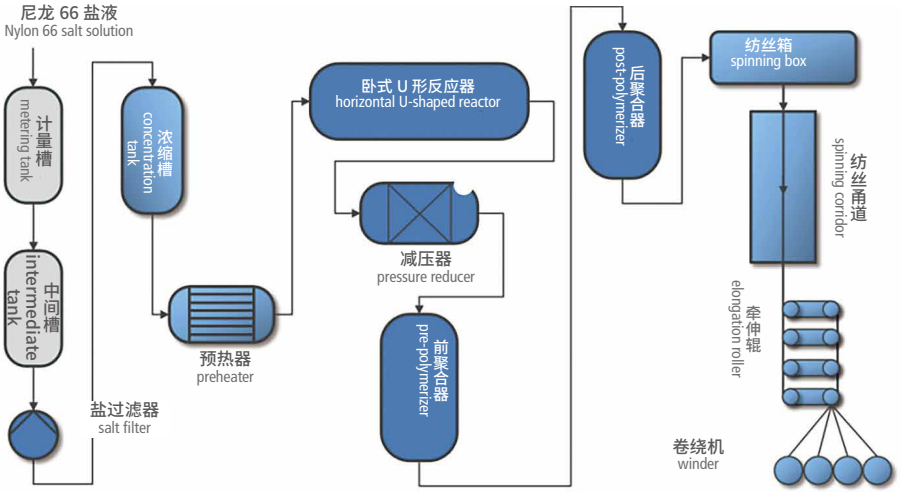
High-strength polyamide 66 fiber

制备技术

Processing Technology

通过对盐液精制、高温浓缩、高压反应、负压脱水制备成高黏聚合物，在线添加耐热剂、纺丝顺滑剂等添加剂，并直接纺丝，通过冷却定型、多级牵伸松弛定型，使纤维具有更高的强度和尺寸稳定性。

High-viscosity polymer is prepared by salt solution refinement, high-temperature concentration, high-pressure reaction and negative-pressure dehydration. With additives such as the heat-resistant agent and spinning smoothing agent added on the production line, the fiber is directly spun. Through cooling setting and multi-levelelongation relaxation setting, the fiber has higher strength and dimensional stability.



纤维及制品特点

Characteristics of Fiber and Product

主要规格

长丝：110 ～ 278dtex/36F、312dtex/54F、
470dtex/72F、700dtex/108F FDY

Main Specifications

Filaments: 110~278dtex/36F,312dtex/54F,
470dtex/72F,700dtex/108F FDY

标准及认证

《缝纫线用锦纶 66 牵伸丝》（FZT 54055-2012）

Standards and Certifications

Polyamide 66 full drawn yarns for sewing thread (FZT 54055-2012)

纤维性能与制品特点

- 强度高、耐高温、耐疲劳、抗冲击性好
- 色牢度稳定、易加工、耐低温
- 干热收缩小，品质均匀稳定，制成品变形少

Fiber Performance and Product Features

· High strength, high temperature resistance, fatigue resistance, and good impact resistance

· Stable color fastness, easy processing, and low temperature resistance

· Light dry thermal shrinkage, uniform and stable quality, and less deformation of finished products

产品规格 Specifications	断裂强度（cN/ dtex） Breaking tenacity (cN/ dtex)	断裂伸长率（%） Elongation at break(%)	干热收缩率（%） Dry thermal shrinkage (%)	白度（%） Whiteness (%)
167dtex/36F	⩾ 8.16	21	4.4	61.2

下游应用指导

The downstream application guidance

织造：可交织也可单独织造，根据市场需求确定交织比例；用于制作针织与梭织面料；也可用于生产水刺、针刺、热轧等无纺布

染整：以酸性染料为主，根据需要可适当添加分散染料做辅助，染色温度 70-120°C、热定型温度 140-190°C

Weaving: It can be interwoven or woven separately, and the interweaving ratio is determined according to market demand; it is used to make knitted and woven fabrics; it can also be used to produce non-woven fabrics such as spunlace, needling, and hot rolling

Dyeing and finishing: Acid dyes are mainly used, and disperse dyes can be properly added as auxiliary according to the need, with the dyeing temperature of 70-120 °C、and heat setting temperature of 140-190°C

纤维应用
Fiber Application

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓					✓		
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓			✓					
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								

Q&A

Q：聚酰胺 66 纤维现阶段都应用在哪些领域?

A：随着己二腈国产化速度的加快，聚酰胺 66 产能优势逐步释放，由于聚酰胺 66 纤维优异的综合性能，将成为民用纺织品领域和军需用品领域主流，主要可用于内衣、瑜伽服、速干衣、皮肤衣、冲锋衣以及军用服装、装具等。

Q: What are the application fields for polyamide 66 fiber at present?

A: With the acceleration of the localization of adiponitrile, the productivity advantage of polyamide 66 is gradually released. Due to its excellent comprehensive properties, polyamide 66 fiber will become the mainstream in the fields of civil textiles and military supplies, mainly used in underwear, yoga clothes, quick-drying clothes, skin clothes, jackets, military clothes, and tools.

泰和新材

莱特美
LITME

柔性发光纤维

Flexible luminescent fiber

推荐理由

将高性能纤维的高强耐磨、可编织性和柔性与电子器件的智能化完美融合，为汽车工业、信息电子、智能鞋服提供时尚设计新方案。

Recommendation Reasons

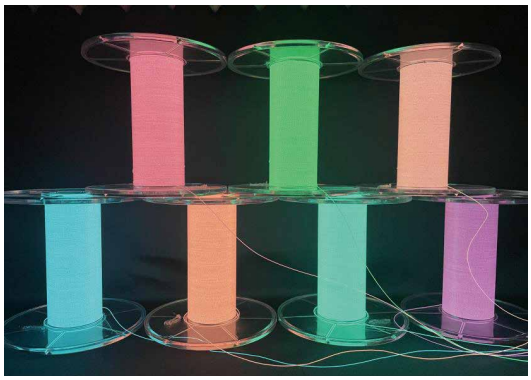
The high strength, wear resistance, knittability and flexibility of high-performance fiber are perfectly integrated with the intelligence of electronic devices, providing a new scheme of fashion design forthe automobile industry, information electronics and smart shoes and clothing.

制备技术
Processing Technology

以导电性和柔性良好的高分子导电纤维为基底，透明高分子材料和发光活性材料为复合活性层，通过平行或缠绕方式制备柔性发光纤维。

Flexible luminescent fiber is prepared by the parallel or winding method, based onhigh polymer conductive fiber with good conductivity and flexibility, with transparentpolymer material and luminescent active material as the composite active layers.

纤维及制品特点
Characteristics of Fiber and Product



主要规格
纤维直径：0.2-0.5mm

Main Specifications
Fiber diameter: 0.2-0.5mm






纤维性能与制品特点

- 电驱动可控性好，发光均匀、长时间发光不会发热
- 直径细，且在 0.2mm-0.5mm 间精确调控
- 柔性好可拉伸，能任意弯折打结，可塑性强
- 耐洗耐磨

Fiber Performance and Product Features

· Good controllability of electric drive, uniform light emission and no heat generation after long-term light emission

· Thin diameter, precisely controlled between 0.2 mm to 0.5 mm

· Flexible and stretchable; it can be bent and knotted at will, with strong plasticity

· Washing-resistant and wear-resistant

产品规格 Specifications	发光亮度 (cd/m²) Luminance (cd/m²)	纤维线径 (μm) Fiber line diameter (μm)	纤维强度 (N) Fiber strength(N)	断裂伸长率 (%) Elongation at break (%)	亮度范围：5-50cd/m² Luminance range: 5-50cd/m²	强度范围 (N) Strength range (N)	线径范围 (μm) Line diameter range (μm)
F31150KB2 （直径 0.3mm）高强度 F31150KB2 (Diameter 0.3mm)High strength	⩾ 10	300±30	⩾ 8	⩾ 3		5-60	270-330
N13100KB1 （直径 0.3mm）高柔性 N13100KB1 (Diameter 0.3mm) High flexibility	10-18	300±30	⩾ 5	⩾ 10	/	/	270-330

注：上述规格产品发光颜色为蓝色，还有青、粉、紫、红、绿、橙等颜色种类

Note: The luminous color of the products with the above specifications is blue, as well as cyan, pink, purple, red, green, and orange.

下游应用指导

The downstream application guidance

纺纱：发光纤维属于复合纤维纱线，不可再次进行混纺

染整：不建议使用染料进行染整工序。后整理热定型温度不宜超过 150°C

织造：（1）机织：可以选用低强高伸和高强低伸两种规格产品，高伸长适合作为纬纱使用；低伸长用作经纱时，应与普通纱线交替排列进行织造。（2）针织：选用低强高伸产品，且织造用的配线伸长率应与发光纤维一致。（3）刺绣：选用低强高伸和高强低伸两种规格产品，且纤维直径控制在 300μm 左右。（4）缝纫：采用高强低伸产品，且纤维断裂强力应在 40N 以上，保证缝纫过程顺利进行

Spinning: Luminous fiber belongs to composite fiber yarn, which cannot be blended again

Dyeing & finishing: Dyeing & finishing processes with dyes are not recommended. The heat setting temperature of after-treatment shall not exceed 150°C

Weaving: (1)Weaving: The products with two specifications - low strength and high elongation, and high strength and low elongation, are selected; high elongation is suitable for weft; when

low elongation is used as warp, the fiber shall be woven alternately with ordinary yarn. (2) Knitting: The products with low strength and high elongation are selected, and the elongation of wiring used for weaving shall be consistent with that of luminous fiber. (3) Embroidery: The products with two specifications - low strength and high elongation, and high strength and low elongation, are selected, and the fiber diameter is controlled at about 300μm. (4) Sewing: The products with high strength and low elongation are selected, and the fiber breaking strength shall be above 40N to ensure a smooth sewing process

纤维应用

Fiber Application

服装用纺织品 Clothing textiles

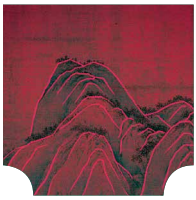
休闲服 Leisure wear	运动服 sportswear	安全防护服 Safety protection suit	家居服 Home wear	婴儿服 Baby clothes	西装 Suit	牛仔 Jeans	工装 Overalls	毛衣 Sweater
	✓	✓					✓	
贴身内衣 Lingerie	围巾 Scarf	袜子 Sock	鞋材 Shoe materials	箱包 Luggage	泳衣 Swimsuit	衬衣 Shirt	外套 Coat	服装里料 Garment lining
			✓	✓	✓			
羽绒服 Down jacket	高端成衣 High-end ready-to-wear	帽子 Cap	专业运动服 Professional sportswear	水溶花边 Water soluble lace	冲锋衣 Outdoor jacket	手套 Gloves	瑜伽服 Yoga clothes	防晒服 Sun-proof clothing
✓	✓	✓	✓					
户外特殊作业 Outdoor special operation	人体护理服 Body caring clothes							

家用纺织品 Home textiles

床上寝具 Bedding	窗帘 Curtain	地毯 Carpet	沙发布 Sofa fabric	填充物 Filler	毛巾 Towel	玩具 Toys	桌布 Tablecloth	绣花底布 Embroidery cloth
	✓					✓		

产业用纺织品 Industrial textiles

航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
	✓							
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
✓	✓			✓				
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				
✓								



Q&A

Q：柔性发光纤维的市场开拓情况及发展潜力，你了解吗？

A：柔性发光纤维是将发光技术和纤维制备技术相结合获得的超细发光纤维产品，具备发光均匀、柔性可编织、绿色安全、可塑性强等独特优势，能够采用多种织造方式获得相应制品，与电子器件集成能够获得舒适、高效、多功能的智能系统，为汽车工业、智能穿戴、信息电子等领域的产品创新提供新的基础材料和解决方案。目前已在多家知名汽车厂商、电子信息领域的头部企业展开合作。同时在智能穿戴领域推广较为迅速，发光礼服、发光鞋、防护服装等产品基本成型，行业发展潜力巨大。

Q: Do you know the market development and development potential of flexible luminescent fiber?

A: Flexible luminescent fiber is an ultra-fine luminescent fiber product obtained by combining luminescent technology and fiber preparation technology. It has unique advantages such as uniform luminescence, flexible weaving, green safety and strong plasticity, and can be used to obtain corresponding products by various weaving methods. When integrated with electronic devices, it can obtain a comfortable, efficient and multi-functional intelligent system, providing new basic materials and solutions for product innovation in the automobile industry, smart wear, information electronics and other fields. At present, it has cooperated with many famous automobile manufacturers and leading enterprises in the field of electronic information. At the same time, it has been promoted rapidly in the field of smart wear, and products such as luminous dresses, luminous shoes and protective clothing have basically formed, with hugeindustrial development potential.

呼之欲出的大丝束碳纤维，将 50000 根纤维集于一束，突破制造成本瓶颈，开创高性能碳纤维平民化道路，支撑复合材料轻量化，走向风电叶片、轨道交通、航空航天主战场，助力先进制造业低碳发展。

The large-tow carbon fiber combines 50000 monofilament in one tow, breaking through the bottleneck of manufacturing cost and reducing it by 40%. The product not only starts the popularization of high-performance carbon fiber, but also supports the lightweight of composite materials. And it has been mainly applied in wind turbine blades, rail transit and aerospace, assisting the low-carbon development of advanced manufacturing industry.

HIGH-PERFORMANCE CARBON FIBER

高性能碳纤维

推荐纤维及品牌 **Recommended fibers and brands**

50K 大丝束碳纤维
50K large-tow carbon fiber

恒神 HENGSHEN

吉林碳谷 Jilin Tanggu

50K 大丝束碳纤维

50K large-tow carbon fiber

恒神 HENGSHEN　　吉林碳谷 Jilin Tanggu

推荐理由

大丝束碳纤维的成本为小丝束碳纤维的 50%-60%，其大规模应用将实现碳纤维复合材料由“贵族”材料走向“平民化”。“双碳”背景下，风电叶片等需求爆发，大丝束碳纤维市场空间广阔。

Recommendation Reasons

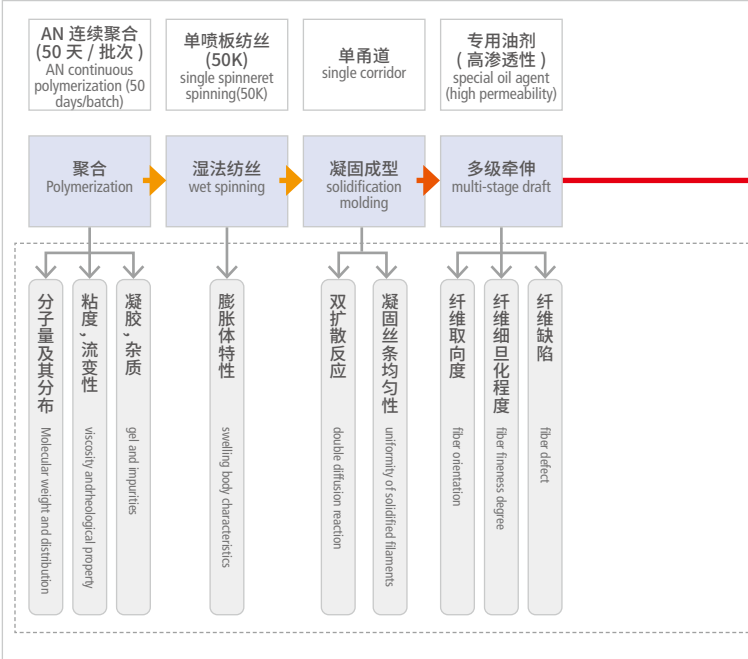
The cost of large-tow carbon fiber is 50%-60% of that of small-tow carbon fiber, and its large-scale application will realize the transition of carbon fiber reinforced composites from "noble" materials to "civilian" materials. Under the background of "carbon peaking and carbon neutrality", the demand for wind turbine blades has exploded, and the market space of large-tow carbon fiber is broad.

制备技术

Processing Technology

HF20-50K 碳纤维：采用丙烯腈连续聚合，湿法纺丝工艺，使用 50K 单喷板纺丝，制备聚丙烯腈纤维原丝，经预氧化预处理、均质预氧化、低温 - 高温碳化、深度均质表面处理等工序制备 50K 大丝束碳纤维。

HF20-50K Carbon Fiber: It adopts continuous acrylonitrile polymerization and wet spinning process, and uses 50K single spinneretto prepare polyacrylonitrile fiber precursor, and then prepares 50K large-tow carbon fiber through pre-oxidation pretreatment, homogeneous pre-oxidation, low-high temperature carbonization, deep homogeneous surface treatment, and other procedures.



纤维及制品特点
Characteristics of Fiber and Product

主要规格

长丝：50K

Main Specifications

Filament: 50K

标准及认证

《聚丙烯腈基碳纤维大丝束原丝》（FZT 54130-2021）

Standards and Certifications

PAN-based carbon fiber large-tow precursor (FZT 54130-2021)

纤维性能与制品特点

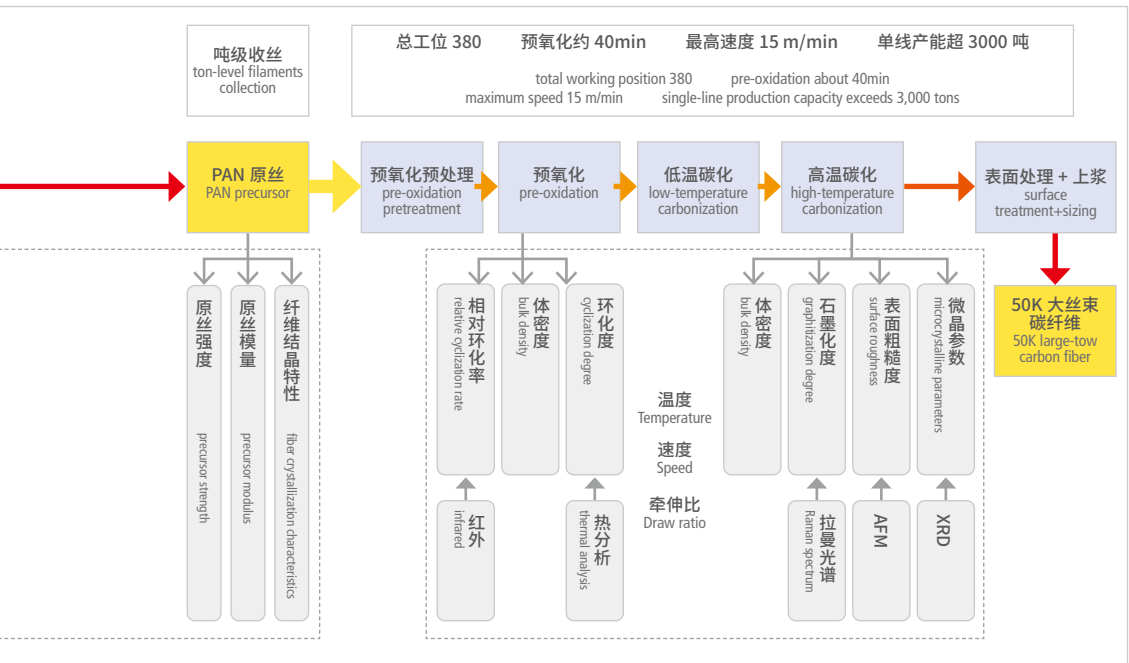
- 具有高强度，高模量等优异的力学性能
- 具有耐高温、耐烧蚀等优异的物理化学特性
- 比重轻，低成本

Fiber Performance and Product Features

· It has excellent mechanical properties such as high strength and high modulus

· It has excellent physical and chemical properties such as high-temperature resistance and ablation resistance

· light proportion and low cost



产品规格 Specifications	拉伸强度 (MPa) Tensile strength (MPa)	拉伸模量 (GPa) Tensile modulus (GPa)	断裂伸长率 (%) Elongation at break(%)	含碳量 (%) Carbon content (%)	线密度 (mg/m) Linear density (mg/m)	体密度 (g/cm^3) Volume density (g/cm^3)	企业 Company
50K	⩾ 4200	230-260	⩾ 1.5%	⩾ 93	2000±200	1.78	恒神 HENGSHEN
	⩾ 4000	⩾ 230	1.5	⩾ 92	2600±30	1.76	吉林碳谷 Jilin Tangu

下游应用指导

The downstream application guidance

• 使用 50K 碳纤维进行复合材料制备过程中，对应上浆剂的选择一定与下游的基体树脂匹配
• 针对不同的用途，对强度和模量进行匹配性调整

· In the process of preparing composites with 50K carbon fiber, the selection of the corresponding sizing agent shall match the downstream matrix resin
· According to different uses, the strength and modulus are adjusted accordingly

50K 大丝束碳纤维预浸料性能指标如下，仅供应用设计参考
600g/m^2 预浸料性能（50 K 碳纤维）
The performance indexes of 50K large-tow carbon fiber prepreg are as follows, which are only for reference in application design
600g/m2 Prepreg Performance (50K Carbon Fiber)

序号 SN	测试项目 Test Item	单位 Units	测试值 Test Value	Cv%
1	0°拉伸强度 0° tensile strength	MPa	2045	3.00
2	0°拉伸模量 0°tensile modulus	GPa	142	2.81
3	0°压缩强度 0° compression strength	MPa	1450	5.09
4	0°压缩模量 0° compression modulus	GPa	132	2.93
5	90°拉伸强度 90° tensile strength	MPa	38.1	14.43
6	90°拉伸模量 90° tensile modulus	GPa	8.37	1.16
7	90°压缩强度 90° compression strength	MPa	164	5.46
8	90°压缩模量 90° compression modulus	GPa	9.3	3.84
9	面内剪切强度 In-plane shear strength	MPa	50.5	1.86
10	面内剪切模量 In-plane shear modulus	GPa	4.9	4.93
11	V 型轨道剪切强度 V-shaped track shear strength	MPa	87	2.82
12	V 型轨道剪切模量 V-shaped track shear modulus	GPa	5.2	7.14
13	层间剪切强度（ILSS） Interlaminar shear strength (ILSS)	MPa	84	3.06

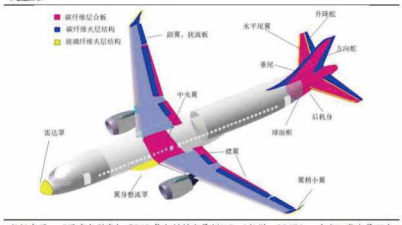


图19：C919碳纤维复合材料用量12%，对比A350、B787约50%的用量还有很大差距

数据来源：《国产大型客机C919复合材料发展侧记》（杨洋，2017），广发证券发展研究中心

纤维应用

Fiber Application

产业用纺织品 Industrial textiles								
航空航天 Aerospace	汽车内饰及配件 Automotive interior and accessories	汽车轻量化 Lightweight of automobile	轨道交通 Rail Transit	风电叶片 Wind turbine blade	建筑增强 Building enhancement	军用纺织品 Military textiles	医用纺织品 Medical textiles	卫生纺织品 Sanitary textiles
		✓	✓	✓	✓			
户外用品 Outdoor products	体育用品 Sporting goods	清洁用品 Cleaning supplies	过滤产品 Filtration products	消防用品 Fire supplies	无人机 UAVs	输送带 Conveyors	渔网 FishNet	降落伞伞绳 Parachute cord
	✓				✓			
织带 TAPS	面膜 Masks	口罩 Gauze mask	干、湿巾 Dry and wet tissues	纸尿裤 Diapers				

Q&A

Q：50K 大丝束碳纤维对国家未来发展发展的意义？

A：大丝束碳纤维的成功开发，打破了一直依赖进口的局面，将实现碳纤维复合材料的低成本化生产，使碳纤维材料从“贵族”走向“平民化”，在轨道交通、风力发电、体育器材等领域应用前景广阔。

Q: What is the significance of the 50K Large-tow Carbon Fiber for the future development of the country?

A: The successful development of large-tow carbon fiber has broken the situation of constant import dependence, and will realize the low-cost production of composite carbon fiber materials, so that carbon fiber materials are developed from “noble” materials to “civilian” materials, which has broad application prospects in rail transit, wind power generation, sports equipment, and other fields.

China Fibers Fashion Trends 2023/2024

入围产品 RECOMMEND PRODUCTS

生物基化学纤维
BIO-BASED CHEMICAL FIBERS

可染色纺织专用海藻纤维
Dyeable alginate fiber for textile

循环再利用化学纤维
RECYCLED CHEMICAL FIBER

原液着色异形截面循环再利用聚酯纤维
Dope-dyed deformed-section recycling polyester fiber

原液着色化学纤维
DOPE DYED CHEMICAL FIBER

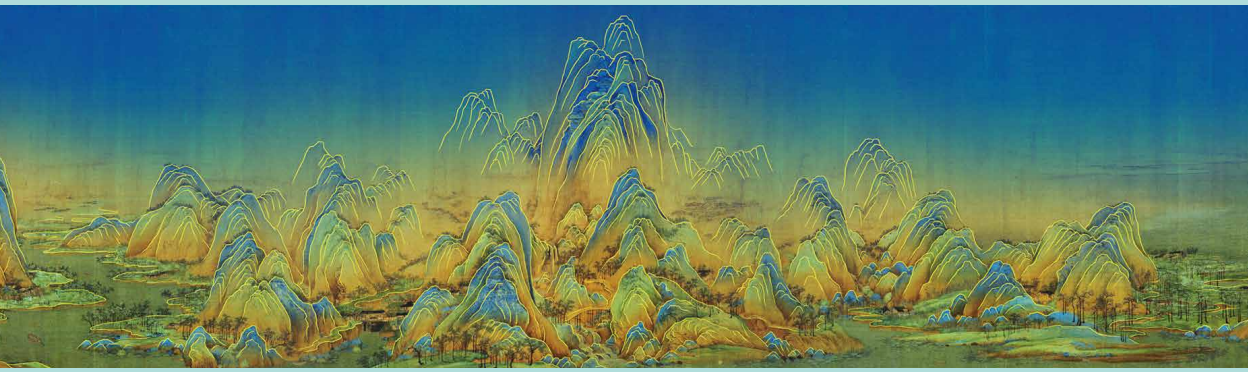
原液着色吸湿排汗聚酯纤维
Dope-dyed moisture-absorption and sweat-releasing polyester fiber

健康防护纤维
HEALTH PROTECTION FIBER

稀土抗紫外抑菌再生纤维素纤维
Anti-ultraviolet and antibacterial regenerated cellulose fiberwith rare-earth
矿物粉体改性聚酯纤维
Mineral-powder-modified polyester fiber

舒感纤维
COMFORTABLE FIBER

改性 PBT 复合弹性纤维
Modified PBT composite elastic fiber
牛奶丝面料专用聚酯弹性纤维
Polyester elastic fiber for milk silk fabric
乳木果添加改性再生纤维素纤维
Shea-butter-added modified regenerated cellulose fiber
羽毛蛋白改性再生纤维素纤维
Feather protein modified regenerated cellulose fiber



轻柔纤维
SOFT FIBER

超细旦轻柔高密聚酯纤维
Superfine denier high-dense Soft polyester fiber
超细旦聚酯纤维
Superfine denier polyester fiber

仿真纤维
SIMULATED FIBER

仿毛聚酯纤维
Wool-like polyester fiber
弹性仿棉双组份复合聚酯纤维
Elastic cotton-like two-component composite polyester fiber
仿羊羔绒专用三叶型截面聚酯纤维
Berber-fleece-like trilobal-section polyester fiber
仿超绒面料专用聚酯纤维
Super-soft-velvet-like polyester fiber

抑菌纤维
BACTERIOSTATIC FIBER

凉感抑菌聚酯纤维
Cooling bacteriostatic polyester fiber
海藻酸钠改性再生纤维素纤维
Sodium alginate modified regenerated cellulose fiber
高弹性抑菌氨纶
High-elastic anti-bacterial spandex
石墨烯改性聚酯混纤
Graphene modified polyester fiber blend

产业用纤维
INDUSTRIAL FIBER

高耐候原液着色聚酯纤维
Dope dyed polyester fiber for high weatherability
抗芯吸拒水聚酯工业丝
Anti-wicking and water-repellency polyester industrial yarn
抑菌防霉高强聚酯工业丝
High-strength, anti-bacterial and anti-mildew polyester industrial yarn

“源于自然，型于科技”。由生物质或含有生物质衍生单体的聚合物制成的纤维，有效地减少了石油等不可再生资源的大量消耗，大大降低资源枯竭和环境污染。

"Originated from nature and shaped by technology". The fibers, which made from biomass or polymers containing bio-derived monomers, can effectively reduce the consumption of non-renewable resources such as oil, and greatly reduce resource exhaustion and environmental pollution.

生物基化学纤维

BIO-BASED CHEMICAL FIBERS

可染色纺织专用海藻纤维

特点： 具有优良的抑菌、防霉、阻燃的性能，其标准回潮率接近羊绒，有羊绒的手感

规格： 1.4dtex~5dtex×38mm

应用技术： 纺纱：可与天然纤维、化学纤维混纺且海藻纤维最高可加入到 70%，请勿单独并条，应和其他混纺纤维进行混合后一起进入梳棉工艺；
染整：避免接触钠离子及碱性环境，温度最好不要超过 80°C，短时间定型温度不超过 160°C

应用领域： 消防服、婴幼儿服饰、运动服；地毯、壁纸；汽车、火车、飞机内饰

- 品牌：海之棉 /hicel
- 申报企业：青岛源海新材料科技有限公司

Dyeable alginate fiber for textile

Feature: It has excellent anti-bacterial, mildew-proof and flame-retardant properties. It's moisture regain close to cashmere, it has a cashmere-like hand feeling.

Specification: 1.4dtex~5dtex×38mm

Applied technology: Spinning: It can be blended with natural fiber and chemical fiber, among which the alginate fiber can be up to 70%. Individual drawing is prohibited. Please mix it with other blended fibers before entering the carding process;

Dyeing and finishing: Please do not contact it with sodion and alkaline environment. The temperature should not exceed 80°C, and the short-time setting temperature should not exceed 160°C

Application field: Firefighter uniform, layette, sportswear; carpet, wallpaper; and interior of automobile, train and aircraft

- **Brand: hicel**
- **Enterprise: Qingdao Yuanhai New Material Technology Co., Ltd.**

“环环相扣，高效利用。”废旧塑料、废旧纺织品等经过回收分拣后进行循环再生、着力实现高效环保的低碳理念。将环保可持续的理念深入到生活各个方面，将绿色环保底色演绎。

"The efficient-utilization of every processand perfectly coherent". Waste plastics, waste textiles, etc. are recovered, sorted and recycled, so as to achieve the low-carbon concepts of high-efficiency and environmentally-friendly. The concepts of environmentally-friendly and sustainability filter into in all aspects of life, laying a green foundation for future development.

循环再利用化学纤维

RECYCLED CHEMICAL FIBER

原液着色异形截面循环再利用聚酯纤维

特点： 兼顾了低碳环保、高色牢度、吸湿性好、透气性好、不易起皱等特点

规格： 0.89~22.2dtex×25~102mm

应用技术： 推荐纺纱支数：20~60 支、推荐再生原液着色纤维含量≥ 50%

应用领域： 休闲服、护膝、护腕、护肘、床品类

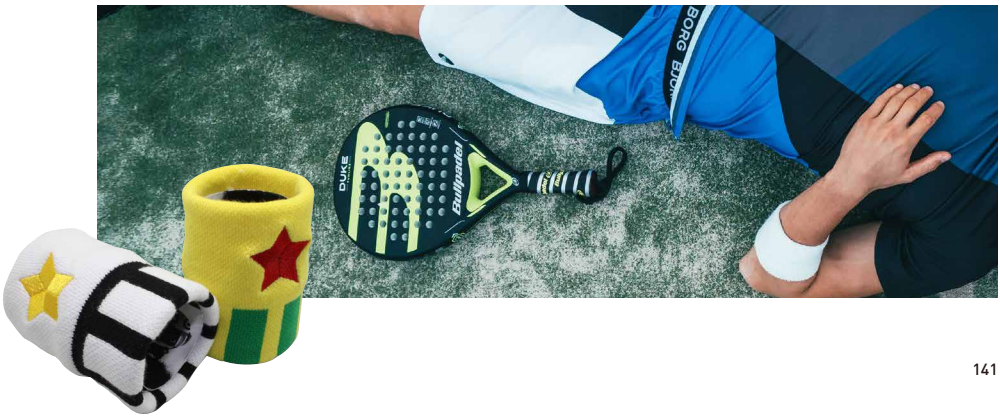
- 品牌：绿地纶 /Redilon
- 申报企业：上海德福伦新材料科技有限公司

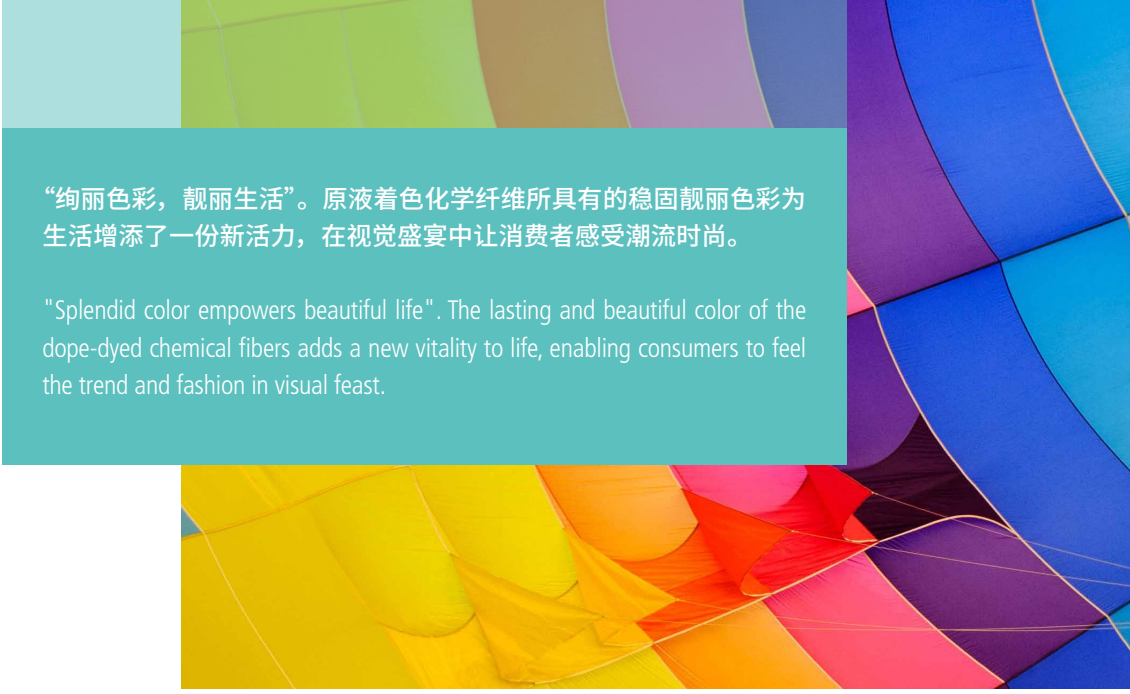
Dope-dyed deformed-section recycling polyester fiber

Feature: It has the features of low-carbon and environmentally-friendly, high color fastness, good moisture absorption, good air permeability, and wrinkle resistance etc.
Specification: 0.89~22.2dtex×25~102mm
Applied technology: Recommended yarn count: 20~60s; Recommended regenerated dope-dyed fiber content: ≥50%

Application field: Casual wear, kneepad, wrist support, elbow support, and bedding

- **Brand: Redilon**
- **Enterprise: Shanghai Different Chemical Fiber Co., Ltd.**





“绚丽色彩，靓丽生活”。原液着色化学纤维所具有的稳固靓丽色彩为生活增添了一份新活力，在视觉盛宴中让消费者感受潮流时尚。

"Splendid color empowers beautiful life". The lasting and beautiful color of the dope-dyed chemical fibers adds a new vitality to life, enabling consumers to feel the trend and fashion in visual feast.

原液着色化学纤维

DOPE DYED CHEMICAL FIBER

原液着色吸湿排汗聚酯纤维

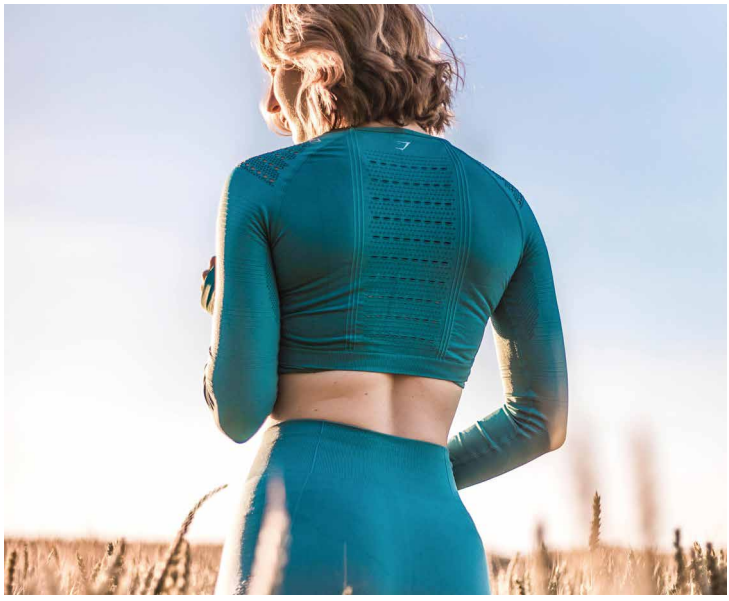
特点： 采用原液着色技术直纺异形短纤维、色泽稳定、色牢度高、吸湿透气

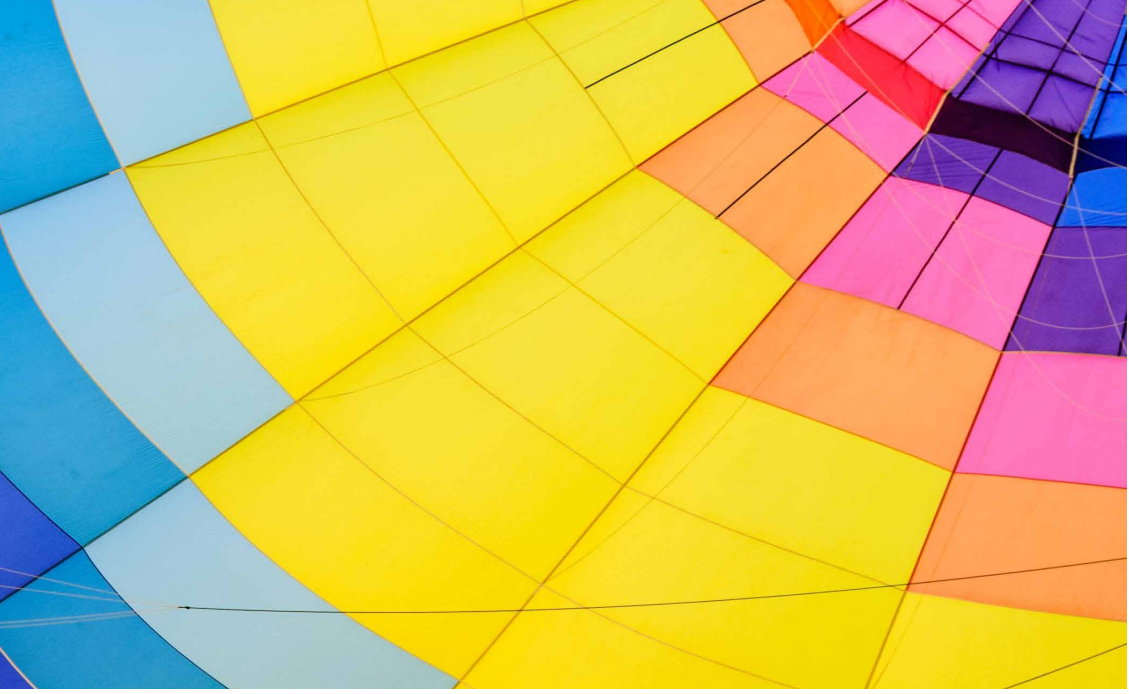
规格： 1.56dtex×38mm

应用技术： 可混纺、单唛纺，各项生产控制参数与正常产品工艺一致，依据需求效果调整加入比例

应用领域： 运动服，户外、旅游休闲服，内衣

- 品牌：安兴 /seeker
- 申报企业：滁州兴邦聚合彩纤有限公司





Dope-dyed moisture-absorption and sweat-releasing polyester fiber

Feature: The deformed staple fiber is directly spun with the dope dyeing technology, with stable color, high color fastness, and good moisture absorption and breathability performance

Specification: 1.56dtex×38mm

Applied technology: Blending and single-batch spinning are applicable. The processingparameters are consistent with the normal product process. And the addition proportion is adjusted according to the demanding effect

Application field: Sportswear,outdoor clothes, casual wear, underwear

- **Brand: seeker**
- **Enterprise: Chuzhou Xingbang Polymer Color Fiber Co., Ltd.**

“细心呵护，安心陪伴”。以多功能健康为源头，打造抑菌、负离子、远红外、防紫外、抗静电等优异功能，为消费者构筑健康护盾。

"Attentive care and reassuring company". With multi-functional health as the purpose, the product possesses excellent functions such as anti-bacterial, anion, far-infrared, anti-static, etc., so as to build a health shield for consumers.

健康防护纤维

HEALTH PROTECTION FIBER

稀土抗紫外抑菌再生纤维素纤维

特点： 具有较强的抑菌、防紫外效果。对大肠杆菌、金黄色葡萄球菌、白色念珠菌的抑菌率超过 90%，较好的染色效果

规格： 1.67dtex×38mm

应用技术： 纺纱：可以和棉、普通粘胶、莫代尔、毛等进行混纺，使用配比在 30% 以上，机织、针织均可；
染整：建议使用活性染料，染色温度和热定型温度参考普通再生纤维素纤维

应用领域： 袜子、内衣、婴童服装、家纺、运动服等

- 品牌：镧鹰 /LARAYON
- 申报企业：山东银鹰化纤有限公司

矿物粉体改性聚酯纤维

特点： 对大肠杆菌、金黄色葡萄菌、白色念珠菌、肺炎杆菌的抑菌效果显著。可以与防螨、防霉、负离子、远红外等技术叠加，赋予产品多重特性

规格： 1.33~1.55dtex×38mm、3.33~6.67dtex×60mm
22.22~111.11dtex/24~72F

应用技术： 建议混纺占比为 25% 以上，下游产品的染色 pH 范围 5.5~9.5，不能在强酸强碱体系中进行染色及后整理

应用领域： 毛巾、床品、浴巾、婴儿睡袋、牛仔裤等

- 品牌：无菌时代 /X-GERM
- 申报企业：无菌时代复合新材料（苏州）有限公司

Anti-ultraviolet and antibacterial regenerated cellulose fiberwith rare-earth

Feature: It has strong antibacterial and anti-ultraviolet effects that the bacteriostasis rate of escherichia coli, staphylococcus aureus and candida albicans is more than 90%. And it has good dyeing effect

Specification: 1.67dtex×38mm

Applied technology: It can be blended with cotton, ordinary viscose, modal, wool, etc., with a ratio of more than 30%, and can be woven or knitted; It is recommended to use reactive dyes, and the dyeing temperature and heat setting temperature refer to ordinary regenerated cellulose fiber

Application field: Socks,underwear, layette, home textiles, sportswear, etc.

- **Brand: LARAYON**
- **Enterprise: Shandong Silver Eagle Chemical Fiber Co.,Ltd.**

Mineral-powder-modified polyester fiber

Feature: It has significant antibacterial effect on escherichia coli, staphylococcus aureus, candida albicans and pneumobacillus. It can be combined with anti-mite, anti-mildew, anion, far-infrared to endow the product with multiple characteristics

Specification: 1.33~1.55dtex×38mm,
3.33~6.67dtex×60mm
22.22~111.11dtex/24~72F

Applied technology: It is suggested that the blending proportion is more than 25%, and the dyeing pH range of downstream product 5.5~9.5. Please do not carry out dyeing and finishing in strong acid and alkali system

Application field: Towel, bedding, bath towel, baby sleeping bag, jeans, etc.

- **Brand: X-GERM**
- **Enterprise: X-GERM (Suzhou) Co., Ltd.**

“舒适贴心，畅享生活”。舒感纤维强化人体亲和与舒适健康的要求，吸湿排汗、弹性十足、亲肤柔顺，让消费者自由感受舒适生活。

"Enjoy your comfortable and intimate life". The comfortable fiber strengthens the requirements of human affinity and comfort and health, with the features of moisture absorption and sweat releasing, full elasticity and skin-friendly. It can comprehensively improve comfort and let consumers enjoy comfortable life.

舒感纤维 COMFORTABLE FIBER

改性 PBT 复合弹性纤维

特点： 吸色深，弹性恢复性好，具有锦纶的手感和良好的抗皱效果

规格： 81dtex/24F、132dtex/24F POY；
55dtex/24F、83dtex/24F FDY

应用技术： 用于针织和梭织，采用分散染料染色，染色温度 120°C，定型温度 160°C

应用领域： 主要在梭织领域用于羽绒服面料

- 品牌：鑫纶 /G3000
- 申报企业：江苏鑫博高分子材料有限公司

牛奶丝面料专用聚酯弹性纤维

特点： 弹性好、延展性好；卷曲收缩率大、蓬松、柔软舒直度和染色均匀性较高，贴身舒适度和亲肤性都很好

规格： 333dtex/288F DTY

应用技术： 上机时退绕张力调整均匀，大小差异较大的筒子及时间跨度长的筒子不要放在一起使用

应用领域： 保暖内衣、内衣内裤、卫衣、床上用品等

- 品牌：桐昆 /GOLDEN COCK
- 申报企业：桐昆集团股份有限公司

Modified PBT composite elastic fiber

Feature: Deep dyeing, good elasticity recovery, nylon-feel and good anti-wrinkle effect

Specification: 81dtex/24F, 132dtex/24F POY; 55dtex/24F, 83dtex/24F FDY

Applied technology: It can be used for knitting and tatting. It is dyed with disperse dyes, with the dyeing temperature of 120°C and theheat-setting temperature of 160°C

Application field: It is mainly used in the field of tatting for down jacket fabrics

- **Brand: Xinlun/G3000**
- **Enterprise: Jiangsu Xinbow Polymer Materials Company**

Polyester elastic fiber for milk silk fabric

Feature: Good elasticity and ductility; large crimp shrinkage, fluffy, soft, comfort high dyeing uniformity, close-fitting and skin-friendly

Specification: 333dtex/288F DTY

Applied technology: The unwinding tension shall be adjusted evenly during feeding. The packages with large size difference and long-time span shall not be used together

Application field: Thermal underwear, underwear, sweatshirt, bedding, etc.

- **Brand: GOLDEN COCK**
- **Enterprise: TongKun Group Co., Ltd**

乳木果添加改性再生纤维素纤维

特点： 柔软亲肤，手感柔滑；还具有抑菌、保湿的功能

规格： 1.3dtex×38mm

应用技术： 如果对布面白度要求高，采用加双氧水的煮漂一浴法工艺。采用活性染料进行染色，中性盐浴中缓慢接触染料，保持上染速率的温和平衡，避免色花和色斑现象

应用领域： 内衣、袜子、裤子、居家用品（手套）等

- 品牌：乳木果 /shea butter
- 申报企业：响水六棉纺织科技有限公司

羽毛蛋白改性再生纤维素纤维

特点： 手感细腻丝滑，含有丰富的游离氨基酸、多肽等极性基团，亲肤性良好，具有天然抑菌性

规格： 1.33dtex×38mm、1.67dtex×38mm

应用技术： 前处理工艺：1g/L 的去油剂进行前处理，温度控制在65℃以内，时间 30min

后处理工艺：常温溢流水洗 15min；80℃皂煮 30 min；常温溢流水洗 15min；60℃固色 30 min；45℃过柔 30min

应用领域： 床上用品、保暖内衣等

- 品牌：圣桑 ® 羽毛蛋白纤维 /ST-SUN Feather Protein
- 申报企业：宜宾惠美纤维新材料股份有限公司

Shea-butter-added modified regenerated cellulose fiber

Feature: Soft and skin-friendly, smooth, anti-bacteria and moisture-keeping
Specification: 1.3dtex×38mm
Applied technology: If there is a high requirement on the whiteness of cloth surface, the one batch sourcing and bleaching process with hydrogen peroxide shall be adopted. The reactive dyes are used for dyeing. Contact the dyes slowly in neutral salt bath, maintain a gentle and balanced dyeing rate. So as to avoid dyeing defect and color spots
Application field: Underwear, socks, pants, home supplies (gloves) etc.

- **Brand: shea butter**
- **Enterprise: Xiangshui Liumian Textile Technology Co., Ltd.**

Feather protein modified regenerated cellulose fiber

Feature: It feels fine and silky. With rich free amino acids, polypeptides and other polar groups, it has good skin affinity and natural antibacterial activity
Specification: 1.33dtex×38mm, 1.67dtex×38mm
Applied technology: Pretreatment process: 1g/L degreaser for pretreatment; temperature: ≤65°C; duration: 30 minutes Post-treatment process: overflow water washing at normal temperature for 15minutes; Soaping at 80°C for 30 minutes; overflow water washing at normal temperature for 15minutes; Fixation at 60°C for 30 minutes; Softening at 45°C for 30 minutes
Application field: Bedding, thermal underwear, etc.

- **Brand: ST-SUN Feather Protein**
- **Enterprise: Yibin Spark New Fiber Co., Ltd.**

“轻盈柔顺，柔软呵身”。轻柔纤维更加轻薄、柔韧，将轻盈的特质充分呈现。即节省了原材料的使用，又克服了重力对人体的约束，赋予服装柔软丝滑，清新飘逸的质感与风姿。

"Light, soft and skin-friendly". The soft fiber is more flexible and fully presents the lightness. It not only saves the use of raw materials, but also overcomes the constraints of gravity on human body, endowing clothes with a soft, silky, fresh and elegant texture and style.

轻柔纤维 SOFT FIBER

超细旦轻柔高密聚酯纤维

特点： 具有保暖、抗发霉虫蛀、质地轻盈、密度高防水好等优良特性。其抗弯刚度小，其织物表面光洁精致，手感柔软细腻且悬垂性极好

规格： 17dtex/36F POY

应用技术： 染整：洗涤温度 40°C，洗涤时间 30min，4g/L 合成洗涤剂 ECE，1g/L 的过硼酸钠；
后整理：可作水洗压光、涂层、复合等工艺

应用领域： 功能性运动服饰、内衣、泳衣、瑜伽服、家居服、滑雪服、高尔夫球运动衣、保暖衣物、针织衣物等

- 品牌：桐昆 /GOLDEN COCK
- 申报企业：桐乡市中洲化纤有限责任公司

超细旦聚酯纤维

特点： 超细旦、具有高悬垂性、透气性，抗弯刚度小的特点

规格： 58dtex/144F POY

应用技术： 可以采用 TMT、宏源、海源等 1000 型等加弹机，
建议牵伸：1.65~1.73；D/Y：1.63~1.66；上下热箱温度：185±10°C、165±10°C

应用领域： 防水透湿织物、羽绒服、冲锋衣等高档衣料

- 品牌：桐昆 /GOLDEN COCK
- 申报企业：浙江恒超化纤有限公司

Superfine denier high-dense Soft polyester fiber

Feature: It has excellent characteristics such as warm-keeping, anti-mildew, anti-moth-eaten, light texture, high density and waterproof. With small flexural rigidity, it has smooth and delicate fabric surface, soft and gentle hand feel, and good drapability

Specification: 17dtex/36F POY

Applied technology: Dyeing and finishing: Washing temperature 40°C; washing time 30 minutes, 4g/L synthetic detergent ECE, 1g/L sodium perborate

Finishing: can be used for water washing, press-polishing, coating, composite and other processes

Application field: Functional sportswear, underwear, swimwear, yoga clothes, leisure wear, ski suit, sportswear for golf, thermal clothes, knitwear, etc.

- **Brand: GOLDEN COCK**
- **Enterprise: Tongxiang Zhongzhou Chemical Fibre Co., Ltd.**

Superfine denier polyester fiber

Feature: It is featured by good drapability, permeability and small flexural rigidity

Specification: 58dtex/144F POY

Applied technology: TMT, Hongyuan, Haiyuan- 1000 or other type texturing machine can be used. The recommended drafting process parameters is 1.65~1.73; D/Y:1.63~1.66; Temperature of upper and lower hotboxes: 185±10°C, 165±10°C

Application field: Lining for high-grade bags and handbags for wg for high-grade bags and handbags for woomen

- **Brand:GOLDEN COCK**
- **Enterprise: Zhejiang Heng Chaos Fiber Co., Ltd.**

“形于自然，优于天然”。仿真纤维轻柔如云、蓬松至软，既有棉的柔软，毛的舒适，又有丝的柔滑。仿真纤维与天然纤维媲美，甚至超越天然纤维。

"Originated from nature, while superior to nature". The simulated fiber is soft and fluffy. It has the softness of cotton, the comfort of wool, and the smoothness of silk. The simulated fiber is comparable with natural fiber, and even surpasses natural fiber.

仿真纤维 SIMULATED FIBER

仿毛聚酯纤维

特点： 轻柔、蓬松、兼顾棉感和毛感

规格： 1.67dtex×38mm

应用技术： 可与其他化纤、天然纤维做比例混纺；支持常温阳离子染色

应用领域： 可纯纺，可与棉、麻、丝、毛、天丝、莫代尔等进行双组份或多组分任意比例混纺。采用分散染料高温高压常规染色工艺，叠加 ECDP 后可用常温阳离子染色，匹染温度建议 105-110°C，染深色保温时间适当延长。

- 品牌：FDEDF 仿毛纤维 /Ternura
- 申报企业：江苏垟恒复合材料有限公司

弹性仿棉双组份复合聚酯纤维

特点： 仿棉效果优异，优良的弹性和弹性回复率

规格： 75dtex/48F POY

应用技术： 预定型温度建议 150~170°C；染色温度建议 120~130°C，升温降温建议 0.5~1°C /min

应用领域： 休闲服、运动服

- 品牌：三联 /SANLIAN
- 申报企业：江苏三联新材料股份有限公司

Wool-like polyester fiber

Feature: Soft and fluffy, cotton-like and wool-like
Specification: 1.67dtex×38mm
Applied technology: It can be blended with other chemical fibers and natural fibers in proportion; the cationic dyeing under normal temperature is applicable
Application field: It can be spun solely, or blended with cotton, flax, silk, wool, Tencel, modal, etc. in any proportion of two or more components. The high-temperature and high-pressure conventional dyeing process with disperse dyes is used. And the cationic dyeing can be carried out under normal temperature after ECDP is combined. It is recommended that the piece dyeing temperature be 105-110°C, and the soaking time for dark dyeingbe appropriately extended.

- **Brand: FDEDF wool-like fiber/ Ternura**
- **Enterprise: Jiangsu Xingheng Composite Material Co., Ltd.**

Elastic cotton-like two-component composite polyester fiber

Feature: Excellent cotton-simulation effect, good elasticity and elastic recovery rate
Specification: 75dtex/48f POY
Applied technology: The pre-heat temperature is recommended to be 150~170°C; The dyeing temperature is recommended to be 120~130°C; And temperature rise and temperature drop is recommended to be 0.5~1°C/min
Application field: Casual wear, sportswear

- **Brand: SANLIAN**
- **Enterprise: Jiangsu Sanlian New Material Co., Ltd.**

仿羊羔绒专用三叶型截面聚酯纤维

特点： 具有更优良的折光性能，后道产品色泽更鲜亮。织物手感柔软、光泽优雅、吸湿性好，可与羊羔绒相媲美

规格： 大有光异形 770dtex/72F POY

应用技术： 后道加弹企业根据不同客户的需求，进行热定型等工艺参数优化，可织造出不同风格的纺织品

应用领域： 雪地靴内层的羊羔绒织物

- 品牌：桐昆 /GOLDEN COCK
- 申报企业：浙江恒通化纤有限公司

仿超绒面料专用聚酯纤维

特点： 单丝纤度细、其制作的面料具有极好的绒感，手感柔软，保暖性能优异

规格： 61dtex/72F FDY

应用技术： 可与其他纤维进行混纺；可适用于染色、印花、烫金等后整理工艺

应用领域： 鞋帽、玩具等

- 品牌：金鸡 /GOLDEN COCK
- 申报企业：浙江恒优化纤有限公司

Berber-fleece-like trilobal-section polyester fiber

Feature: It has better refraction performance, and the color of the latter product is brighter. The fabric has soft feel, elegant luster and good moisture absorption, which can be comparable with berber fleece

Specification: Better lustrous and profiled 770dtex/72F POY

Applied technology: The texturing enterprises can optimize the process parameters such as heat setting according to the needs of different customers and weave textiles of different styles

Application field: Berber fleece fabric inside snow boot

- **Brand: GOLDEN COCK**
- **Enterprise: ZHEJIANG HENGTONG CHEMICAL FIBRE CO., LTD.**

Super-soft-velvet-like polyester fiber

Feature: The monofilament has fine fineness. The fabric made of the fiber has excellent velvet feeling, with soft hand feeling and excellent thermal insulation property

Specification: 61dtex/72F FDY

Applied technology: It can be blended with other fibers; And it is suitable for dyeing, printing, gilding and other finishing processes

Application field: Shoes and hats, toys, etc.

- **Brand: GOLDEN COCK**
- **Enterprise: Zhejiang Heng You Fiber Co., Ltd.**

“安全友好，高效防护”。随着生活本质和健康理念的回归，抑菌纤维已经成为必然之选。纤维融入织物活性成分、神奇的石墨烯元素……抑菌纤维为消费者搭建健康纤之“盾”。

"Safe, friendly and highly-protective". With the return of the essence of life and the concept of health, anti-bacterial fiber has become an inevitable choice. Blended with active ingredients, the magic graphene, etc., the bacteriostatic fiber builds a "shield" of healthy fiber for consumers.

抑菌纤维

BACTERIOSTATIC FIBER

凉感抑菌聚酯纤维

特点： 集抗紫外线、抑菌、凉爽等功能于一体

规格： 55dtex/36F FDY

应用技术： 在织造和后整理时采用常温常压染色定型

应用领域： 休闲服

- 品牌：春盛 / CHUNSHENG
- 申报企业：苏州春盛环保纤维有限公司

海藻酸钠改性再生纤维素纤维

特点： 生物基原料、植物抑菌、吸湿导湿、优良可纺，织物手感柔软、可染性好、易上色、耐水洗

规格： 1.67dtex×38mm

应用技术： 可以和棉、麻、毛、涤等纤维混纺

应用领域： 休闲服、运动服、家居服、婴儿服、牛仔服、工装、贴身内衣、袜子、衬衣、床上用品、窗帘、地毯、填充物、毛巾、汽车内饰、医用纺织品、卫生纺织品、清洁用品、面膜、口罩

- 品牌：百草 /Byherb
- 申报企业：青岛百草新材料股份有限公司

Cooling bacteriostatic polyester fiber

Feature: It has such functions as anti-ultraviolet, anti-bacteria, and cooling, etc.
Specification: 55dtex/36F FDY
Applied technology: The dyeing and heat setting at normal temperature and pressure is used during weaving and finishing
Application field: Casual wear

- **Brand: CHUNSHENG**
- **Enterprise: Suzhou Chunsheng Environmental Protection Fiber Co., Ltd.**

Sodium alginate modified regenerated cellulose fiber

Feature: Bio-based raw materials, plant bacteriostasis, moisture absorption and moisture conductivity, excellent spinnability, soft feeling, good dyeability, easy-to-color, and washable
Specification: 1.67dtex×38mm
Applied technology: It can be blended with cotton, flax, wool, polyester and other fibers
Application field: Casual wear, sportswear, home wear, baby clothes, Jeans, Overalls, Lingerie, socks, shirt, bedding, curtain, carpet, filler, towel, automobile interior, medical textile, sanitary textile, cleaning supplies, facial mask, mask

- **Brand: Byherb**
- **Enterprise: Qingdao Baicao New Material Co., Ltd.**

高弹性抑菌氨纶

特点： 抑菌、弹性性能优异，耐水洗
规格： 20D、30D、40D、70D
应用技术：参考常规氨纶工艺生产
应用领域：内衣、袜子、瑜伽、泳衣、休闲服装等弹力产品

- 品牌：易拉 /Superelas
- 申报企业：上海康纶航天新材料科技股份有限公司

石墨烯改性聚酯混纤

特点： 石墨烯改性，织物制品抗静电、抑菌、远红外保健、接触凉感
规格： 83dtex/37F、138dtex/74F ITY
应用技术：织造：应用于针织和机织常规工艺；
染整：可按“平幅精炼 - 预缩 - 预定型 - 预缩 - 染色 - 定型”工序处理，织物染整配色时需注意纤维原色的影响
应用领域：内衣、口罩、地毯、家纺、汽车内饰、过滤布等

- 品牌：魔丝 /MOSI
- 申报企业：徐州斯尔克纤维科技股份有限公司

High-elastic anti-bacterial spandex

Feature: Anti-bacterial, elastic and washable

Specification: 20D, 30D, 40D, 70D

Applied technology: Refer to the conventional spandex

Application field: Underwear, socks, yoga clothes, swimwear, casual and other elastic products

- **Brand: Superelas**
- **Enterprise: Shanghai Kanglun Fiber Technology Co.,Ltd.**

Graphene modified polyester fiber blend

Feature: Graphene modified, anti-static, anti-bacterial, far-infrared health care, and cool feeling

Specification: 83dtex/37F, 138dtex/74F ITY

Applied technology: Weaving: Applicable to conventional knitting and weaving processes

Dyeing and finishing:The dyeing and finishing process can be handled according to the order of "open-width scouring – pre-shrinking - pre-setting - pre-shrinking - dyeing - setting". Pay attention to the influence of the primary color of the fiber during the dyeing and finishing process

Application field: Underwear, mask, carpet, home textile, automobile interior, filter cloth, etc.

- **Brand: MOSI**
- **Enterprise: Xuzhou Silk Fiber Share Technology Co., Ltd.**

“产业升级，科技驱动”。具有高性能和功能性的产业用纤维不断升级，不断技术革新，功能全面化，在家居和公共环境等场景为消费者提供全方位保护。

"Driven by industrial upgrading and science and technology ". The industrial fiber with high-performance and multiple-functions has been continuously upgraded and innovated. With comprehensive functions, the product can provide consumers with all-round protection in home and public environments.

产业用纤维 INDUSTRIAL FIBER

高耐候原液着色聚酯纤维

特点： 卓越的耐光照色牢度、使用寿命和色牢度大幅提升、原液着色加工技术的应用对环境更加友好

规格： 167.7dtex/48F FDY、333.3dtex/96F DTY

应用技术： 可以和丙纶、锦纶及再生涤纶长丝混织，无需再次染色，节能绿色环保

应用领域： 户外遮阳纺织品，建筑外遮阳纺织品、户外家具纺织品等

- 品牌：欣战江 /Xinzhanjiang
- 申报企业：江苏欣战江纤维科技股份有限公司

Dope dyed polyester fiber for high weatherability

Feature: The product has higher color fastness to light and longer service life. And the application of dope dyeing and processing technology is more environmentally-friendly

Specification: 167.7dtex/48F FDY, 333.3dtex/96F DTY

Applied technology: It can be blended with polypropylene fiber, polyamide fiber and recycled polyester filament yarns without re-dyeing, which is energy saving, green and environmentally-friendly

Application field: Outdoor sunshade textile, sunshade textile outside the building, outdoor furniture textile, etc.

- **Brand: Xinzhanjiang**
- **Enterprise: Jiangsu Xinzhanjiang Fiber Technology Co., Ltd.**

抗芯吸拒水聚酯工业丝

特点： 断裂强度高、模量大、化学稳定性优良，防水性能优良

规格： 555dtex/96F、1110dtex/192F、1400dtex/192F

应用技术： 染整要考虑油剂成分、油剂浓度对染色的影响

应用领域： 涂层布、泳池布、蓄水容器、户外广告灯箱布、遮阳布等

- 品牌：金汇特 /Kingsway
- 申报企业：浙江金汇特材料有限公司

抑菌防霉高强聚酯工业丝

特点： 抑菌率＞ 98%、防霉等级 0 级，在抑菌纤维领域具有更高的强度，在安全防护产品的减重轻量化方面优势突出

规格： 1100 ～ 1670dtex/192F、2200 ～ 3300dtex/384F

应用技术： 可按照高强聚酯工业丝的技术工艺加工成布、线、绳、带等。后整理工序中添加的胶液、助剂需要具有一定抗菌性，否则影响产品防霉抑菌性能

应用领域： 窗帘织物、幕布和餐桌垫等家用纺织品，医用带、布和防护服等医护用品，汽车内饰、帐蓬、广告布、遮阳布、土工布、绳带等工业用品

- 品牌：尤夫 /UNIFULL
- 申报企业：浙江尤夫高新纤维股份有限公司

Anti-wicking and water-repellency polyester industrial yarn

Feature: High breaking strength, large modulus, excellent chemical stability and waterproof performance

Specification: 555dtex/96F, 1110dtex/192F, 1400dtex/192F

Applied technology: The influence of the composition and concentration of oil agent should be considered in dyeing and finishing

Application field: Coated fabric, pool fabric, water container, outdoor advertising lamp box fabric, havelock, etc.

- **Brand: Kingsway**
- **Enterprise: Zhejiang Kingsway Materials Co., Ltd.**

High-strength, anti-bacterial and anti-mildew polyester industrial yarn

Feature: The bacteriostatic rate is more than 98%, and the anti-mildew grade is 0. It has higher strength compare to normal bacteriostatic fiber, and has outstanding advantages in weight reduction and light weight of safety protection products

Specification: 1100°C1670dtex/192F, 2200°C3300dtex/384F

Applied technology: It can be processed into cloth, thread, rope, belt, etc. according to the technical process of high-strength polyester industrial yarn. The glue and additives added in the finishing process need to have certain anti-bacterial properties, otherwise the anti-mildew and anti-bacterial properties of the product will be affected

Application field: Home textiles such as curtain fabric, screen and table mat; medical supplies such as medical belt, cloth and protective clothing; and industrial supplies such as automobile interior, tent, advertising cloth, havelock, geotechnical cloth, rope, etc.

- **Brand: UNIFULL**
- **Enterprise: Zhejiang UNIFULL Industrial Fiber Co., Ltd.**

中国纱线流行趋势 China Yarns Fashion Trends
2023/2024

蝶变·新生

BREAKTHROUGH · REBIRTH

中国纱线经纬全球，全球市场成就中国。共建全球纺织产业链命运共同体是中国纱线流行趋势的美好愿景。中国纱线必将在在苦练内功中重塑自我，破茧蝶变中探寻新生。

China yarns are spread all over the world, and the global market contributes to the prosperous development of China. The establishment of a destiny community of the global textile industry chain is a fine vision of the yarns fashion trend in China. China yarns are bound to remold itself in hard work and seek a new birth upon breakthroughs.

绿色生态纱线，旨在促进人与自然的和谐共生，将可持续发展理念融入到纱线的研发生产中，推动行业应用更多的可再生纺纱原料，推广更加先进的清洁生产工艺，向消费者传递生态纺织理念，建立健全绿色纺织品标准，逐步引导企业积极调整产品结构，助力绿色中国，践行碳中和。

Green ecological yarns aim to promote the harmonious coexistence between humans and nature, integrate the concept of sustainable development into yarn research and development and production, drive the application of more recycled spinning raw materials in the industry,popularize more advanced clean production technology, convey the concept of ecological textile to consumers, establish and improve green textile standards, and gradually guide enterprises to actively adjust the product structure, contribute to green China and practice carbon neutrality.

绿色生态

拥抱自然 • 乐享美好生活

GREEN ECOLOGY

EMBRACE NATURE WITH A GOOD LIFE

转杯纺再生古棉聚酯纤维混纺纱

Rotor spinning recycledold cotton polyester fiber blended yarn

原料及规格：转杯纺再生古棉 / 涤纶 80/20 10S-32S

关键词：再生

推荐理由：选用优质再生古棉、再生涤纶，纱线风格硬挺、粗犷绿色可持续、倡导低碳循环理念。

适用范围：服装

代表企业：河南锦胜纺织有限公司

Raw materials and specifications: Rotor spinning recycledold cotton/dacron 80/20 10S-32S

Key words: Recycled

Reasons for recommendation: It uses high-quality recycled old cotton and recycled dacron, and the yarn has a stiff, rough, green and sustainable style, and advocates the concept of a low-carbon cycle.

Scope of application: Clothing

Representing enterprises: Henan Jinsheng Textile Co., Ltd.

主要质量指标与性能

Main quality indicators and performance

品种 Variety			OEC21$^{S/}$1(古棉) OEC21$^{+/}$1 (Old Cotton)
条干 Evenness	条干管间变异系数 Coefficient of variation of evenness betweentubes	%	1.5
	条干变异系数 Coefficient of variation of evenness	%	13.09
	千米细节 (-50%) Thin places per 1,000 meters (-50%)	个 / 千米 pcs / kilometer	0
	千米粗节 (+50%) Thick places per 1,000 meters (+50%)	个 / 千米 pcs / kilometer	15
	千米棉结 (+200%) Cotton knot per 1,000 meters (+200%)	个 / 千米 pcs / kilometer	182
	千米棉结 (+280%) Cotton knot per 1,000 meters (+280%)	个 / 千米 pcs / kilometer	10
强力 Strength	单强变异系数 Coefficient of variation of single yarn breaking strength	%	7.5
	平均强力 Averagestrength	cN	281.1
	最高强力 Highest strength	cN	312.4
	最低强力 Lowest strength	cN	251.2
	单纱断裂强度 Single yarn breaking strength	cN/tex	10.1
	伸长率 Elongation	%	6.1
	伸长变异系数 Coefficient of variation ofelongation	%	6.9

京奕集团
JINGYI GROUP

海洋再生聚酯纤维纱线

Marine recycled polyester fiber yarn

原料及规格：100% 海洋再生涤纶 30S

关键词：海洋再生涤纶

推荐理由：近几年，海洋环境受到了严重污染，尤其是塑料污染已经成为全球性问题。根据联合国环境署在 2018 年世界环境日当天发布的报告，每年约有数百万吨塑料进入海洋，并对世界海洋生态系统造成严重破坏，此外，这些塑料还会通过微塑料、塑料碎片等形式出现在食物链中，影响动物和人类的健康。因此，海洋可再生材料的应用势在必行。海洋再生聚酯纤维纱线，原料来源于从海洋中回收的塑料瓶，采用 100% 海洋涤纶（1.33tex*38mm）生产，可针对不同应用场景定制针织、梭织（包括可免浆类产品）。

适用范围：服装、家纺、产业用纺织品

代表企业：吴江京奕特种纤维有限公司

品牌： JYT 京奕

Raw materials and specifications: 100% Marine recycleddacron 30S

Key words: Marine recycleddacron

Reasons for recommendation: In recent years, the marine environment has been seriously polluted, and especially the plastic pollution has become a global problem. According to the report released by the United Nations Environment Program on the World Environment Day in 2018, millions of tons of plastics enter the ocean every year, causing serious damage to the world marine ecosystem. In addition, the plastic will also appear in the food chain in the form of microplastics and plastic fragments, affecting the health of animals and human beings. Therefore, the application of marine recycled materials is imperative. The marine recycled polyester fiber yarn takes the plastic bottles recovered from the ocean as the raw material, and is produced with 100% marine dacron (1.33tex*38mm). It can be customized for knitting and weaving (including pulp-free products) according to different application scenarios.

Scope of application: Clothing, home textile, industrial fabric products

Representing enterprises: Wujiang Jingyi Special Fiber Co., Ltd.

主要质量指标与性能

Main quality indexes and performances

指标 Indexes / 项目 Items	原生 T30s Original T30s	海洋再生 T30s Marinerecycled T30s
条干 CV% Evenness CV%	12.2	12.7
CVb	1.02	1.18
Thin-50%	1	4
Thick+15%	5	8
Neps+200%	3	6
H	4.13	3.76
HCvb	3.25	2.24
平均强力 CN Averagestrength CN	560	514
单强 CV% Single yarn breaking strength CV%	6.8	7.2
最低强力 CN Lowest strength CN	469	402
断裂伸长率 % Elongation at break %	9.6	9.8
单强 CN/tex Single yarn breaking strength CN/tex	28.4	26.1

赛络紧密纺循环再利用再生纤维素纤维高支纱

林丝 Linz Yarn

Compact Siro-spun recycling recycled cellulose fiber high-count yarn

原料及规格：赛络紧密纺 FINEX 粘胶 60S

关键词：高品质 绿色环保

推荐理由：在已臻成熟的种植林生产体系外，纤生代 FINEX 纤维是赛得利自主研发的，以废旧纺织品为原材料生产的可循环再生纤维，其废旧纺织品含量达到 20%，再生溶解浆的碳排放量不到传统溶解木浆碳排放量的 10%，可应用于全新的植物基服装以及无纺用品，引领时尚行业前所未有的绿色变革。纤生代纤维性能优越，让循环技术在纺织领域广泛使用。

适用范围：服装、家纺、产业用等

代表企业：林茨 (南京) 粘胶丝线有限公司

品牌：纤生代

Raw materials and specifications: Compact Siro-spun spinning FINEX viscose 60S

Key words: High-quality, green, environmentally-friendly

Reasons for recommendation: In addition to the mature planting forest production system, the FINEX fiber is independently developed by Sateri. The recycling recycled fiber produced with waste textiles as raw materials has a waste textile content of 20%, and the carbon emission of recycled dissolved pulp is less than 10% of that of traditional dissolved wood pulp. It can be applied to brand-new plant-based clothing and non-woven products, leading to an unprecedented green change in the fashion industry. The excellent performance of FINEX fiber realizes the wide use of recycling technology in the textile field.

Scope of application: Clothing, home textile, industrial use, etc.

Representing enterprises: Linz (Nanjing) Viscose Yarn Co., Ltd.

Brand: Finex

主要质量指标与性能

Main quality indexes and performances

产品名称 Product Name	FINEX 紧密赛络纺纱线 60 支 FINEX compact Siro-spun yarn 60s
纱线条干 CV Yarn evenness CV	12.42
纱线毛羽 Yarn hairiness	2.66
纱线断裂比强度 Breaking ratio strength of yarn	16.94cN/tex
纱线断裂伸长 Elongation at break of yarn	11.9%

赛络紧密纺亚麻再生纤维素纤维混纺纱

Compact Siro-spun flax recycled cellulose fiber blended yarn

原料及规格：亚麻 / 环保粘胶 55/45 15S

关键词：抑菌 防静电 易上色

推荐理由：该产品使用欧洲亚麻落麻，经过物理开松，适用于棉纺设备生产，细纱采用赛络纺工艺提高纱线强力、降低强力不匀和粗细节。用该纱线织造的面料兼具两种纤维的优点，具有抑菌、吸湿排汗、防静电、上色绚丽多彩、织物悬垂性好、透气飘逸、手感舒适等特点。

适用范围：高档服装面料、家纺家居、针织、餐厨用品

代表企业：河南平棉纺织集团股份有限公司

Raw materials and specifications: Flax/ environmentally-friendly viscose 55/45 15S

Key words: Bacteriostatic, antistatic, easy coloring

Reasons for recommendation: This product uses European flaxnoil and is suitable for cotton spinning equipment production after physical opening. The Siro-spun process is used to improve spun yarn strength and reduce uneven strength and thin/thickplaces. The fabric woven with this yarn has the advantages of both fibers, and has antibacterial, moisture-wicking, anti-static, and colorful characteristics with good fabric drapability, breathability, and comfortable hand feeling.

Scope of application: High-grade clothing fabrics, home textiles, knitting, and kitchenware.

Representing enterprises: Henan Pingmian Textile Group Co., Ltd.

主要质量指标与性能

Main quality indexes and performances

产品名称及规格 Product name and specification	赛络纺 亚麻 / 兰精环保 55/45 15S Siro-spunflax/Lenzing environmental protection 55/45 15S		
检验项目 Test Items	单位 Unit	标准技术要求 Standard technical requirements	实测结果 Results
百米重量偏差 Weight deviation per 100 meters	%	±4.0	2.1
百米重量变异系数（CV） Coefficient of variation (CV) per 100 meters weight	%	⩽ 3.5	1.83
单纱断裂强度 Single yarn breaking strength	CN/tex	⩾ 6.0	8.5
单纱强力变异系数（CV） Coefficient of variation (CV) of single yarn strength	%	⩽ 18.0	8.0
条干均匀度变异系数（CV） Coefficient of variation (CV) of evenness	%	⩽ 29.0	24.8
千米细节（-50%） Thin places per 1,000 meters (-50%)	个 /km Pc /km	/	355
千米粗节（+50%） Thick places per 1,000 meters (+50%)	个 /km Pc /km	/	2320
千米棉结（+200%） Cotton knot per 1,000 meters (+200%)	个 /km Pc /km	/	2842
纤维含量 Fiber content	%	麻 55±1 Flax 55±1	麻 55.7% Flax 55.7%

赛络紧密纺再生纤维素纤维棉混纺本色纱

Compact Siro-spun recycled cellulose fibercotton blended gray yarn

原料及规格：赛络紧密纺 环保粘胶 / 棉 60/40 32S

关键词：绿色环保 透气 柔软

推荐理由：该产品将博拉环保粘胶纤维和棉纤维按照一定的比例进行混纺，不仅保持了粘胶纤维柔软透气和顺滑的特点，同时兼具棉纤维吸湿性能好、透气性强、手感柔软、性能稳定的特点，两种纤维的特性优势实现互补，适用于制织各种中高档服装面料及家纺产品。

适用范围：服装、家纺

代表企业：南通华强布业有限公司

品牌：倍优特

产品获得专利：一种新型梳棉机双卷喂入装置、一种具有跳管降速功能的粗纱机、一种托盘式全自动络筒机空纱管准确落入容器装置


商标注册证

Beauty

Raw materials and specifications: Compact Siro-spun environmentally-friendly viscose/cotton 60/40 32S gray yarn

Key words: Green, environmentally-friendly, air permeable, soft

Reasons for recommendation: This product blends Birla environmentally-friendly viscose fiber and cotton fiber according to a certain proportion, which not only keeps the soft, breathable and smooth characteristics of viscose fiber, but also has the cotton fiber's characteristics of good moisture absorption, strong permeability, soft hand feeling and stable performance. The characteristics and advantages of the two fibers complement each other, and it is suitable for weaving various middle and high-grade clothing fabrics and home textile products.

Scope of application: Clothing, home textile

Representing enterprises:Nantong Huaqiang Cloth Industry Co., Ltd

Brand: Beauty

The patent of the product: A new double-roll feeding device for the carding machine, a roving frame with the function of tube jumping and speed reduction, and a tray-type device for the empty yarn tube of the full-automatic winding machine accurately dropping into containers

主要质量指标与性能

Main quality indexes and performances

序号 SN	质量指标 Quality Indicator	单位 Unit	标准 Standard	实测值 Result
1	纤维含量 Fiber content	%	±1.5	环保粘胶 60.4/ 棉 39.6 environmentally-friendly viscose 60.4/cotton 39.6
2	单纱断裂强力变异系数 CV Variation coefficient of breaking strength of single yarn CV	%	⩽ 6	5.5
3	断裂伸长率变异系数 CV Variation coefficient of elongation at break CV	%	⩽ 7.2	6.4
4	百米重量变异系数 CV Coefficient of variation (CV) per 100 meters weight	%	⩽ 1.5	1
5	单纱断裂强度 Single yarn breaking strength	cN/tex	⩾ 13.2	14.4
6	百米重量偏差 Weight deviation per 100 meters	%	±1.5	+0.4
7	线密度 Linear density	Tex/s	/	18.5/31.8
8	百米重量 Weight per 100 meters	g	/	1.644
9	条干均匀度变异系数 CV Coefficient of variation of evenness CV	%	⩽ 10.1	9.8
10	棉结（+ 200%） Cotton knot (+200%)	粒 /km pcs/km	⩽ 15	10

BROS®

降耗节水牛仔色纺纱

Consumption-reducing and water-saving denim color-spun yarn

原料及规格：ECOINDIGO 牛仔纱线

关键词：环保 高色牢度 超柔

推荐理由：全新环保产品 ECOINDIGO™ 是一款颠覆传统牛仔行业的色纺纱线，可以进行牛仔工艺的传统轻洗水从而得到马骝、怀旧等效果。更为重要的是，其牢度高，洗水脱色少，废水更容易处理，为环境可持续发展带来全新的方向。

适用范围：服装、家纺

代表企业：百隆东方股份有限公司

品牌：ECOINDIGO™

Raw materials and specifications: ECOINDIGO denim yarn

Key words: Environment-friendly, high color fastness, super soft.

Reasons for recommendation: ECOINDIGO™, a brand-new environment-friendly product, is a color-spun yarn that subverts the traditional denim industry. It can be washed lightly with the traditional denim process to get the effect of maliu and nostalgia. More importantly, it has high fastness, light decoloration of washing, and easier treatment of wastewater, which brings a new direction for environmentally sustainable development.

Scope of application: Clothing, home textile

Representing enterprises: BROS Eastern Co., Ltd.

Brand: ECOINDIGO™

主要质量指标与性能

Main quality indexes and performances

产品 Product			100% 棉的针织面料，颜色为靛蓝 50A#(普洗后样），20S/1 100% cotton knitting fabric, with the color of indigo, 50A# (after ordinary washing), 20S/1		
指标 Indicators			执行标准 Executive standard	等级 Grade	
耐摩擦色牢度 Color fastness to rubbing	干 Dry		GB/T 3920-2008	4	
	湿 Wet			3	
耐光色牢度 Color fastness to light	晒到 4 级 Suntanned to Grade 4		GB/T 8427-2008, 方法 3 氙弧灯 GB/T 8427-2008, Method 3 xenon arc lamp	好于 4 Better than 4	
耐洗色牢度 Color fastness to washing	颜色变化 Color Change		GB/T 3921-2008, Test method A (1), 40°C, 30 分钟机械洗涤，用 0.5% 的皂片，浴比为 50：1 GB/T 3921-2008, Test Method A (1), 40°C, mechanical washing for 30 minutes, with 0.5% soap flake, and liquor ratio of 50:1	4-5	
	沾色 Staining	棉 Cotton		4-5	
		羊毛 Wool		4-5	
耐汗渍色牢度 Color fastness to perspiration	颜色变化 Colour Change		GB/T 3922-2013	酸 4-5 Acid 4-5	碱 4-5 Alkaline 4-5
	沾色 Staining	棉 Cotton		酸 4-5 Acid 4-5	碱 4-5 Alkaline 4-5
		羊毛 Wool		酸 4-5 Acid 4-5	碱 4-5 Alkaline 4-5
耐水色牢度 Color fastness to water	颜色变化 Colour Change		GB/T 5713-2013	4-5	
	沾色 Staining	棉 Cotton		4-5	
		羊毛 Wool		4-5	

聚乳酸混纺色纺纱

Polylactic acid blended color-spun yarn

原料及规格：赛络紧密纺 粘胶 / 聚乳酸 / 精梳棉 50/30/20 40S

关键词：可降解 时尚

推荐理由：通过对纺纱工序进行重构、对梳理设备进行改造，纤维混合均匀度得到大幅提升，进一步降低了纤维损耗，优化配置各工序工艺，实现了聚乳酸色纺纱线的生产，产品更天然、环保、可降解，同时具有一定抑菌效果。

适用范围：服装、家纺、产业用

代表企业：沛县新丝路纺织有限公司

品牌：新起点色纺

Raw materials and specifications: Compact Siro-spun viscose/polylactic acid/combed cotton 50/30/20 40S

Key words: Degradable, fashionable

Reasons for recommendation: By reconstructing the spinning process and reforming the carding equipment, the fiber mixing uniformity is greatly improved, the fiber loss is further reduced, and the technology of each process is optimized to realize the production of polylactic acid blended color-spun yarn. Therefore, the product is more natural, environmentally friendly and degradable, and has a certain antibacterial effect.

Scope of application: Clothing, home textile, and industrial use

Representing enterprises: Peixian Xinsilu Textile Co., Ltd.

Brand: Xinqidian color spinning

生物基尼龙混纺色纺纱

Bio-based nylon blended color-spun yarn

原料及规格：棉 / 生物基尼龙 / 莱赛尔 40/30/30 16S-50S

关键词：低温易染

推荐理由：采用生物基尼龙纤维，可实现活性染料深染，低温易染更节能环保。采用赛络紧密纺纺纱方式，在保证织物物理机械性能的同时可确保织物优良的手感，可适用于各种结构的针织和机织面料，面料产品手感轻盈柔软、亲肤舒适、悬垂性好。

适用范围：针织内衣、家纺、服装等

代表企业：汶上如意技术纺织有限公司

品牌：天容牌

Raw materials and specifications: Cotton/bio-based nylon/Lyocell 40/30/30 16S-50S

Key words: Low temperature, easy dyeing

Reasons for recommendation: It uses bio-based nylon fiber, which can realize deep dyeing with reactive dyes, and become more energy-saving and environmentally friendly with the function of low temperature and easy dyeing. Compact Siro-spun spinning is adopted to ensure the physical and mechanical properties of the fabric and the excellent hand feelings of the fabric, which is suitable for knitted and woven fabrics with various structures. The fabric product has light and soft hand feelings, and is comfortable and skin-friendly with good drapability.

Scope of application: Knitted underwear,home textiles, clothing, etc.

Representing enterprises: Wenshang Ruyi Technology Textile Co., Ltd.

Brand: Tianrong

主要质量指标与性能

Main quality indexes and performances

项目 Item	线密度变异系数 Variation Coefficient of linear density	单纱断裂强力变异数 % ≦ Variation coefficient of breaking strength of single yarn	单纱断裂强度 cn/tex ≧ Single yarn breaking strength	耐皂洗色牢度（级） Color fastness to soaping (level)		耐汗渍色牢度（级） Color fastness to perspiration (level)		耐干摩擦色牢度（级） Color fastness to dry friction (level)
				变色 Discoloring	沾色 Staining	变色 Discoloring	沾色 Staining	
FZ/T 12016-2014 优等品指标 FZ/T 12016-2014 superior product indicator	3.0	13.0	13.0	≧ 3-4	≧ 3	≧ 3-4	≧ 3	≧ 3-4
本产品 The product	1.5	7.0	15.0	4-5	4-5	4-5	4-5	4-5
常规产品 Conventional product	1.5	7.8	14.9	4	4	4	4	4

功能赋予纱线，利用功能性纤维或特殊工艺赋予纱线全新功能，涵盖抑菌防螨、运动保健、阻燃隔热、超柔高弹等方面，赋予了纱线产品更多的环境适应性，改变了纺织服装服用效果的固有实现方法。当前，功能赋予类纱线已渗透到国民经济各个领域，性能已不仅仅局限于单一功能，而是趋向多功能、高功能、复合功能的方向发展。

Function energizes the yarn. With brand-new functions by using functional fibers or special processes, the yarn can realize antibacterial and mite-proof, sports health care, flame retardant and heat insulation, super flexibility and high elasticity, etc., which endows the yarn products with more environmental adaptability and changes the inherent realization method of the textile and clothing effect. At present, the application field of functional yarn has penetrated into all fields of the national economy, and its performance is not limited to a single function but tends to be multi-functional, high-functional and compound-functional.

功能赋予

破除枷锁 • 探寻设计至美

FUNCTION CREATION

BREAK SHACKLES TO EXPLORE THE BEAUTY OF DESIGN

利泰醒狮
Litai Xingshi

纯棉抑菌抗病毒纱线

Pure cotton antibacterial and antiviral yarn

原料及规格：100% 改性抑菌棉 20S-60S

关键词：抑菌 舒适

推荐理由：该产品从富含锌元素的海洋生物中提取有机锌，通过大分子接枝改性技术反应到含有大量 OH- 羟基、NH3- 胺基等基团的棉纤维分子链上，然后生产出具有安全零溶出和耐洗性的抑菌抗病毒天然健康的棉纤维。

适用范围：内衣、家纺、工装服饰、休闲服饰、运动服饰、医卫及公共场合纺织品

代表企业：利泰醒狮（太仓）控股有限公司

品牌：利泰醒狮

Raw materials and specifications: 100%Modified bacteriostatic cotton 20S-60S

Key words: Antibacterial, comfortable

Reasons for recommendation: The product extracts organic zinc from marine organisms rich in zinc, and reacts to the molecular chain of cotton fiber containing a large number of OH-hydroxyl and NH3-amine groups through macromolecular grafting modification technology to produce antibacterial and antiviral natural and healthy cotton fiber with safe zero dissolution and washing resistance.

Scope of application: Underwear, home textiles, work clothes, casual clothes, sportswear, medical and health care and public textiles.

Representing enterprises: Litai Xingshi (Taicang) Holding Co., Ltd.

Brand: Litai Xingshi

主要质量指标与性能

Main quality indexes and performances

产品名称 Product Name	纯棉抑菌抗病毒纱线 (20% 锌棉) ——纤维成分 100% 棉 Pure cotton antibacterial and antiviral yarn (20%zinc cotton) ——Fiber content 100% cotton	
项目 Item	要求抑菌率 Requirement Inhibition	抑菌率 Inhibition
金黄色葡萄球菌 Staphylococcus aureus	⩾ 80%	97.33%
大肠杆菌 Colon bacillus	⩾ 70%	91.35%
白色念珠菌 Candida albicans	⩾ 60%	85.87%

微纳米镶嵌纺功能性纱线

魏桥纺織
WEIQIAO TEXTILE

Micro-nano inlaying spinning functional yarn

原料及规格：转杯纺 3S-32S；环锭纺 21S-140S

关键词：抑菌

推荐理由：微纳米镶嵌纺功能性纱线，通过纺纱技术创新实现了功能性微纳米纤维与普通棉纤维跨尺度附着镶嵌成纱，该产品保持了棉纤维的亲肤舒适，兼具优异持久的功能性（抑菌类产品水洗 50 次，抑菌率＞ 99%）。该生产技术成熟、生产方式灵活方便、纱线质量稳定，并且可实现各种不同功能性微纳米纤维产品的生产。

适用范围：针织、家纺、服装

代表企业：魏桥纺织股份有限公司

品牌：魏桥牌

Raw materials and specifications: Rotor spinning 3S-32S; Ring spinning 21S-140S

Key words: Bacteriostasis

Reasons for recommendation: Through the innovation of spinning technology, micro-nano inlaying spinning functional yarn realizes that the functional micro-nano fiber and ordinary cotton fiber are attached and inlaid across the scale to form yarn. This product keeps the skin-friendly and comfortable characteristics of cotton fiber, and has excellent and lasting functionality (the antibacterial rate is more than 99% after the antibacterial products are washed with water 50 times). The production technology is mature, the production mode is flexible and convenient, the yarn quality is stable, and various functional micro-nano fiber products can be produced.

Scope of application: Knitting, home textiles, and clothing

Representing enterprises: Weiqiao Textile Co., Ltd.

Brand: Weiqiao

抑菌防螨棉纱线

Bacteriostatic and mite-proof cotton yarn

原料及规格：悦聚纺 精梳棉 60S

关键词：抑菌 防螨

推荐理由：悦聚纺技术是江苏悦达棉纺有限公司自主开发的一种新型纺纱技术，将新型纺丝与传统纺纱技术完美结合，在纺纱过程中添加特殊的功能性材料，与棉或其他纤维的均匀复合，对主体纤维性能无任何影响。采用悦聚纺纱线织成的面料，不仅省去了传统功能性助剂后整理的步骤，生产过程无污染废液产生，节能环保，且比采用传统功能性纤维纺纱节约原料成本。产品经第三方检测，有着优异的抑菌、防螨、消臭等性能，多次反复洗涤，不影响织物的手感，且仍具有符合国家标准的功能效果。

适用范围：服装、家纺、产业用纺织品

代表企业：江苏悦达棉纺有限公司

品牌：悦聚纺

Raw materials and specifications: Yueju-spinning combed cotton 60S

Key words: Bacteriostatic, mite-proof

Reasons for recommendation: Yueju-spinning technology is a new spinning technology independently developed by the Company. It combines the new spinning technology with the traditional spinning technology perfectly, and adds special functional materials in the spinning process, which is then evenly compounded with cotton or other fibers, without any influence on the performance of the main fiber. The fabric woven by Yueju-spinning yarn not only saves the post-finishing steps of traditional functional additives, but also saves energy and ensures environmental protection without polluted waste effluent during production, which realizes the saving of raw material costs compared with traditional functional fiber spinning. Tested by a third party, the product has excellent antibacterial, mite-proof, deodorizing and other properties. After repeated washing many times, the hand feelings of the fabric are not affected, and it still has a functional effect in line with national standards.

Scope of application: Clothing, home textile, industrial textiles

Representing enterprises: Jiangsu YDTEX Group Co., Ltd.

Brand: Yueju-spinning

赛络紧密纺汉麻棉混纺纱

际华三五零九纺织有限公司
JIHUA 3509 TEXTILE CO.,LTD.

Compact Siro-spun China-hemp cotton blended yarn

原料及规格：赛络紧密纺 汉麻 / 棉 55/45 32S

关键词：透气 抑菌 防紫外线

推荐理由：汉麻纤维的吸湿性符合人体皮肤生理需求，采用汉麻纤维制成的服装具有吸湿、透气、舒爽、散热、防霉、抑菌、抗辐射、防紫外线等多种功能，是一种新型、健康、时尚、绿色环保的生态纺织纤维。因汉麻纤维短绒高，断裂伸长小，长度差异大，汉麻纤维含量越高，其生产难度越大。本纱线产品汉麻比例高达 55%，品质优良，可满足客户需求。

适用范围：服装、产业用纺织品

代表企业：际华三五零九纺织有限公司

品牌：九连环

产品获得专利：一种新型混纺纱及其生产方法和应用 专利号：2020113715525

Raw materials and specifications: Compact Siro-spun China-hemp/Cotton 55/45 32S

Key words: Air permeable, bacteriostatic, UV-proof

Reasons for recommendation: The moisture absorption of China-hemp fiber meets the physiological needs of human skin. Clothing made of China-hemp fiber has many functions, such as moisture wicking, air permeability, comfort, heat dissipation, mildew resistance, bacteriostasis, radiation resistance, and ultraviolet protection. It is a new, healthy, fashionable and environmentally-friendly textile fiber. Because China-hemp fiber has high flocks, small elongation at break and large length difference, the higher the content of China-hemp fiber can result in more difficult production. The yarn product has a China-hemp ratio as high as 55%, with excellent quality, which can meet the needs of customers.

Scope of application: Clothing, industrial textiles

Representing enterprises: Jihua 3509 Textile Co., Ltd.

Brand: Jiulianhuang

The patent of the product: A New Blended Yarn and the Production Method and Application Patent No.: 2020113715525

再生胶原蛋白纤维混纺纱

Recycled collagen fiber blended yarn

原料及规格：赛络紧密纺 莫代尔 / 再生胶原蛋白 90/10 80S

关键词：舒适 健康

推荐理由：再生胶原蛋白纤维具有高保湿和吸放湿性；富含氨基酸，具有亲肤护肤、延缓衰老、美容抗皱的功效;有良好的抑菌消臭功效；可生物降解，健康绿色环保。莫代尔纤维是一种高湿模量纤维，它不仅具有天然纤维的吸湿性，还具有合成纤维的强伸性，废弃物可自然降解，具有良好的环保性能。两种纤维混纺，所制备面料舒适、功能性强、绿色健康环保。

适用范围：童装、内衣、家纺

代表企业：无锡一棉纺织集团有限公司

Raw materials and specifications: Compact Siro-spun Modal/recycled collagen 90/10 80S

Key words: Comfortable, healthy

Reasons for recommendation: Recycled collagen fiber has high moisture retention and moisture absorption and desorption; it is rich in amino acids, and has skin-friendly, skin-care, aging delay, beautifying and anti-wrinkle effects; it has good antibacterial and deodorizing effects; it is biodegradable, healthy, green and environmentally-friendly. Modal fiber is a kind of high-wet modulus fiber, which not only has the moisture absorption of natural fiber, but also has the strong elongation of synthetic fiber. Its waste can be naturally degraded and has good environmental protection performance. By blending the two fibers, the fabric made is comfortable, functional, green, healthy and environment-friendly.

Scope of application: Children's wear, underwear, home textiles

Representing enterprises: Wuxi No.1 Cotton Mill Textile Group Co., Ltd.

牛油果纤维混纺纱线

Avocado fiber blended yarn

原料及规格：腈纶 / 精梳棉 / 兰精莫代尔 / 牛油果纤维 40/30/15/15 60S

关键词：保暖 亲肤 抑菌

推荐理由：该产品结合牛油果纤维特性研制开发，牛油果纤维是将牛油果中的油酸、棕榈油酸进行提炼，以适量的重量比例添加到粘胶纤维纺丝液中制备而成的一种新型植物源粘胶纤维，具有保湿亲肤、抑菌等功能。后续通过与腈纶、精梳棉、莫代尔混纺，实现多组分优势互补，莫代尔纤维能够对牛油果纤维起到很好的改善作用，进而充分克服了现有技术中牛油果纤维面料价格高昂和洗涤护理麻烦的缺点。该纱线所制备的针织面料具有洗涤护理方便、手感蓬松软糯、保暖性优异、吸湿透气、贴肤穿着舒适的优点，且具有抑菌护肤保健的功效，适合开发贴身穿着类服装产品。

适用范围：服装、家纺

代表企业：德州彩诗禾纺织有限公司

品牌：

Raw materials and specifications: Acrylic/combed cotton/LenzingModal/avocado fiber 40/30/15/15 60S

Key words: Warm, skin-friendly, bacteriostatic

Reasons for recommendation: This product is developed based on the characteristics of avocado fiber. Avocado fiber is a new type of plant-derived viscose fiber that is prepared by extracting oleic acid and palmitoleic acid from avocado and adding them to viscose fiber spinning solution in a proper weight ratio. It has moisture-keeping, skin-friendly and bacteriostatic functions.Then, through blending with acrylic fiber, combed cotton and Modal, the complementary advantages of multiple components can be realized, and Modal fiber can play a very good role in improving avocado fiber, thus fully overcoming the shortcomings of high price and difficult washing and care of avocado fiber fabrics in the prior art. The knitted fabric made of this yarn has the advantages of convenient washing and care, fluffy and soft hand feelings, excellent warmth retention, moisture absorption and air permeability, and comfortable wearing on the skin, and has the effects of bacteriostasis, skin care and health care, and is suitable for developing close-fitting clothing products.

Scope of application: Clothing, home textile

Representing enterprises: Dezhou Caishihe Textile Co., Ltd.

主要质量指标与性能

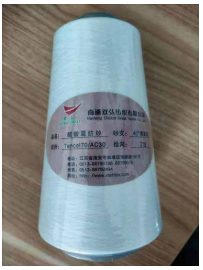
Main quality indexes and performances

产品名称 Product Name	腈纶 / 精梳棉 / 兰精莫代尔 / 牛油果纤维 40/30/15/15 60S Acrylic/combed cotton/LenzingModal/avocado fiber 40/30/15/15 60S	
检验项目 Test Items	单位 Unit	检验结果 Test result
单纱强力 Single yarn strength	CN	146
断裂强度 Breaking strength	CN/tex	14.9
捻度 Degree of twist		107
捻系数 Twist coefficient		334
条干均匀度 Evenness	%	15.6
-50% 细节 -50% Thin places	个 /km Pc/km	3
+50% 粗节 +50% Thick places	个 /km Pc/km	12
+200% 棉结 +200% Cotton knot	个 /km Pc/km	98
3mm 毛羽 3mm Hairiness	根 /m Piece/m	2.2

双 弘
DOUBLE GREAT

莫代尔二醋酸纤维混纺纱

Modal diacetate fiber blended yarn



原料及规格：天丝 ™ 莫代尔 / 二醋酸 70/30 32S-40S

关键词：快干 舒适

推荐理由：该产品采用美国伊士曼二醋酸纤维，结合赛络紧密纺、细纱集体落纱技术，开发生产了天丝二醋酸混纺高品质纱线，生产出的纱线手感柔软、毛羽少、抗起毛起球好、条干均匀度好。应用其制成的纺织品，织物纺织品布面光洁，亲肤友好，具有快干及凉爽触感的特质，可令肌肤时刻清凉干爽，其更为绿色环保。

适用范围：服装、家纺

代表企业：南通双弘纺织有限公司

品牌：双弘

Raw materials and specifications: Tencel/diacetate 70/30 32S-40S

Key words: Quick-drying, comfortable

Reasons for recommendation: This product uses American Eastman diacetate fiber, combined with compact Siro-spun spinning and spun yarn collective doffing technology, to develop and produce high-quality Tencel diacetate blended yarn. The produced yarn has soft hand feelings, less hairiness, good pilling resistance and good evenness. The textiles and fabric textiles made of it are smooth and clean, skin-friendly, quick-drying and cool touching, which can always make the skin cool and dry, and it is greener and more environmentally friendly.

Scope of application: Clothing, home textile

Representing enterprises: Nantong Double Great Textile Co., Ltd.

Brand: Double Great

主要质量指标与性能

Main quality indexes and performances

品种 Variety	条干 CV% Evenness CV%	-50% 细节 -50%Thin places	+50% 粗节 +50%Thick places	+200% 棉结 +200%Cotton knot	毛羽 H Hairiness H	强力 CN Strength CN
Tencel/AC70/30 40S 紧赛 Tencel/AC70/30 40SCompact Siro	13.1	2	34	62	4.1	265.9
Tencel/AC70/30 32S 紧赛 Tencel/AC70/30 32S Compact Siro	11.48	0	13	44	3.9	318.1

超越纺织
CHAOYUE TEXTILES

赛络紧密纺腈纶纤维混纺纱

Compact Siro-spun acrylic fiber blended yarn

原料及规格：赛络紧密纺 莫代尔 / 粘胶 / 膨体腈纶 / 固体腈纶 / 羊毛 / 蚕丝 30/24/20/20/3/3 50S

关键词：六组份混纺

推荐理由：该纱线品种由莫代尔、粘胶、膨体腈纶、固体腈纶、美利奴澳毛、桑蚕丝等六组份纤维混合纺纱而成，是纤维素纤维、聚丙烯腈纤维和天然纤维性能的相互迭代。既具有纤维素纤维吸湿舒适，聚丙烯腈着色靓丽，澳毛柔软、保暖优点，又具有天然桑蚕丝独特的养颜护肤等功能性特点，可实现多种纤维特性互补。

适用范围：内衣

代表企业：山东超越纺织有限公司

品牌：中鲁超越

Raw materials and specifications: Compact Siro-spun Modal/viscose/bulkedacrylic fiber/solid acrylic fiber/wool/silk 30/24/20/20/3/3 50S

Key words: Six-component blended yarn

Reasons for recommendation: This yarn is made through six-componentfiber mixed spinning, such as Modal, viscose, bulked acrylic fiber, solid acrylic fiber, Merino Australian wool and mulberry silk, which is an iteration of the properties of cellulose fiber, polyacrylonitrile fiber and natural fiber. It not only has the comfortable and moisture-wicking advantages of cellulose fiber, beautiful coloring advantages of polyacrylonitrile, soft and warm keeping advantages of Australian wool, but also has the unique functional characteristics of natural mulberry silk, such as beauty care and skin care, which can realize the complementary characteristics of various fibers.

Scope of application: Underwear

Representing enterprises: Shandong Chaoyue Textile Co., Ltd.

Brand: Zhonglu Chaoyue

锦纶弹性纤维混纺纱线

Nylon elastic fiber blended yarn

原料及规格：赛络紧密纺 锦纶 / 弹性纤维 60/40 40S

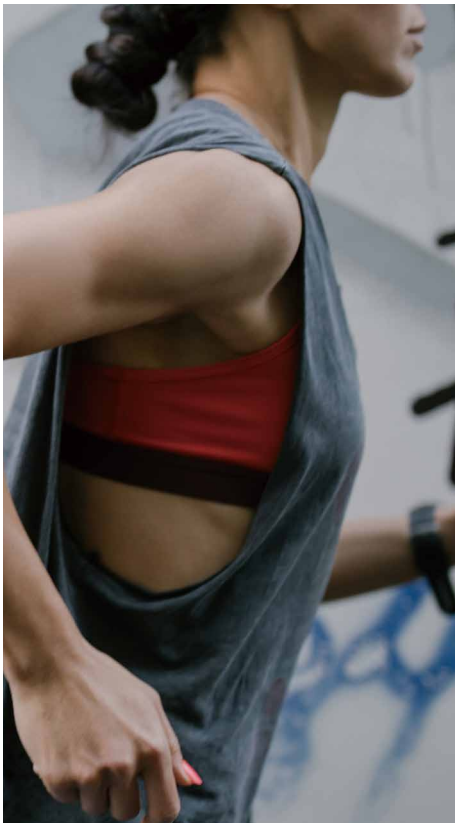
关键词：弹力 凉感 保型

推荐理由：该纱线由功能锦纶短纤和弹性纤维混纺而成，由该纱线制成的面料打破了常规锦纶长丝化纤感极强的传统风格，具有良好的棉感，与弹性纤维的结合更使面料爽滑、凉感、微弹，穿着舒适贴服易打理，保型性好不易变形。

适用范围：运动服饰

代表企业：无锡四棉纺织有限公司

品牌：球鹤



Raw materials and specifications: Compact Siro-spun nylon/elastic fiber 60/40 40S

Key words: Elastic, cool, shape-preserving.

Reasons for recommendation: The yarn is blended with functional nylon staple fiber and elastic fiber. The fabric made of the yarn breaks the traditional style of strong chemical fiber feeling of conventional nylon filament, and has a good cotton feeling. The combination with elastic fiber makes the fabric smooth, cool, slightly elastic, comfortable to wear, easy to handle, good in shape preservation, and not easy to deform.

Scope of application: Sportswear

Representing enterprises: Wuxi No. 4 Cotton Mill Textile Co., Ltd.

Brand: Qiuhe

新华源集团
XINHUAYUAN GROUP

精梳棉 / 锦纶高强耐磨包芯包缠线

Combed cotton/Nylon high-strength and abrasion-resistant core-wrapped yarn

原料及规格：精梳棉 / 锦纶（40D/12F）50/50 32S/2

关键词：高强 耐磨

推荐理由：该纱线经三次复合而成，选用长绒棉和锦纶长丝两种原料，采用独特的双丝单粗纱包芯包缠复合纱结构，使纱线兼具舒适性和高强耐磨特性，织物经整理后布面平整不易变形，是制作户外运动、军服等纺织品的理想原料。

适用范围：户外运动服、军服等

代表企业：福建新华源科技集团有限公司

Raw materials and specifications: Combed cotton/nylon (40D/12F) 50/50 32S/2

Key words: high-strength, abrasion-resistant

Reasons for recommendation: This yarn is compounded three times, and two raw materials - long-staple cotton and nylon filament, are selected with a unique double-filament single roving core-wrapped composite yarn structure, so that the yarn has the characteristics of comfort and high strength and abrasion resistance, and the fabric is smooth and not easy to deform after finishing, and is an ideal raw material for making textiles such as outdoor sportswear and military uniforms.

Scope of application: Outdoor sportswear, military uniforms, etc.

Representing enterprises: Fujian Xinhuayuan Technology Group Co., Ltd.

主要质量指标与性能

Main quality indexes and performances

产品名称 Product Name	精梳棉 / 锦纶（40D/12F）50/50 32S/2 Combed cotton/nylon (40D/12F) 50/50 32S/2	
检验项目 Test Items	单位 Unit	检验结果 Test result
线密度 Linear density	tex	36.3(18.2tex×2)
断裂强度 Breaking strength	CN/tex	37.7
断裂强力变异系数 CV Variation coefficient of breaking strength of single yarn CV	%	2.58
断裂伸长率 Elongation at break	%	23.7
百米重量变异系数 CV Coefficient of variation (CV) per 100 meters weight	%	0.6
百米重量偏差 Weight deviation per 100 meters	%	-0.8
-50% 细节 -50%Thin places	个 /km Pc/km	0
+50% 粗节 +50%Thick places	个 /km Pc/km	1
+200% 棉结 +200% Cotton knot	个 /km Pc/km	10

品质匠心纱线，是基于常规纤维，在传统纺纱工艺基础上开展创新纤维混纺、工艺调整、设备改造等，优化纱线性能，满足消费者对高端纺织品服装的需求。科技创新助推纺织产业结构调整与升级，通过做精、做专、做透常规产品，提高产品的市场占有率和品牌影响力，让常规纱线焕发出新的价值。

The yarn with qualified craftsmanship, based on conventional fiber, innovates fiber blending with process adjustment and equipment transformation to optimize the yarn properties on the basis of the traditional spinning process, so as to meet consumers' demand for high-end textiles and clothing. Scientific and technological innovation promotes the structural adjustment and upgrading of the textile industry. By producing fine, specialized and thorough conventional products, the market share and brand influence of the products are improved, so that conventional yarns glow with the new value.

品质匠心

质朴本真 • 回归至简初心

QUALIFIED CRAFTSMANSHIP

EXPLORE PURITY TO RETURN TO ORIGINAL ASPIRATION OF SIMPLICITY ASPIRATION OF SIMPLICITY

魏橋紡織
WEIQIAO TEXTILE

复合捻向纱线

Composite twist-direction yarn

原料及规格：100% 棉 20S-40S

关键词：抗起毛起球 耐磨

推荐理由：通过纺纱技术创新，在同一根单纱内存在着两种不同捻向的纤维束，通过加捻作用实现捻向相异的纤维束相互复合缠绕成纱，该单纱结构可以有效降低成纱毛羽、提升单纱强力，从而大幅改善成纱及所织面料的耐磨及抗起毛起球等性能。

适用范围：针织 T 恤领域

代表企业：魏桥纺织股份有限公司

品牌：魏桥牌

Raw materials and specifications:100% cotton 20S-40S

Key words: Anti-pilling, wear-resistant

Reasons for recommendation: Through the innovation of spinning technology, there are two kinds of fiber bundles with different twist directions in the same single yarn, and the fiber bundles with different twist directions are compounded and wound into yarn through twisting. This single yarn structure can effectively reduce yarn hairiness and improve the strength of the single yarn, thus significantly improving the wear resistance and pilling resistance of the yarn and the woven fabric.

Scope of application: Knitted T-shirt field

Representing enterprises: Weiqiao Textile Co., Ltd.

Brand: Weiqiao

主要质量指标与性能

Main quality indexes and performances

复合捻向紧赛纺面料
规格：复合捻向 40sK 双纱汗布
Composite twist-direction Siro-spun fabric
Specification: Composite twist-direction 40sKDouble-yarn jersey

检测项目 Test Items	检测依据 Standard	实测值 Result
抗起毛起球 Anti-pilling	GB/T 4802.2-2008	2000 转 4-5 级 2000 rpm Grade 4-5
耐磨 /r wear-resisting/r	GB/T 21196.1-2009	126000 转出现破洞 Broken holes at 126000 rpm
无尘率 /% Dust-free rate/%	/	1.47

双弘 DOUBLE GREAT

丝光羊毛复合包芯纱

Mercerized wool composite core-spun yarn

原料及规格：羊毛 / 涤纶长丝 50/50 32S；羊毛 / 锦纶长丝 50/50 32S

关键词：蓄热 抑菌

推荐理由：该产品应用羊毛纤维，结合环锭纺、包芯纱装置、细纱集体落纱技术，开发生产了羊毛 / 涤纶长丝、羊毛 / 锦纶长丝等包芯混纺高品质纱线，手感柔软、强度高、毛羽少、抗起毛起球好、条干均匀度好。应用其制成的纺织品，织物布面光洁，轻蓬暖柔，耐磨性好、具有蓄热升温、改善微循环、有助抑菌功能，与此同时更为绿色环保。

适用范围：服装、家纺

代表企业：南通双弘纺织有限公司

品牌：双弘

产品获得专利：《一种包芯纱纺纱装置》(ZL 2022 2 0045408.2)

Raw materials and specifications: (W+40D/12F×2) 32Score-spun yarn, W (40D/12F×2)32Score-spun yarn

Key words: Heat storage, bacteriostasis

Reasons for recommendation: This product uses wool fiber, combined with ring spinning, core-spun yarn device and spun yarn collective doffing technology, to develop and produce high-quality core-spun blended yarns such as wool/polyester filament and wool/nylon filament, which are soft to the touch, high in strength, less in hairiness, good in pilling resistance and evenness. The textiles made of it are clean, smooth, light, warm and soft, good in wear resistance, with the functions of heat storage, temperature rise, microcirculation improvement, bacteriostasis, and at the same time, more environmentally friendly.

Scope of application: Clothing, home textile

Representing enterprises: Nantong Double Great Textile Co., Ltd.

Brand: Double Great

The patent of the product: A Core-spun Yarn Spinning Device(ZL 2022 2 0045408.2)

主要质量指标与性能

Main quality indexes and performances

品种 Variety	条干 CV% Evenness CV%	-50% 细节 -50% Thin places	+50% 粗节 +50% Thick places	+200% 棉结 +200% Cotton knot	毛羽 H Hairiness H	强力 CN Strength CN
羊毛 / 涤纶长丝 50/50 32 支 Wool/polyester filament yarn 50/50 32s	11.6	1.3	7.5	11.8	3.15	640.2
羊毛 / 锦纶长丝 50/50 32 支 Wool/nylon filament 50/50 32s	11.9	0.5	6.5	13.6	3.26	645.5

喷气涡流纺再生纤维素纤维聚酯包芯纱

Air-jet vortex spinning recycled cellulose fiber polyester core-spun yarn

原料及规格：喷气涡流纺 粘胶 /PBT(50D/24F）25S

关键词：易染色 舒适 耐洗涤

推荐理由：本产品由两种纤维组成，芯纱采用涤纶长丝或其它长丝，外包粘胶短纤，利用涡流纺纱机及特殊加芯纱机构纺制。该纱线充分发挥涤纶长丝挺爽、抗折皱、易洗快干的优点，同时发挥外包粘胶纤维吸湿好、静电少，不易起毛起球的特长。织成的织物易染色整理、穿着舒适、耐洗涤，且色泽鲜艳，美观大方。与此同时，在保持和改进织物性能的同时，可减轻织物的重量。

适用范围：T 恤、衬衣、工作服、被单、家用装饰布

代表企业：巴州金富特种纱业有限公司

Raw materials and specifications: Air-jet vortex spinning viscose/ PBT(50D/24F)25S

Key words: Easy-dyeing, comfortable and washable

Reasons for recommendation: This product is composed of two kinds of fibers, whose core yarn uses the polyester filament or other filaments, wrapped with viscose staple fiber, and is spun by the vortex spinning machine and special cored yarn mechanism. This yarn gives full play to the advantages of polyester filament, such as slippery and smooth, wrinkle resistance, easy washing and quick drying, and at the same time gives full play to the advantages of wrapped viscose fiber, such as good moisture absorption, less static electricity and less pilling. The woven fabric is easy to dye and finish, comfortable to wear, washable, bright in color and elegant in appearance. At the same time, the weight of the fabric can be reduced while maintaining and improving the performance of the fabric.

Scope of application: T-shirts, shirts, work clothes, sheets, household decorative cloth

Representing enterprises: Bazhou Jinfu Special Yarn Industry Co., Ltd.

主要质量指标与性能

Main quality indexes and performances

品种（英支） variety (s)	单纱强力 (CN) Single Yarn Strength/ (CN)	条干均匀度变异系数 /%(CV%) Coefficient of variation (CV) of evenness (CV%)/%	棉结（+200%）/（个/km） Cotton knot (+200%)/(Pc/km)	毛羽 Hairiness	备注 Note
OER25s	350	12.0	10	4.2	普通涡流纺 Ordinary vortex spinning
	481	11.4	6	3.11	涡流纺包芯纱 Vortex spinningcore-spun yarn

转杯纺棉莱赛尔混纺纱线

Rotor spinning cotton Lyocell blended yarn

原料及规格：转杯纺 棉 / 莱赛尔 63/37 7S-32S

关键词：舒适 环保 易染色

推荐理由：该产品以天然植物纤维为原料，生产过程无化学反应，绿色环保，具有棉纤维的舒适性、手感好、易染色等特点。经一系列工艺优化，有效规避了布面染色出现大面积条花的现象。

适用范围：服装、家纺

代表企业：浙江九舜纺织有限公司

品牌：JIUSHUN

Raw materials and specifications: Rotor spinning cotton/ Lyocell 63/37 7S-32S

Key words: Comfortable, environmentally-friendly, easy dyeing.

Reasons for recommendation: This product is made of natural plant fiber without chemical reaction in the production process;it is green and environmentally-friendly, and has the characteristics of cotton fiber, such as comfort, good hand feelings and easy dyeing. After a series of process optimization, the large area of streaking in fabric dyeing is effectively avoided.

Scope of application: Clothing, home textile

Representing enterprises: Zhejiang Jiushun Textile Co., Ltd.

Brand: JIUSHUN

主要质量指标与性能

Main quality indexes and performances

规格型号 Specifications and models	16S	
检验项目 Test Items	单位 Unit	实测结果 Result
纤维含量（结合公定回潮率） Fiber content (combined with convention moisture regain)	%	棉：63.3 Cotton: 63.3 再生纤维素纤维：36.7 Recycled cellulose fiber: 36.7
线密度 Linear density	Tex	36.3
条干不匀率 Unevenness	%	10.8
棉结（+2800%） Cotton knot (+2800%)	个 /km Pc/km	13
断裂强力 Breaking strength	cN	455
断裂伸长率 Elongation at break	CN/tex	7.8
捻度 Degree of twist	捻 /10cm twist/10cm	50.7

国产莱赛尔纱线

Domestic Lyocell yarn

魏橋紡織 WEIQIAO TEXTILE

原料及规格：10%-100% 莱赛尔 21S-120S

关键词：高支

推荐理由：国产莱尔纤维原料具有并丝、硬板丝及疵点含量高等特点，通过对纺纱流程的创新及纺纱参数的优选设计，成功解决国产莱赛尔纤维无法高支化生产与应用的技术瓶颈，且使国产莱赛尔纱线指标优于进口莱赛尔纱线指标，实现国产莱赛尔纤维高支规模化生产。

适用范围：针织、家纺、服装

代表企业：魏桥纺织股份有限公司

品牌：魏桥牌

产品获得专利：《一种国产莱赛尔高支纱线及其生产方法》（ZL 202110397035.3）

Product specification: Raw materials and specifications: 10%-100% Lyocell 21S-120S

Key words: High-count

Reasons for recommendation: Domestic Lyocell fiber raw material has the characteristics of paralleled yarn, stiff yarn and high defect content. Through the innovation of the spinning process and the optimal design of spinning parameters, the technical bottleneck that domestic Lyocell fiber fails to be produced and applied with the high count is successfully solved, and the indicators of domestic Lyocell yarn are better than those of imported Lyocell yarn, thus realizing the high-count scale production of domestic Lyocell fiber.

Scope of application: Knitting, home textiles, clothing

Representing enterprises: Weiqiao Textile Co., Ltd.

Brand: Weiqiao

The patent of the product: A Domestic Lyocell High-count Yarn and the Production Method Thereof(ZL 202110397035.3)

有机棉精梳漂白高强纱

Organic cotton combed bleachedhigh-strength yarn

原料及规格：赛络紧密纺 100% 有机棉 40-60S

关键词：高强

推荐理由：原料全部采用有机棉，纱线条干好、棉结少、毛羽少，纱体顺滑光洁、强度高，所制备面料耐磨与回弹性好，纺纱过程低碳、节能、环保、绿色化，风格独特，是高档服装面料首选用纱。

适用范围：服装、家纺、产业用纺织品

代表企业：扶沟县昌茂纺织有限责任公司

品牌：昌茂

Raw materials and specifications: Compact Siro-spun 100%organic cotton 40-60S

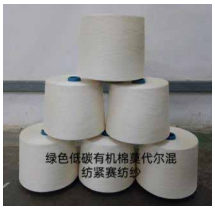
Key words: High-strength

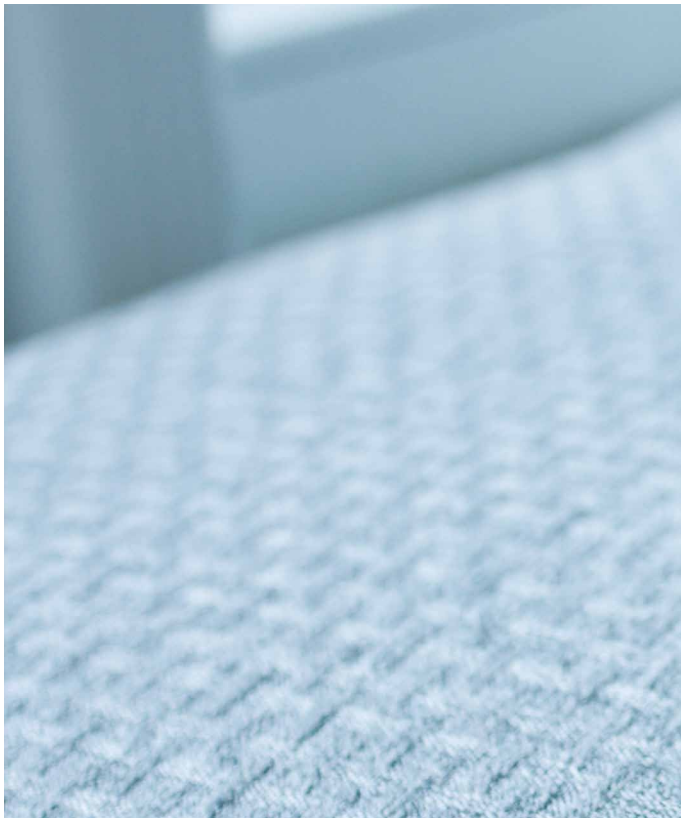
Reasons for recommendation: The raw materials of this product are all organic cotton, with good yarn evenness, fewer cotton knots and less hairiness, smooth and clean yarn body and high strength. The fabric made has good wear resistance and resilience, and the spinning process is low-carbon, energy-saving, environmentally-friendly and unique. It is the first choice for high-end clothing fabrics.

Scope of application: Clothing, home textile, industrial textiles

Representing enterprises: Fugou County Changmao Textile Co., Ltd.

Brand: Changmao





主要质量指标与性能
Main quality indexes and performances

产品名称 Product Name	有机棉精梳漂白高强纱 60S Organic cotton combed bleached high-strength yarn 60S	
检验项目 Test Items	单位 Unit	检验结果 Test result
单纱强力 Single yarn strength	CN	182
断裂强度 Breaking strength	CN/tex	18.7
捻度 Degree of twist		125
捻系数 Twist coefficient		389
条干均匀度 Evenness	%	12.1
-50% 细节 -50% Thin places	个 /km Pc/km	2
+50% 粗节 +50% Thick places	个 /km Pc/km	15
+200% 棉结 +200% Cotton knot	个 /km Pc/km	26
3mm 毛羽 3mmHairiness	根 /m Piece/m	2.7

华源生态科技
HUAYUAN ECO - TECHNOLOGY

莫代尔长绒棉混纺高支纱

Modal long-staple cotton blended high-count yarn

原料及规格：超细旦莫代尔 / 棉 60/40 140S

关键词：高支

推荐理由：该纱线采用兰精超细旦莫代尔纤维及新疆特长长绒棉混纺，细度可达 140S，与常规莫代尔 / 棉混纺纱相比，条干好、棉结少，面料柔软、透气。

适用范围：针织圆机原纱、拉架平纹布、家居服等

代表企业：德州华源生态科技有限公司

Raw materials and specifications: Ultra-microdenierModal/cotton 60/40 140S

Key words: High counts

Reasons for recommendation: The yarn is blended with Lenzing ultra-microdenier Modal fiber and Xinjiang extra-long staple cotton, and the fineness can reach 140S. Compared with the conventional Modal/cotton blended yarn, the yarn has good evenness, fewer cotton knots, and soft and air-permeable fabric.

Scope of application: Knitted circular grey yarn, drawstring plain cloth, leisure wear, etc.

Representing enterprises: Dezhou Huayuan Eco-Technology Co., Ltd.

莱赛尔羊毛聚酯混纺纱线

Lyocell wool polyester blended yarn

原料及规格：50%-70% 莱赛尔纤维，5%-15% 超细丝光澳毛，25%-35%PBT 聚酯纤维

关键词：亲肤 保暖

推荐理由：产品成分为 50%-70% 莱赛尔纤维，5%-15% 超细丝光澳毛和 25%-35%PBT 聚酯纤维，具有棉的舒适性、涤纶的强度、毛织物的豪华美感和真丝的独特触感及柔软垂坠。莱赛尔纤维吸湿排汗、触感丝滑且亲肤，可以生物降解；再辅以高支进口羊毛，可增加保暖性。

适用范围：服装、家纺、产业用

代表企业：广世纺织（张家港）有限公司

Raw materials and specifications: 50%-70% Lyocell fiber, 5%-15% superfine mercerized Australian wool, 25%-35% PBT polyester fiber

Key words: Skin-friendly, warm keeping

Reasons for recommendation: The product consists of 50%-70% Lyocell fiber, 5%-15% superfine mercerized Australian wool, and 25%-35% PBT polyester fiber, which has the comfort of cotton, the strength of dacron, the luxurious aesthetic feelings of wool fabric, and the unique touch and soft drapability of silk. Lyocell fiber can absorb moisture and sweat, and it touches smooth and skin-friendly, and can be biodegradable; the combination with high-count imported wool can increase warmth retention.

Scope of application: Clothing, home textile, industrial use

Representing enterprises: Guangshi Textile (Zhangjiagang) Co., Ltd.

视觉时尚纱线，打破固态刻板印象，利用新色彩、新花型，开发花式纱、色纺纱及仿真纱线，带来全新视觉冲击。原创性色彩配比，科学固色工艺，让美丽持续停留；突破性牵伸工艺，前沿花型设计，让视觉也可以有触感。衣着不平凡，家居不平淡，生活不平庸，视觉时尚纱线唤醒人们视觉触觉感官，激发美好想象与别样追求。

The yarn shining with visual fashion breaks the solid stereotype and develops fancy yarn, colored spinning yarn and simulated yarn by using new colors and patterns to bring brand-new visual impact. Original color matching and scientific color fixing technology make the beauty stay all the time; breakthrough elongation technology and cutting-edge pattern design realize that the vision has touch feelings. Clothing is extraordinary, home is not monotonous, and life is not mediocre. The yarn shining with visual fashion awakens people's visual sense and touch feelings, and stimulates good imagination and other pursuits.

视觉时尚

流光溢彩 • 扮靓多彩人生

VISUAL FASHION

GLOWING COLORS TODECORATECOLORFULLIFE

粗纺砂砾圈圈纱

Roving gravel loop yarn

原料及规格：PET 3.1NM-18NM

关键词：圈圈纱

推荐理由：圈圈纱融入一定比例低弹丝，使其具有非常舒适的伸缩性，织片可塑性更强；通过饰纱超喂在纱线的表面上形成封闭的圆形，外以固纱包缠来固定花型；圈圈纱的使用使得纱线自带砂砾感，这样能够以较少的纱线纺织成粗纺面料，实现了产品轻量化，而原料的减少直接降低了生产能耗，从而减少温室气体的排放。

适用范围：羊毛衫、运动衣、裤等织物、家居产品等

代表企业：旷达纤维科技有限公司

品牌：旷达

产品获得认证 / 专利：《耐磨透气车用内饰花式卷曲纱面料和使用该面料的座椅》《一种再生环保有色差别化纤维及其织成的面料》

Product specification: Raw materials and specifications: PET 3.1NM-18NM

Key words: Loop yarn

Reasons for recommendation: The loop yarn is mixed with a certain proportion of low elastic filament, which makes it very comfortable to stretch and makes the fabric more plastic; closed circles are formed on the surface of the yarn by the overfeeding of the decorative yarn, and the pattern is fixed by wrapping the yarn externally; the use of loop yarn makes the yarn gritty, so that it can be spun into the roving fabric with less yarn, which realizes the lightweight of the product, and the reduction of raw materials directly reduces the production energy consumption, thus reducing the emission of greenhouse gases.

Scope of application: Woollen sweater, sportswear, pants and other fabrics, household products, etc.

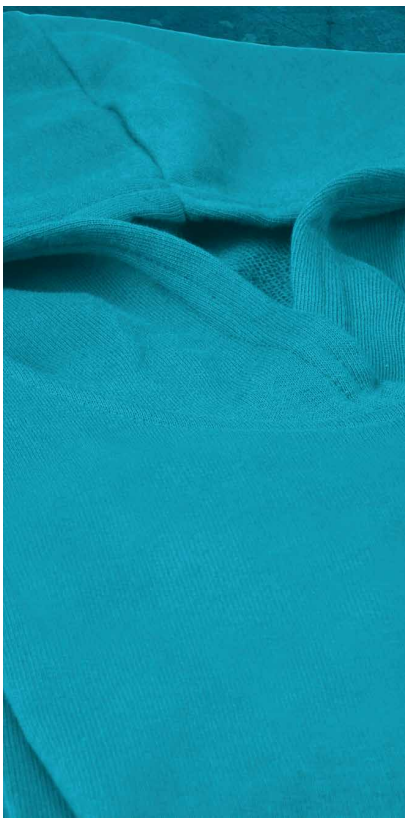
Representing enterprises: Kuangda Fiber Technology Co., Ltd.

Brand: Kuangda

The patent of the certification/product: The certification/patent of the product: Fancy Curled Yarn Fabric for Wear-resistant and Air-permeable Vehicle Interior and Seats Using the Fabric; A kind of Recycled Environment-friendly Colored Differential Fiber and the Woven Fabric

变捻纱

Twist-changing yarn



原料及规格：捻系数 290-680 变捻长度 20-1000 16S-60S

关键词：新结构 新功能

推荐理由：纱线在保持纱支不变的情况下，通过捻度变化可实现布面不同风格；捻系数在 290-490 之间根据要求从程序设计中实现不规则变化；布面纱线由高捻和低捻纱不规律组成，实现褶皱风格，或通过染色着色差异呈现独特的不规则横条风格。

适用范围：服装

代表企业：山东联润新材料科技有限公司

产品获得认证：发明专利“一种变捻纱及其纺纱方法”（ZL 201910022422.1），2022 年 6 月，通过科技鉴定（纺科鉴字 [2022] 第 51 号），鉴定结论为“整体技术处于国际先进水平，其中变捻纱的生产方法处于国际领先水平”。

Raw materials and specifications: Twist coefficient 290-680 twist-changing length 20-1000 16S-60S

Key words: New structure, new function

Reasons for recommendation: Under the condition of keeping the yarn count unchanged, different styles of cloth surface can be realized by changing the degree of twist; the twist coefficient is between 290 and 490, and the irregular change is realized from the program design according to the requirements; fabric yarns are composed of high-twist and low-twist yarns irregularly, realizing the wrinkle style, or presenting a unique irregular stripe style through dyeing and coloring differences.

Scope of application: clothing

Representing enterprises: Shandong Longrun Textile Co., Ltd.

The certification of the product: Patent for invention: A Twist-changing Yarn and the Spinning Method Thereof (ZL 201910022422.1). In June 2022, through scientific and technological evaluation (F.K.J.Z. [2022] No.51), the conclusion is that "the overall technology is at the international advanced level, and the production method of the twist-changing yarn is at the international leading level".

大差异比例 AB 竹节纱

AB bunchy yarn with a big difference ratio

原料及规格：AB 差异极限比例 85/15 16S-40S

关键词：大差异比例

推荐理由：该纱线将新一代数字化、信息化、智能化技术与纺织行业深度融合，实现了色泽变化丰富、结构变化多样、功能多重组合的时尚风格纱线产品的智能化生产。AB 差异一般控制在 80%:20%，极限可以到达 85%:15%；大差异比例 AB 竹节纱因独特的布面风格、鲜明的层次感、立体感倍受市场青睐，市场需求量也逐年增加，经济效益好。

适用范围：服装

代表企业：山东联润新材料科技有限公司

Raw materials and specifications: ABdifference limit ratio 85/15 16S-40S

Key words: Big difference ratio

Reasons for recommendation: The yarn deeply integrates a new generation of digital, information and intelligent technology with the textile industry, and realizes the intelligent production of fashionable yarn products with rich color changes, diverse structural changes and multiple combinations of functions. AB difference is generally controlled at 80% : 20%, and the limit can reach 85% : 15%; AB bunchy yarn with a large difference ratio is favored by the market due to its unique cloth surface, distinct layering and three-dimensional sense, and the market demand is also increasing year by year, achieving good economic benefits.

Scope of application: clothing

Representing enterprises: Shandong Longrun Textile Co., Ltd.

腈纶多组份混纺色纺纱

Acrylic multi-component blended color-spun yarn

原料及规格：赛络紧密纺 腈纶 / 精梳棉 / 粘胶 / 蚕丝 / 山羊绒 50/22/22/3/3 40S

关键词：天然

推荐理由：腈纶多组份混纺色纺纱采用色纺纱纤维纺纱前着色工艺，低碳环保色牢度好，含羊绒蚕丝等天然纤维产品，更天然、高端、时尚，具有安全环保等特点。

适用范围：服装、针织等

代表企业：沛县新丝路纺织有限公司

品牌：新起点色纺


商标注册证

新起点色纺

Raw materials and specifications: Compact Siro-spun acrylic/combed cotton/viscose/silk/cashmere 50/22/22/3/3 40S

Key words: Natural

Reasons for recommendation: Acrylic multi-component blended color-spun yarn adopts a color-spun yarn fiber spinning pre-dyeing process, which is low-carbon and environmentally-friendly with good color fastness, and contains natural fiber products such as cashmere and silk, which is more natural, high-end, fashionable, safe and environmentally-friendly.

Scope of application: clothing, knitting, etc.

Representing enterprises: Peixian Xinsilu Textile Co., Ltd.

Brand: Xinqidian color spinning

下游产品发展趋势

DOWNSTREAM FORECAST

2023 消费趋势的 6 大洞察
6 Insights to the Consumption Trends in 2023

面向个人热管理的无源温度调控纺织品
Functional Textiles for Passive Personal Thermal Management

企业绿色循环行动要点：案例、策略与启示
Key Points of Enterprise Circular Action: Cases, Strategies and Enlightenment

2023 消费趋势的 6 大洞察

6 Insights to the Consumption Trends in 2023

知萌咨询机构创始人兼 CEO
Founder and CEO of Trend

肖明超
Xiao Mingchao

2022 年在疫情政策的全面放开中结束，2023 年已经到来，每个人的生活都在逐渐恢复到常态。当生活回到常态，消费也在逐渐回暖，在知萌所开展的针对全国典型消费者的调研中，消费者谈到了很多期盼：回到忙碌的工作，回到大自然，展开旅行，与久别的家人朋友团聚，或者开展新的人生计划等等。很多人还期盼着把过去 3 年没有实现的目标，在这一年尽快付诸实践，把这三年慢下来的蛰伏和思考转化为新的能量和方向，这些消费者的需求，都将会让蛰伏许久的消费热情被激发出来，更会成为 2023 年的新的消费“潜流”而呈现于消费市场。

经历了 3 年疫情，消费者与不确定的环境相处，也在不断调整消费的预期，调整消费的结构，同时，思考自我的同时，也在增长着消费的智慧。通过我们的年度调研发现，越来越多的消费者更加关注自我的小世界，愈加追求消费的获得感、价值感和意义感；对于消费的选择，消费者更加趋于审慎和理性，不再那么冲动，也不再那么容易被鼓动。

The year 2022 ended with the lift of epidemic prevention and control policies. At the advent of 2023, everyone's life has been gradually returning to normal, along with the warming-up of consumption. In the survey of typical consumers nationwide carried out by Trend, consumers mentioned about many expectations: return to busy work, return to nature, travel, reunite with family and friends after a long separation, carry out new life plans, etc. Many people also look forward to putting the goals that have not been achieved in the past three years into practice as soon as possible in this year, and transforming the accumulation and thinking in the past three slow years into new energy and direction. These consumer needs will stimulate the accumulated consumption enthusiasm in the past years, and become the new "undercurrent" of consumption present in the consumer market in 2023.

After experiencing the outbreak of COVID-19 for three years, consumers have been living in an uncertain environment and constantly adjusting their consumption expectations and structure. At the same time, consumers have been also growing their wisdom of consumption while thinking about themselves. According to the annual survey, more and more consumers pay more attention to their own small world, and the sense of gain, value and significance of consumption; And they tend to be more cautious and rational instead of impulsive and easily-encouraged with regard to consumption choice.

Therefore, in what direction will the consumption trend develop in 2023, and how should business innovation, brand planning and marketing grasp the new trend and better connect with consumers in 2023 constitute new challenges.

Eight Consumption Trends in 2023

"Gradually recovering and developing". After in-depth research, Trend predicts eight consumption trends in 2023, including: impulsive but rational, atmospheric and pleasant, refined and perfected, purism, China-Chic, green and environmental-protection, brand-oriented, and virtual-economy and

那么，2023 年消费趋势会朝什么方向发展?对于商业创新、品牌规划和营销而言，应该如何去把握新的趋势，在 2023 年更好的与消费者建立连接?

2023 年八大消费趋势

“韧性向前，渐进回暖”。知萌咨询机构经过深度研究，预见了 2023 年将会呈现的 8 大消费趋势，分别是：理智随兴、氛围怡情、精微极质、纯粹主义、国潮新境、绿色风尚、信任复利、虚实共振。

趋势一：理智随兴

疫情打乱了很多人的生活节奏，让人们对生活有了更多思考，消费者不再像过去那么容易被鼓动，消费决策变得更加慎思笃行，理性逻辑指引“随兴”消费，购买产品不止是功能性价值满足，更是希望产品为生活带来的惊喜感、意义感、价值感和满足感。

在审慎消费与兴趣消费双线并行的趋势下，产品需要思考如何给消费者生活带去新的惊喜和意义，同时，需要用更加朴实细腻的内容与消费者进行沟通，才能触达心灵。

例如，作为国内贴身衣物领域专业品牌，都市丽人在国内已经营 24 年，一直以来面对的是最广泛的消费群体，其适中的定价，较高的性价比，精准切中了消费者“花更少的钱，获得最佳体验”的诉求，都市丽人产品开发时，尽可能地在普通消费者能承受的范围内，选取性价比较高的面料，例如聚酯纤维，通过技术的打造，让其性能更佳。

趋势二：精微极致

随着人们对内在生活质量要求的提高，人们在购买产品时，同样产品功能，不同的人群，在不同的场景下会有不一样的需求。来自京东的数据显示，智能化产品在 2022 年的搜索度和购买率都有较大的增长，其中，洗地机、美容仪以及游戏电视等成为了消费者的首选，同时，也展现了智能化、健康化、精细化的消费趋势。

消费者开始关注不同细分场景下的精细化功效，面对更加专业的消费者，品牌需要塑造更加精细化的产品满足不同的消费需求，使得品牌与消费者消费质量达到双升级，即“精微极致”。数据显示，消费者购买这些精细化产品的原因，包括了方便简单易操作、带来很好的体验以及能带来情绪化安抚等。

因此，对消费者的新生活方式、生活理念以及更加细分的场景需求进行细微的观察，通过技术创新和极致的产品体验，找到可感知的差异化价值，成为“成熟品类的革新者”和“新品类的定义者”的领先密码。例如，专注为大杯女性提供产品和服务的奶糖派，就在产品上进行极致的精微创新，独创了分胸型内衣和 7 维数据测量法，至今已覆盖全系列 60 个尺码、49 种专属杯型，累计获得 65 项国家专利，在增强品牌自身竞争力的同时 , 帮助更多女性实现内衣自由。

real-economy advancing together.

Trend I: Impulsive but Rational

The COVID-19 has disrupted the pace of life of many people and made people think more about life. Consumers are no longer as easy to be encourage as in the past. They make consumption decisions more deliberately and prudently, guiding impulsive consumption with rational logic. Therefore, the products should not only provide functional value, but also offer the sense of surprise, meaning, value and satisfaction to life.

Under the parallel trends of prudent consumption and interest consumption, products should bring new surprises and meaning to consumers' life, and communicate with consumers with more simple and exquisite content to reach their soul.

For example, as a professional brand in the field of underwear in China, Cosmo Lady has been operating in China for 24 years. Facing the most extensive consumer group, the brand accurately meets customers' demand of "lesser money but better experience" with moderate pricing and high-cost performance. In product development, the brand always tries to select the fabrics with high-cost performance and affordable for ordinary consumers, such as polyester fiber, and adopts suitable technologies to endow it with better performance.

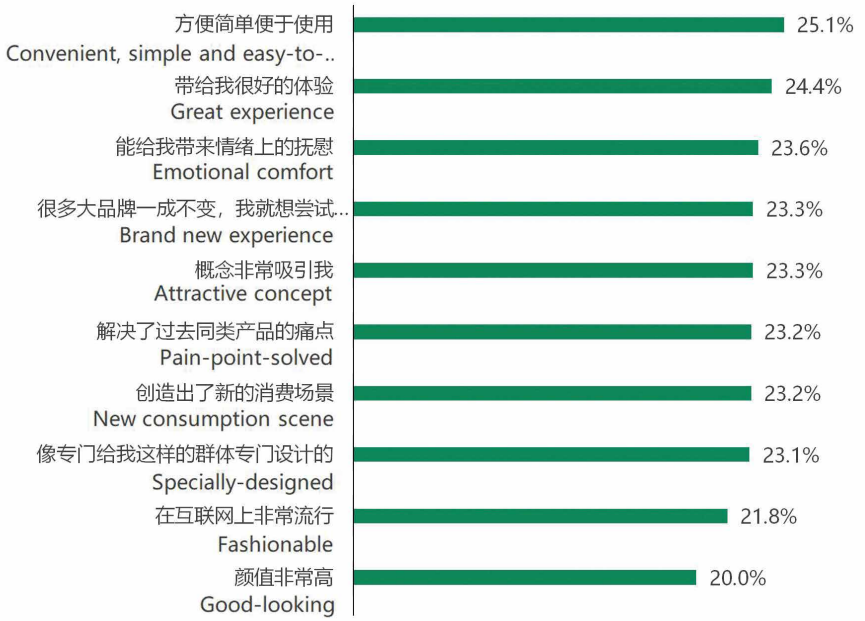
Trend II: Refined and Perfected

With higher requirements for the internal quality of life, different people may have different needs in different scenarios for the same product function when buying products. According to the data of JD.com, the search rate and purchase rate of intelligent products increased significantly in 2022, among which the scrubber, beauty apparatus and game TV became the first choices of consumers, demonstrating the intelligent, healthy and refined consumption trend.

Consumers begin to pay attention to the refined effect under different subdivided scenarios. Facing more professional consumers, the brand needs to create more refined products to meet different consumer needs, so that both the brand and consumer consumption quality can be upgraded, that is, "refined and perfected". According to the data, consumers buy these refined products for such reasons as convenient, simple and easy-to-use,

附图 针对消费者细分需求推出的新消费产品，您购买它们的原因是什么？[多选题]

Figure: Why do you purchase the new consumption products launched according to the subdivision needs of consumers? [Multiple choice]



趋势三：纯粹主义

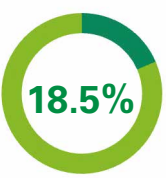
“成分优先”已成为很多人的消费理念，从化妆品的“成分党”，到家居装修的“材料党”，如今消费者开始关注食品饮料领域的配料，并通过自我学习和个性化需求来寻找更合适的商品，甚至很多人将自己总结的“心得”发布到各大网络平台。护肤要“早C晚A”、食品添加剂是“洪水猛兽”、买婴儿奶粉要选蛋白质含量最高的、买奶茶不仅关注主料，更要关注辅料……研究成分和配料的热情只增不减，消费者对于安全健康的关注场景被大大拓展，也让很多的工艺、材料、成分开始跨界，尤其是很多和消费者生活空间相关的，比如家居及装饰品、服装、化妆品以及食品饮料，都开始在成分或者材料上做文章。

附图 表示在日常消费中“关注成分，搞清楚产品成分与配料更放心”的消费者比例

Figure: The proportion of consumers who "pay attention to the elements and ingredients of products" in daily consumption.

附图 表示“安全环保的材料也要让我感到更舒适的消费者”比例

Figure: The proportion of consumers who think that “safe and environmental-friendly materials should also make them feel comfortable”



数据来源：知萌咨询机构《2023 中国消费趋势报告》，2022 年 12 月针对北京、上海、广州、成都、西安、杭州、武汉、沈阳、青岛、南京等 15 个城市的 18-60 岁消费者进行的在线调查，样本 N=3000。

Data source:

The 2023 China Consumption Trend Report, an online survey of consumers aged 18-60 in 15 cities, including Beijing, Shanghai, Guangzhou, Chengdu, Xi'an, Hangzhou, Wuhan, Shenyang, Qingdao, Nanjing, etc., in December 2022 by Trend. Sample N=3000.

good experience and emotional comfort etc.

Therefore, subtle observation to consumers' new lifestyle, life philosophy and more detailed scenario needs, and discovery of perceptible differentiated value through technological innovation and ultimate product experience have become the successful secrets of "the innovator of mature product categories" and "the definer of new product categories". For example, the Candy La Vie, which focuses on providing products and services for women with large cups, has carried out superlative and refined product innovation, creating bras for different breast shapes and 7-dimensional data measurement method. So far, it covers a full range of products including 60 sizes and 49 exclusive cup types, and obtains 65 national patents in total, helping more women to achieve the freedom to dress as they desire while enhancing the brand's own competitiveness.

Trend III: Purism

"Ingredients first" has become the consumption concept of many people. From the "Cheng Fen Dang (people who pay more attention to the ingredients)" of cosmetics to the "Cai Liao Dang (people who pay more attention to the materials)" of home decoration, consumers in nowadays begin to pay attention to ingredients in the food and beverage field, and find more suitable products through self-learning and personalized needs. Many people even publish their summarized "experience" to major online platforms, such as "Vitamin C in the morning and Retinol at night" is good for skin care, food additives are "dreadful monsters", baby milk with the highest protein content is better, both major ingredients and ingredients of milky tea should be paid attention to … Along with the increasing enthusiasm for element and ingredient research, consumers' attention scenario to safety and health has been greatly expanded. In the same vein, many processes, materials and ingredients have been adopted in different fields, especially those related to consumers' living space. For example, household and decoration, clothing, cosmetics, and food and beverage all have started to focus on ingredients or materials.

Data source: The 2023 China Consumption Trend Report, an online survey of consumers aged 18-60 in 15 cities, including Beijing, Shanghai, Guangzhou, Chengdu, Xi'an, Hangzhou, Wuhan, Shenyang, Qingdao, Nanjing, etc., in December 2022 by Trend. Sample N=3000.

For example, in the market of women's underwear, there are also

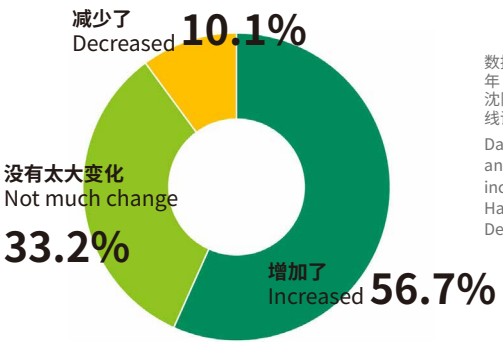
例如，在女性内衣市场，也涌现出了依靠面料触感引领趋势的品牌，有棵树就定位“植物内衣更健康”，以植物健康的形象占领消费者心智，将“植物基”的概念与有棵树环保理念天然契合，与其他内衣品牌形成区隔。健康的消费、味蕾的满足、舒适的体验，都驱动着产品的创新与升级。提供消费者不需要掌握科学知识，也能放心选择的产品，才是优秀企业的标准。

趋势四：国潮新境

从国潮的跨界创新和年轻化，到国风设计创新，国潮已经成为一种消费文化和产品风尚，更代表着中国品牌在设计、文化与科技上的全面跃升，从审美迭代走向新的竞争场域。2022 年，中国消费者对国货的消费热情持续高涨，知萌趋势调研数据显示，在过去一年中，有 56.7% 的消费者表示自己在国货产品的消费上面有增加，各大代际国货消费热情都比较高。

附图 过去一年，您在国货产品上的消费有什么变化?

Figure: How has your consumption of domestic products changed in the past year?



数据来源：知萌咨询机构《2023 中国消费趋势报告》，2022 年 12 月针对北京、上海、广州、成都、西安、杭州、武汉、沈阳、青岛、南京等 15 个城市的 18-60 岁消费者进行的在线调查，样本 N=3000。

Data source: The 2023 China Consumption Trend Report, an online survey of consumers aged 18-60 in 15 cities, including Beijing, Shanghai, Guangzhou, Chengdu, Xi'an, Hangzhou, Wuhan, Shenyang, Qingdao, Nanjing, etc., in December 2022 by Trend. Sample N=3000.

国潮将传统优秀文化与当代先进科技、审美需求碰撞融合创新出新国货、新品牌，国潮今天已经成为一个融合了科技、文化、美学、时尚、生活的集合体，接下来将迎来一个科技创新、技术赋能、国货美学的崛起时代。例如，鸿星尔克洞察消费者对户外产品要求行动便利、安全可靠的需求，采用防风、防水、超轻耐磨的材料，以专业户外科技承载惊鸿而出的创意，应用 100% 可回收的环保型杜邦纸，践行可持续发展理念；鸿星尔克还把家国情怀转化为对传统文化的挖掘与传承，并融入产品研发的经营格局，让自身科技新国货的形象更加饱满；另外，鸿星尔克青年共创设计大赛面向 Z 时代发出邀请，并将年轻设计师们的获奖作品带上品牌大秀，为他们的梦想提供舞台和机会。鸿星尔克以自身对品质和文化的坚守，对社会国家的回馈，做到了中国品牌为国民，中国品牌为中国。

emerging brands that lead the trend relying on the touch of fabrics. YKS, oriented by "healthier plant underwear", attract customers through the brand image of healthy plant product. It integrates its environmental-protection concept with the "plant-based" concept naturally, setting up competition advantage over other underwear brands. Healthy consumption, satisfaction of taste buds and comfortable experience all drive the innovation and upgrading of products. A good company should provide products that consumers can rest assured that choice without mastering scientific knowledge.

Trend IV: China-Chic

From the cross-border innovation and rejuvenation of China-Chic to the innovation of Chinoiserie design, China-Chic has become a consumer culture and product fashion, which represents the overall zooming of Chinese brands in design, culture and technology, and the upgrading from aesthetic iteration to a new competitive field. In 2022, Chinese consumers' enthusiasm for domestic products continued to rise. According to the survey data of Trend, 56.7% of consumers said that they had increased their consumption of domestic products in the past year; And the enthusiasm for consumption of domestic products among major generations was relatively high.

Data source: The 2023 China Consumption Trend Report, an online survey of consumers aged 18-60 in 15 cities, including Beijing, Shanghai, Guangzhou, Chengdu, Xi'an, Hangzhou, Wuhan, Shenyang, Qingdao, Nanjing, etc., in December 2022 by Trend. Sample N=3000.

China-Chic, which combines the splendid traditional culture with the advanced technology and aesthetic needs of the time to create new domestic products and new brands, has become an integration of technology, culture, aesthetics, fashion and life in nowadays, and will usher in an era of scientific and technological innovation, technology empowerment and the rise of domestic products aesthetics. For example, Erke, based on its insight into consumer' demand for convenient, safe and reliable outdoor products, adopts wind-proof, waterproof, ultra-light and wear-resistant materials to realize its creative ideas through professional outdoor technologies. The application of 100% recyclable and environmental-protection DuPont paper is an earnest implementation of the ideal of sustainable development; In addition, the brand also transforms

附图 消费者在日常生活中优先选择绿色、环保产品 / 品牌

Figure: Consumers give priority to green and environmental-friendly products/brands in their daily life

数据来源:知萌咨询机构 2022 年 12 月针对北京、上海、广州、重庆、成都、武汉、南京、郑州、西安、厦门、青岛、沈阳、合肥、太原、昆明 15 个城市 20-60 岁消费者进行的在线调查，N=3000。

Data source: An online survey of consumers aged 20-60 in 15 cities, including Beijing, Shanghai, Guangzhou, Chongqing, Chengdu, Wuhan, Nanjing, Zhengzhou, Xi'an, Xiamen, Qingdao, Shenyang, Hefei, Taiyuan and Kunming, in December 2022 by Trend. Sample N=3000.

趋势五：绿色风尚

近年来，国家积极推动经济社会全面发展绿色转型，在二十大报告中对“绿色”着墨较多。随着政策红利的到来，绿色低碳无疑会成为 2023 年众多行业发展的热点，无论是企业的供给侧，还是消费者的需求侧，都越来越关注绿色、低碳、可持续的行为。知萌趋势调研显示，有 73.8% 的消费者会在日常生活中优先选择绿色、环保的产品或品牌，并且大部分消费者表示接受绿色产品的价格高于普通产品，占比达到 68.9%。

当下，绿色低碳成为共同追求，绿色生活方式渐入人心，企业想要能够长期发展、被消费者认可，实现绿色之美，相融共生势在必行。从推广绿色消费理念，打造绿色供应链和生产链，生产绿色环保产品，再到寻找绿色增长引擎，都将成为企业实现可持续发展的路径之一。例如，海澜之家将用户对健康生活、环保低碳的追求，作为产品的研发动力，通过使用可循环面料生产、采用天然扎染技术等，生产绿色低碳产品，让消费者享受到了绿色健康生活。

趋势六：信任复利

在这样一个信息嘈杂的时代，品牌依然是让消费者获得确定性选择的关键。知萌调研数据显示，78.1% 的消费者在购买时重视品牌，相信知名品牌的力量，接近七成的消费者认为拿不定主意的时候会优先选择品牌知名度高的，六成的消费者认为好的品牌要始终保持活力，持续向消费者传递品牌形象。

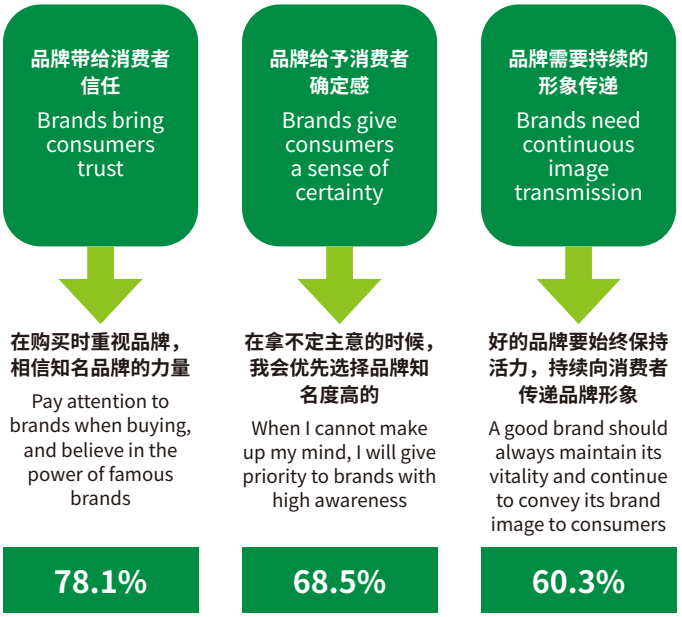
the patriotism into the excavation and inheritance of traditional culture, and integrates the business pattern of product R&D, perfecting its image of technological new domestic products; And the Hongxing Erke Youth Creation Design Competition invited the Generation Z, and brought the award-winning works of young designers to the brand show, offering a stage and opportunity for their dreams. With the adherence to quality and culture and the feedback to the society and the country, Erke has built a well-known national brand with a sense of responsibility for the nation.

Trend V: Green and Environmental-protection

In recent years, the country has actively promoted the integrated development and green transformation of the economy and society. And the Report to the 20th National Congress of the Communist Party of China also pays more attention to "green". Along with the issuing of dividend policy, green and low-carbon will undoubtedly become the focus of the development of many industries in 2023. Both the supply side of enterprises and the demand side of consumers will be increasingly concerned about green, low-carbon and sustainable behaviors. According to the survey of Trend, 73.8% of consumers give priority to green and environmental-friendly products or brands in their daily life, and most consumers think it is reasonable that the price of green products is higher than that of ordinary products, accounting for 68.9%.

附图以下是关于品牌的一些观点，哪些观点是您比较认同的？（多选）

Figure: Here are some views on brands. Which ones do you agree with? (Multiple choice)



数据来源：知萌咨询机构 2022 年 12 月针对北京、上海、广州、西安、成都、南京、厦门、武汉、沈阳、青岛、重庆、昆明、太原、合肥、深圳 15 个城市 18-60 岁消费者进行的在线调查，样本 N=3000。

Data source: An online survey of consumers aged 18-60 years in 15 cities, including Beijing, Shanghai, Guangzhou, Xi’ an, Chengdu, Nanjing, Xiamen, Wuhan, Shenyang, Qingdao, Chongqing, Kunming, Taiyuan, Hefei, and Shenzhen, was conducted by Trend Consulting in December 2022, with the sample N=3000.

随着品牌在生活和社会中的作用不断扩大，人们对品牌的期望也在不断扩展，品牌必须提供可靠的产品和有价值的客户体验，获得信任。并且，唯有持之以恒，真诚积累，才能让信任加固，让品牌力加固，形成更强的护城河。

当消费回暖，营销也将回归本质，当我们经历了人口红利时代，流量红利时代，我们正在进入一个连接心域的时代和价值驱动的时代。唯有匠心的对待产品，对待品牌，对待每一次与消费者的对话和沟通，才能拨得头筹。同时，我们更需要把握新的消费趋势，勇于成为消费趋势的造浪者，不断去创造新的消费需求，才能领先于对手，领先于行业。

At present, green and low-carbon has become a common pursuit, and the green lifestyle has gradually become popular. Therefore, it is imperative for enterprises to implement green production and harmony symbiosis in order to realize long-term development and be recognized by consumers. From promoting the concept of green consumption, building green supply chain and production chain, producing green and environmental-protection products, to finding green growth engines, all will become the ways for enterprises to achieve sustainable development. For example, HLA, taking the consumers' pursuit of healthy life, and environmental-protection and low-carbon as the driving force of product R&D, produces green and low-carbon products through recyclable fabrics and natural tie-dye technology, offering consumers a green and healthy life.

Trend VI: Brand Orientation

In such an information age, brands are still the key for consumers to obtain certain choices. According to the survey data of Trend, 78.1% of consumers pay attention to brands and believe in the power of famous brands when they make a purchase. Nearly 70% of consumers think that they will give priority to those with high brand awareness when they cannot make up their minds. 60% of consumers think that a good brand should always maintain its vitality and continuously convey its brand image to consumers.

As the role of brands in life and society continues to expand, people's expectations of brands also continue to deepen. Brands should provide reliable products and valuable customer experience to gain trust. Moreover, only by perseverance and sincere accumulation, can we realize that trust and brands are strengthened to form a stronger moat.

When consumption recovers, marketing will return to its essence. We are experiencing the era of demographic dividend and data dividend, and now we are entering an era of connecting the heart and an era driven by value. We can stand prominent only by dealing with products, brands, and every conversation and communication with customers with ingenuity. At the same time, we need to grasp the new consumption trend, act bravely to be the wave maker of consumption trends, and constantly create new consumption demand, so as to stay ahead of our competitors and the industry.

面向个人热管理的无源温度调控纺织品

Functional Textiles for Passive Personal Thermal Management

华中科技大学武汉光电国家研究中心和材料科学与工程学院

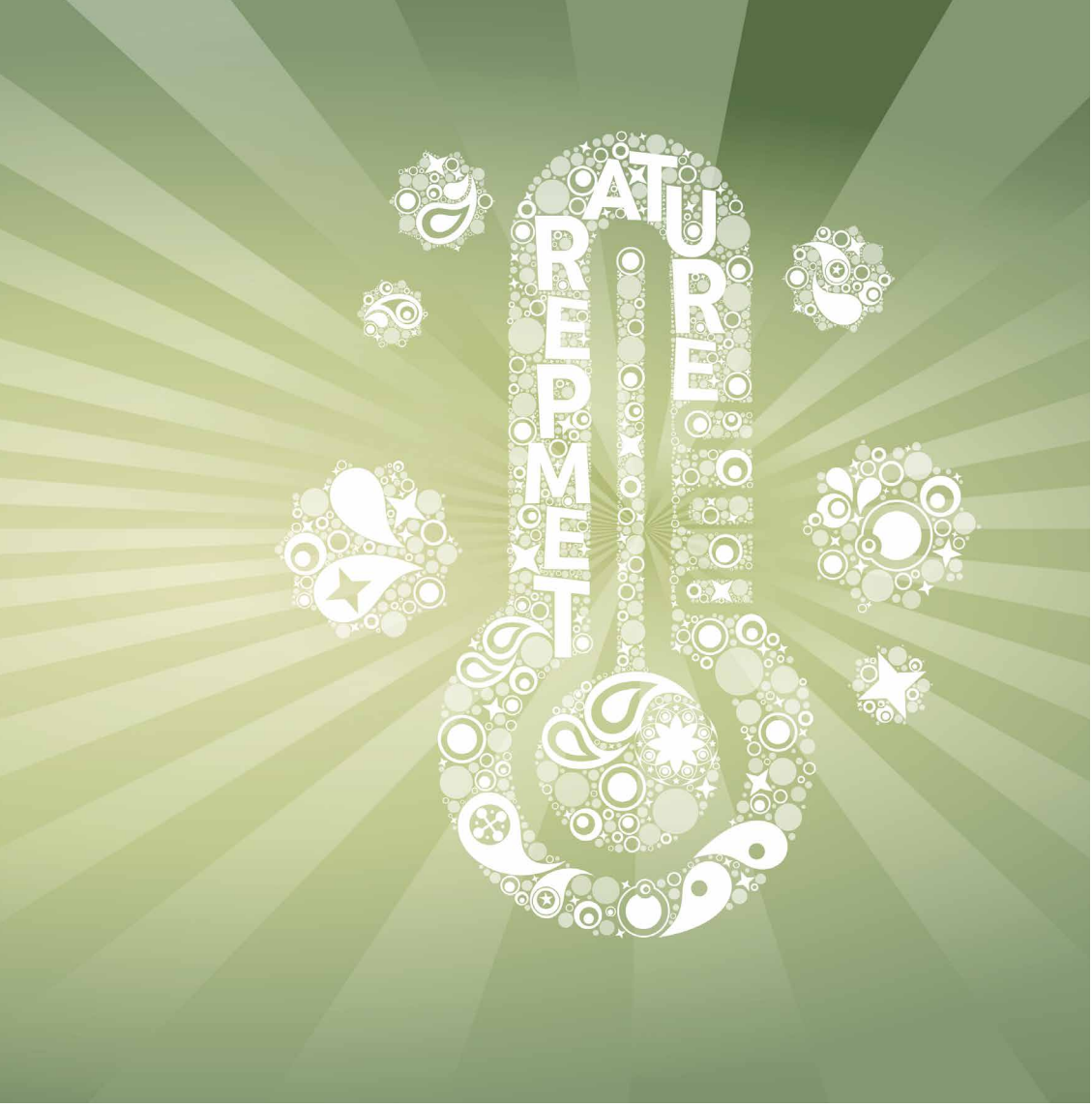
Wuhan National Laboratory for Optoelectronics and School of Materials Science and Engineering,Huazhong University of Science and Technology

吴嘉威、杨麦萍、侯冲、陶光明 *

Wu Jiawei,Yang Maiping,Hou Chong,Tao Guangming*

全球变暖和极端天气正对人类造成日益严重的威胁。2022年6月，罕见的“三重”拉尼娜现象使热浪侵袭了北半球，甚至连北极圈的温度也升至32.5°C。研究显示，由全球气温升高导致的额外死亡率正逐渐上升，相当于高温造成全球每年近50万人死亡[1]。并且在高温高湿的双重作用下，甚至某些地区的极端环境已经突破人类生存极限[2]。除了高温酷暑外，极寒气候的对人类生存的冲击也在逐年增加。美国正在经历20多年来最恶劣的史诗级冬季风暴，这将对超过2亿美国人造成影响。气象学家表示，风暴造成的经济损失“可能会达到数十亿美元”。 因此，全球变暖和极端天气对全球的人类生存和社会经济产生巨大影响[3]。

为什么会产生这么多极端天气?人类活动导致的温室气体排放，是造成全球极端高温强度和频率增加的主要原因。联合国气候科学机构研究[4]，当前大气中的二氧化碳浓度达到200万年以来的最高水平，并且随着全球气温的持续升高，极端天气发生的概率将是目前的14倍。因此，为应对极端天气频发带来的影响，研制具有无源降温功能的新材料技术对世界经济和可持续发展具



Global warming and extreme weather are posing an increasingly serious threat to mankind. In June 2022, the heatwave caused by the rare "triple" La Nina phenomenonattackedthe Northern Hemisphere.The temperature in the Arctic Circle rose strikingly to 32.5°C. Research demonstrates that the extra mortality caused by global temperature rise is gradually increasing, which meansnearly 500,000 global deathsresult fromhigh temperaturesevery year[1]. In addition, under the dual effects of high temperature and high humidity, certainregions' extreme environment has evenexceeded humans' survival ability[2]. Apart fromthe sweltering summer heat, the negative impact of extreme cold climate on human survival is also enhancing year by year.The United States is experiencing the worst epic winter storms in more than 20 years, which will affect over200million Americans. Meteorologists stated that the economic losses caused by the storms "may reach up to billions of dollars." Therefore, global warming and extreme weather have a severeimpact on human survival andthe social economy worldwide[3].

Why doesso much extreme weatheroccur? Greenhouse gas emissions attributed tohuman activities are the dominant reason for the increase in the intensity and frequency of extremely high temperatures around the globe. According to the research of the United Nations climate science institute[4], the current concentration of carbon dioxide in the atmosphere has reached the highest

有战略意义。

纺织品作为人体与外界环境的一道防护屏障，尤其是在户外环境条件下对人体的热舒适具有重要调节作用。1980 年，一个有趣的问题被提出 [5]：在炎热沙漠中的贝都因人为什么会穿着黑色长袍？当暴露在阳光直射的沙漠中，身穿黑色长袍会吸收更多热辐射，而产生更多热量；但长袍与皮肤间较大的温度梯度可增强黑袍下的热对流，使得无论穿黑袍还是白袍的人体温差不大。因此，环境与人体的热量交换会因纺织品颜色、皮肤与织物间的微环境等因素的不同而产生差别。而这种热量交换是包括：热对流、热蒸发、热传导、热辐射的多物理量过程 [6]。通过对传统纺织品的纤维及织物进行结构设计、功能改性，并利用微纳光学、相变材料、气凝胶等可赋予其无源热调控功能，在节能减排和满足个人热舒适方面具有巨大潜力。本文将重点阐述面向个人热管理的温度调控纺织品的机制、研究进展及发展方向。

1、基于光学超材料的无源降温织物

保持室外热舒适需要通过减少热增益和增强热损失来最小化热应力。传统的衣物主要是通过提高蒸发和对流热损失以实现人体降温，但是强烈依赖环境条件的限制。太阳辐射作为户外人体热量的主要来源，其光谱 (AM 1.5 G) 主要分布在 0.3-2.5 μm 的可见光和近红外范围内（功率密度约为 1000 W m^{-2}）。而人类皮肤作为红外发射体，其热辐射主要集中在 7-14 μm 的中红外波段（净辐射功率密度约为 100 W m^{-2}），这与地球大气层的红外透明窗口重叠。因此，人体的热辐射可以直接通过大气窗口进入寒冷的外层空间（3K）进行散热。然而，为什么人们在夏日的户外依然感到非常炎热?最主要的原因是强烈的太阳辐射不断给人体输送热量，而传统服饰并没有对其进行有效的阻挡。基于此，华中科技大学的陶光明教授团队研制了一种基于形态分级的设计理念并利用成熟的工业纤维制造技术生产的光学超材料纤维及织物，可实现 92.4% 的太阳光反射率和 94.5% 的人体红外发射率 [7]。无源降温超材料技术依托于成熟的工业纺织设备可根据实际需求对各参数进行精确调控，实现全流程稳定宏量制备（图 1a-b），满足不同应用场景下的降温需求。超材料织物相较于同色商业面料可降温 5-7 ° C（广州，2020.11.28）（图 1c）。相较于商用白色棉织物，超材料织物可为人体体表降温近 5 ° C（广州，2020.12.7），并在皮肤表面呈现出明显温差（西双版纳，2020.12.13.）（图 1d, e）。相较于无覆盖小车，超材料织物可为汽车模型内部降温超 30 ° C

level in 2 million years.Moreover, with the continuous elevate of global temperature, the probability of extreme weather would be 14 times that of the current situation. Thus, to cope with the negative effects of frequent extreme weather, the research and fabrication of new material technologies with passive cooling functions is of greatsignificance to the world economy and sustainable development.

As a protective barrier between the human body and the external environment, textiles play an important role in adjusting human thermal comfort, especially exposed to outdoor environments. In 1980, an interesting question was raised[5]: Why do Bedouins wear black robes in the scorching desert? When exposed to direct sunlight in the desert, people wearing black robes will absorb more thermal radiation and generate more heat.However, the thermal convection under the black robe could be enhanced by the large temperature gradient between the robe and the skin. As a result, there is a minorgap inthe body temperatureofpeoplewho wear black or white robes.Hence, the heat exchange between the environment and the human body will vary based on parameters such as the color of the fabric and the microclimate between the skin and the fabric.This heat exchangeinvolves many physical processes, including thermal convection, evaporation, conduction, and radiation[6]. The passive thermoregulation function can be realized through structural design and functional modification of traditional fibers or fabric materials, which has great potential in energy conservation, emission reduction, and personal thermal comfort. This paper will focus on the mechanism, research progress, and development trends of functionalfabrics for personal thermal management.

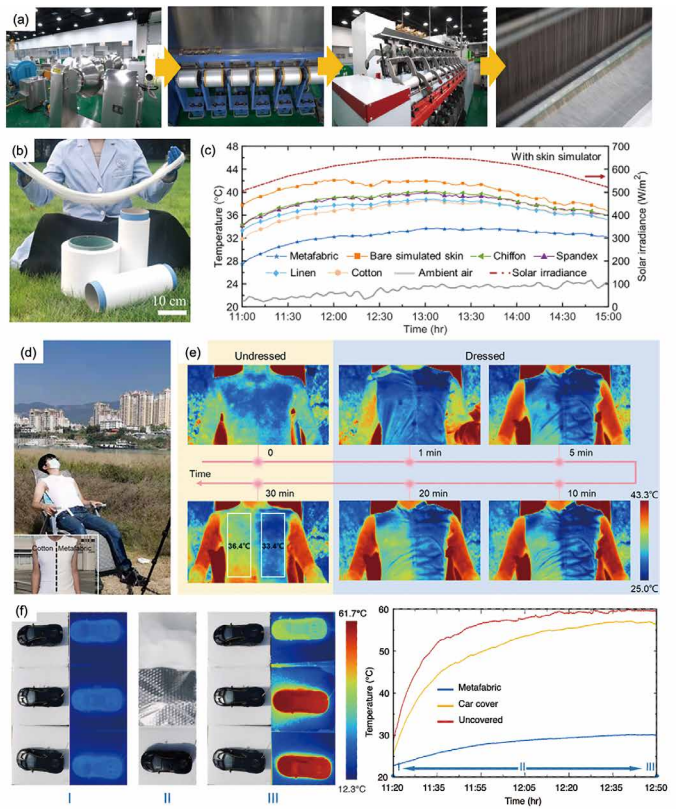
1. Passive cooling opticalmetafabric

Maintaining thermal comfort outdoors demands minimizing thermal stress by decreasing thermal gain and maximizing heat loss. Traditional clothing reduces body temperature primarily by enhancing evaporation and convection heat loss.However, this approach depends heavily on external conditions. Solar radiation serves as the majorheat source forhumansoutdoors.Its spectrum (AM 1.5 G) is mainly distributed within the range of visible light and near-infrared light of 0.3-2.5 μm (the power density is about 1000 W m^{-2}).Human skin is an infrared emitter, and its thermal radiation is mostly concentrated in the mid-infrared band of 7-14 μm (Net radiant power density: 100 W m^{-2}), which overlaps with

（广州，2020.12.7）（图 1f）。目前该技术已经实现了在年产万吨级的产线上的稳定生产，并入选 2021 年度“中国科学十大进展”的 30 项候选进展、2021 中国光学十大进展以及 2021 中国光学领域十大社会影响力事件等，得到学术和产业界的广泛关注与高度评价。相关成果还受到人民日报、新华社、Science News、科技日报、湖北电视台等国内外媒体的广泛报道，并被 Science 封面文字推荐。在该技术的论文审稿期间获得了 Science 期刊审稿人的高度认可，认为“超材料织物降温效果好，实验结果令人印象深刻，此工作将对个人热管理和其他相关应用领域产生巨大影响”。

图 1 无源降温超材料织物技术。(a) 无源降温光学超材料织物制造产线图；(b) 超材料纤维照片；（c）对比商用织物降温性能测试；（d）人体体表降温测试照片；（e）人体体表降温对比测试红外图；（f）小车模拟降温测试。

Figure 1 The passive cooling metafabrics. (a) The manufacturing production-line diagram of passive cooling optical metafabrics; (b) Photos of fibers; (c) The cooling performance test compared with commercial fabrics; (d) Photos of human body surface cooling test; (e) Infrared image of the contrast test of human body surface cooling; (f) Simulated cooling test of cars.



theatmospheric transparent spectral window. Therefore, the thermal radiation of the human body can directly enter the cold outer space (3K) through the atmospheric window to dissipate heat. However, why do people still feel extremely hot outdoors in summer?The principalcause is that the strong solar radiation continuously delivers heat to the human body, but conventional clothing is incapable of blocking it adequately. Therefore, Professor Tao's groupfrom Huazhong University of Science and Technology developed ametafabric based on the design concept of hierarchical-morphology structure, which can realize high emissivity (94.5%) in the atmospheric window and reflectivity (92.4%) in the solar spectrum[7]. The metafabricsrely on industrial textile equipment whose parameters can be precisely modified and controlled, allowing the whole process of large-scale preparation to be carried out steadily (Figure 1a-b).The metafabrics can realize cooling by 5-7°C compared with the commercial fabric with the same color (Guangzhou, 2020.11.28) (Figure 1c). Compared with commercial white cotton fabrics, metafabrics can cool the human body surface by nearly 5°C (Guangzhou, 2020.12.7) and present a significant temperature difference on the skin surface (Sipsongpanna, 2020.12.13.) (Figure 1d, e).Compared with the uncovered car, the metafabrics can cool the interior of the car model by more than 30°C (Guangzhou, 2020.12.7) (Figure 1f). At present, the technology has achieved stable production on the production line with an annual output of 10,000 tons and has been selected as the Candidate Projects of China Issues Top 10 Scientific Advances of 2021, 2021 Award for China's Top 10 Optical Breakthroughs, Top 10 Social Impact Events in China's Optics Field in 2021, which have received extensive attention and high evaluation from the academic and industrial fields.Relevant achievements have also been widely reported by domestic and foreign media such as the People's Daily, Xinhua News, Science News, Science and Technology Daily, and recommended by the cover text of Science. During the paper review, this technology was highly recognized by the reviewers of Science, who considered that "The fabric is beautifully-made, the cooling effect is well-presented, and the large scale demonstration is very impressive. I believe this metafabric will generate great impact on personal thermal management and other related application areas.".

2、无源保暖织物

寒冷环境中维持恒定的体温对人们生命健康极其重要，尤其是在无法持续提供能源的户外场景。尽管具有低热传导的气凝胶织物以及低热辐射的复合织物可实现对人体散热途径的有效限制，但单一的热调控方式难以满足人体在复杂的户外寒冷环境中的无源保暖需求。基于此，华中科技大学陶光明教授团队通过构筑兼具低热传导和低热辐射特性的多材料气凝胶复合织物结构，实现在寒冷环境下优异的无源保暖功能[8]。如图 2a-c 所示，通过同轴纺丝工艺连续化制备的柔性气凝胶复合纤维表现出明显的芯包结构，在微观上显示出横跨微米级与纳米级的孔隙结构，并具有优异的柔性和机械强度。通过在复合纤维织物表面集成纳米银，所制备的多材料气凝胶复合织物表现出低红外发射率与低导热率，可有效阻挡人体热辐射散失。人体测试结果表明，多材料气凝胶复合织物可以显著提高人体皮肤温度 5.7 °C（图 2d, e）。

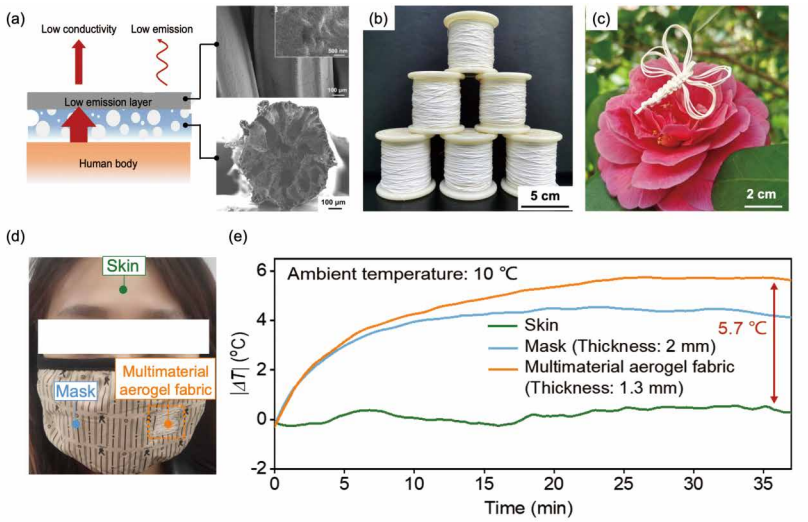
3、无源温度调控智能织物

由于极端天气频发，我国西北部分地区常出现“一日过两季”的现象，而人们日常衣物穿着难以满足日夜温差太大带来的热舒适性调控需求。此外，目前已报道的温度调控织物还存在体积大、质量重、成本高等缺点，且不能简单易行地同时实现保暖和降温功能。基于此，华中科技大学陶光明教授团队，利用纤维内部微结构调控和材料复合技术，并结合成熟稳定的织造工艺研制柔性可穿戴无源温度调控织物[9]（图 3a, b）。利用纤维内部相变材料的吸收、储存和释放热的特性，可显著缓冲环境温度升高或降低对人体的影响（图 3c）。如图 3d, f 所示，当内嵌温度调控织物的手套分别进入 10 和 50° C 的环境中，相变材料可从皮肤 - 织物微环境中吸收 / 释放热量，冷却 / 加热织物覆盖的皮肤，且具有良好的循环稳定性。该成果于 2020 年 4 月被美国化学学会以及美国物理学家组织网（Phys.org）进行了题为“New textile could keep you cool in the heat, warm in the cold”的亮点报道。

具有无源温度调控功能的新兴纺织品由于其优异的热舒适性、

图 2 无源保暖织物技术。（a）多材料气凝胶复合织物保暖原理及纤维微观 SEM 图；（b, c）气凝胶复合纤维实物图；（e, f）人体保暖性能测试。

Figure 2 The passive thermal insulation fabric. (a) The thermal insulation principle of the multimaterial aerogel composite fabrics and the SEM imagesof the multimaterial aerogel composite fiber; (b, c) The photo of the aerogel composite fiber; (e, f) The human thermal insulation performance test.



2. Passive thermal insulation fabrics

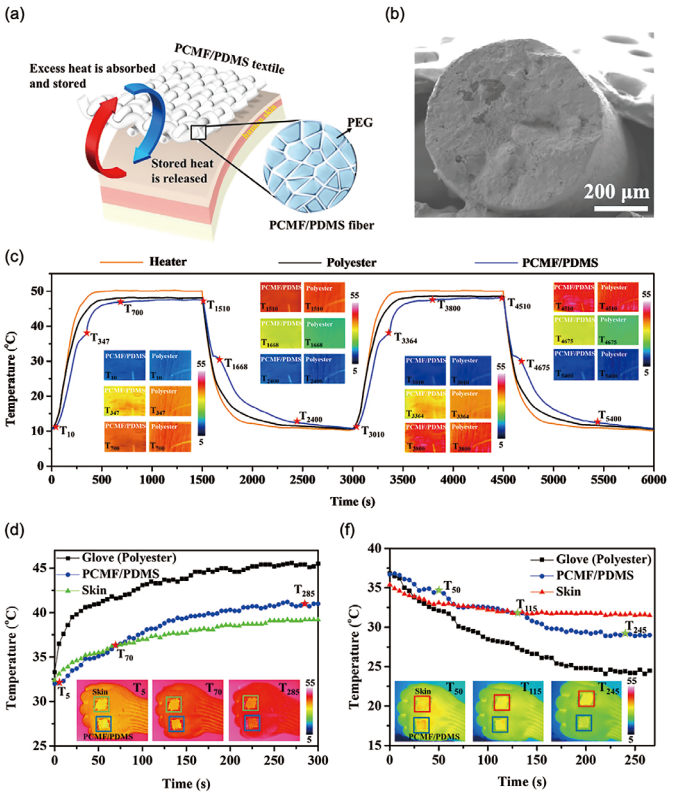
The maintenance of a constant body temperature in a cold environment is extremely important for people's life and health, especially in outdoor scenes where energy cannot be continuously available. Although aerogel fabrics with low thermal conductivity and composite fabrics with low thermal radiation can effectively limit the heat dissipation of the human body, it is difficult to meet the passive thermalrequirements of the human body in a complex cold environmentoutdoors with one thermal management method.Professor Tao'sgroupfabricated a multimaterial aerogel composite fabric structure with low thermal conductivity and low thermal radiation characteristics, achievingoutstanding passive thermal insulation ina cold environment [8]. As shown in Figure 2a-c, the flexible aerogel composite fiber prepared continuously usingcoaxial spinning technology shows the obvious core-sheath structure and pore structures across the micron and nanoscale microscopically as exhibithigh flexibility and mechanical strength.By integrating the nanosilver on the surface of the composite fabrics, the prepared multimaterial aerogel composite fabrics exhibit low infrared emissivity and low thermal conductivity, and can effectively limit heat radiation loss in the human body. The human test results demonstrated that the multimaterial aerogel composite fabrics could significantly increase the human skin temperature by 5.7°C (Figure 2d, e).

3. Intelligent passive thermoregulation fabrics

Attributed to the frequent occurrence of extreme weather, the phenomenon of "two seasons in one day" oftenappears in partof northwest China.People's daily clothing is inadequate tocope withthermal comfortmanagement demands caused by the large temperature difference between

图 3 无源温度调控智能织物。（a）无源温度调控智能织物工作机理；（b）纤维 SEM 截面图；（c）循环稳定性能测试；高温（d）和低温（e）环境的温度调控性能测试。

Figure 3 Intelligent passive thermoregulation fabrics. (a) The working mechanism of the intelligent passive thermoregulation fabrics; (b) SEM cross-sectional view of the fiber; (c) Cyclic stability performance test; Thermoregulation performance test at high (d) and low (e) temperatures.



可穿戴性及可定制性，已成为了学术研究的新高地 [10-13]，对传统纺织工业的革新发展和新型智能织物的研究创新具有重要启示。然而，温度调控纺织品在拓宽应用端时仍存在诸多挑战，亟待通过纺织、材料、光学、热学及机械等多学科交叉协同发展。在未来，无源温度调控纺织品通过与数字孪生技术和柔性电子器件集成，有望实现具有无源热舒适调节、感知交互、热电自供能等多种功能耦合的新一代纺织品，更好地契合多元化运动需求和智能化医疗服务，打造虚拟与现实结合的无感交互和智能管理。

day and night. In addition, the current thermoregulation fabrics still have a lot of defects such as huge volume, heavy weight, and high cost, and fail tokeep warm and cool simultaneously via a simple and feasible method.Based on this, Professor Tao's group developed flexible wearable passive thermoregulation fabricsthrough the internal microstructure control of fibers and composite material technology in combination with theindustrialized weaving process[9] (Figure 3a, b). The impact of variable ambient temperatureon the human bodycan be mitigated through the heat absorption, storage and release of the phase-change materials in fibers (Figure 3c).As shown in Figures 3d, f, when the gloves embedded with the thermoregulation fabrics enter the environment of 10°C and 50°C respectively, the phase-change materials can absorb or release heat from the skin-fabric microenvironment to cool or heat the fabric-covered skin with well-recycling stability. In April 2020, the American Chemical Society and Phys.org released a highlight report for this outcome entitled "New textile could keep you cool in the heat, warm in the cold".

Due to their excellent thermal comfortability, wearability, and customizability, emerging fabrics with passive thermoregulation functions have become the presenthotspotin research. This has inspired the innovation of the traditional textile industry as well as the research of novel intelligent fabrics.However, there still existed amounts of obstacles for thermoregulation fabrics during the extension of the application layer, whichwould be addressed via interdisciplinary research in textiles, materials, optics, thermology, and mechanics. In the future, a new generation of fabrics with multiple functional couplings such as passive thermal comfort regulation, sensory interaction, and thermoelectric self-energy supply would be developed, which is attributed to the integration of passive thermoregulation fabrics with digital twin technology and flexible electronics. Thiswill better conform with the diversified sports requirements and intelligent medical services, and create a sensorless interaction and intelligent management combining virtuality and reality.

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企业绿色循环行动要点：案例、策略与启示

Key Points of Enterprise Circular Action: Cases, Strategies and Enlightenment

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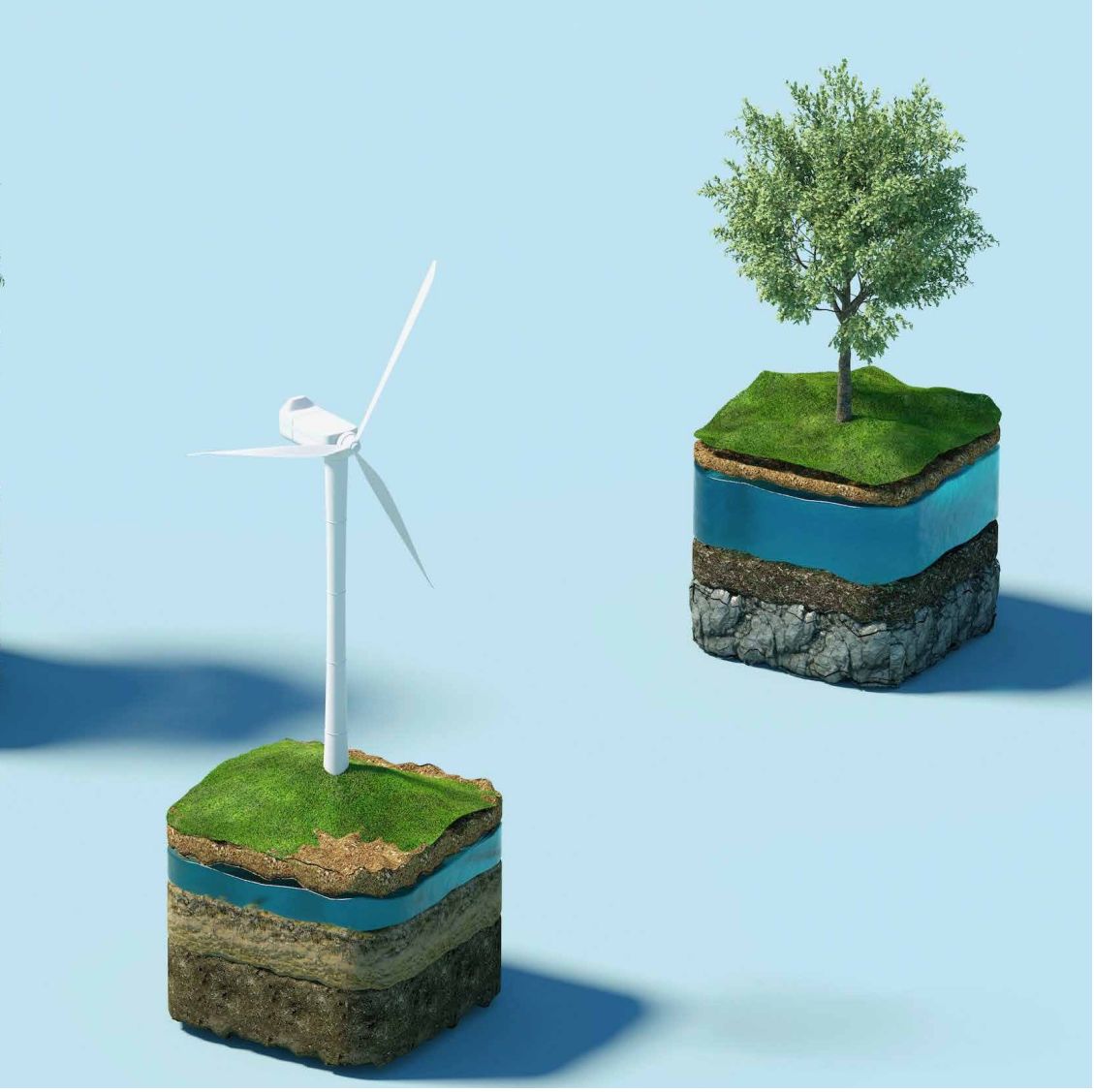
中国经济社会发展从“高增长”向“高质量”转变，从资源消耗型向绿色、低碳、循环经济发展型转变。

大力发展绿色低碳经济，提高行业透明度已成为共识，化纤行业也不可避免地被纳入其中。消费者日益增长的可持续意识正在引领整个价值链走向低碳足迹、绿色设计思维和循环经济，品牌商已经意识到低碳循环的重要性，并引入了不同的绿色举措。

化纤行业具有低碳发展的内生动力和能力。行业深入贯彻绿色发展理念，企业积极开展绿色低碳相关工作。化纤行业集约度较高，4 家企业进入世界 500 强，化纤行业上市公司超过 30 家，整体技术、资金和装备实力处于全球领先水平，具备开展低碳研究、绿色创新的能力。许多龙头企业和品牌方已经在推进减碳工作，部分企业提出了减碳目标，或推出了可循环、可再生的绿色纤维。

图片来源：COP26
Image credit: COP26



China's economic and social development has shifted from "high growth" to "high quality", and from resource-consuming to green, low-carbon and circular economic development.

It has become a consensus to vigorously develop green and low-carbon economy and improve the transparency of the industry. Chemical fiber industry is inevitably included in it. The growing awareness of sustainability among consumers is leading the entire value chain towards a low carbon footprint, green design thinking and circular economy, and brands have realized the importance of close-loop and introduced various green initiatives.

Chemical fiber industry has the endogenous power and the ability to develop low-carbon economy. The industry thoroughly implements the concept of green development, and enterprises actively carry out green and low-carbon actions. All chemical fiber enterprises are above the designated size, and most of the leading enterprises are among the Global 500 or China 500. Their overall technical, financial and equipment competitiveness is at the global leading level, and they could carry out low-carbon research and green innovation. Many leading enterprises and brands have been promoting carbon reduction. Some enterprises have proposed carbon reduction goals or introduced recyclable and renewable green fibers.

Chemical fiber industry is at the stage of connecting the preceding and the following link of

化纤行业在产品的价值链中，处在一个承上启下的位置，上连石油化工行业，下接纺织行业，是纺织产业链稳定发展和持续创新的核心支撑产业，化纤行业的绿色低碳发展进程，决定了纺织行业原料绿色化水平，也将推动产业链上下游低碳、循环绿色发展，对整个纺织行业产生重要影响。

本文以化纤纺织行业产业链的循环经济为主，简要阐述循环经济的概念，并着眼于市场中的关键绿色循环举措，最后阐述制造商、品牌应如何支持并加速向可循环转型，引领行业迈向低碳、循环经济。

将循环经济原则引入产品价值链

基于减排的要求，绿色发展引起了全世界的关注，全球各行业都在向绿色、低碳、循环经济过渡。新冠疫情也让消费者更意识到每日制造的垃圾废物。在后疫情时代，我们需要引入循环再利用的思维模式。

世界经济论坛预计，如果各企业积极创建循环供应链，那么到 2025 年，这将为全球经济创造 1 万亿美元的收益，而且未来 5 年将产生十万个新的工作岗位。

有专家提出，循环经济来自两个相互关联的理念，即闭环经济和“设计到重新设计”思维，它涵盖了在生产、分销和消费过程中引入的 3R 原则，即减少废料、重复利用和回收循环（Reduce, Reuse & Recycle）的所有活动。在循环经济中，其重新设计制造和回收服务系统的概念应侧重于从这种重新设计中获得价值，而不仅仅是提高资源利用率。

根据 Ellen McArthur 基金会的说法，循环在产品价值链中的运作方式可以通过系统性设计来实现产品的再生性和恢复性，因为这种方式基于三个核心原则：为实现零废弃物和零碳足迹而设计、保持产品与材料的持续利用以及使自然系统再生。

“再生性”较好理解，通过循环使用高质量产品、组件和材料，可以优化资源利用，同时减少成本。此外还应关注的是“恢复性”，循环经济不应仅关注预防、减少污染，它同时应起到通过更好的系统设计来修复、缓解之前的环境损害。其最终目标是实现经济增长与自然资源枯竭和环境退化的脱钩，实现材料价值的最大化，最终目标是消灭浪费，达到循环供给，从而实现经济、环境和社会的可持续发展。

循环经济下的创新产品与商业模式

从“制造、使用、丢弃”式的线性经济到循环经济的转型并不容易，但许多企业认为这是必经之路，并在设计、研发、制造工艺及商业模式上取得突破，实现从纤维原料、纺织品、成衣、转售服务到回收废弃物的循环性。

product value chain. It connects the petrochemical industry and the textile industry. As the main raw materials of the textile industry, the green and low-carbon development process of the chemical fiber industry determines the green level of the raw materials of the textile industry, and will also promote the low-carbon and circular development of the upstream and downstream of the industrial value chain, which has an important impact on the entire textile industry.

This article focuses on the circular economy of the chemical fiber and textile industry chain, briefly describes the concept of circular economy.By focusing on the green initiatives in the market, the article elaborates the actions points for manufactures and brands who expect to turn to a low-carbon, circular economy.

Introducing the principle of circular economy into the product value chain

All industries around the world are transitioning to circular economy. It is estimated that 90 percent of the raw materials used in manufacturing are discarded before they become products. 80 percent of products are discarded within six months after purchased. The COVID-19 pandemic has made consumers more aware of the waste that is daily produced. In the post-pandemic era, we need to introduce a circular mindset.

According to The World Economic Forum, if companies actively create circular supply chains, it could add $1 trillion to the global economy by 2025 and create 100,000 new jobs over the next five years.

Some experts have proposed that circular economy comes from two interrelated ideas, namely, closed-loop economy and "design to redesign" thinking, which covers all activities of the three R principles (Reduce, Reuse and Recycle) introduced in the production, distribution and consumption processes. In a circular economy, the concept of redesigning manufacturing and recycling service systems should focus on deriving value from the redesign process, rather than just improving resource utilization.

Ellen McArthur Foundation has pointed that the way recycling operates in the product value chain can be systematically designed to achieve product regeneration and restorative because it is based on three core principles: designing for zero waste and zero carbon footprint, maintaining sustainable use of products and materials, and regenerating natural systems.

The term "regenerative" is better understood as optimizing resource utilization while reducing costs through recycling high-quality products, components, and materials. In addition, " restorative " should also be paid attention to. Circular economy should not only focus on preventing and reducing pollution, but also repair and mitigate previous environmental damage through better systematic design. Its ultimate goal is to decouple economic growth from depletion of natural resources and environmental degradation, maximize the value of materials, eliminate waste and achieve circular supply, so as to achieve sustainable development of economy, environment and society.

Innovative products and business models under circular economy

It is not easy to transform from a "take - make - discard " linear economy to a circular economy, but many companies see it as a necessary step and are making breakthroughs in design, research and development, manufacturing processes, and business models to achieve recycling from raw fiber, textiles, clothing, resale services, and waste recycling.

循环再生纤维是行业的重大突破之一。越来越多的零售商和品牌正在转向由废弃塑料瓶、废旧纺织品制成的再生聚酯。通过建立聚酯的循环体系，可以更好的利用大量废弃的塑料瓶、该材质衣物和纺织品废料，减少 30-50%的能源投入，减少石油开采和二氧化碳排放。

服装中使用的大部分再生聚酯来自回收的塑料瓶。该技术成熟度高，生产的再生聚酯性能和质量与原生聚酯一致。这些塑料瓶经过分类、机械切碎，然后转化为可再熔融的 rPET 颗粒，并制成新纤维。

但该方法也存在一定的缺点，它并不会减少化纤行业中的的塑料服装废料。再生聚酯每次加热和再加工都会降解，因此不能无限期使用。

美国生产商 Unifi 估计其销售额的 35% 来自 REPREVE 涤纶长丝、短纤维和填充纤维。其他受欢迎的品牌纤维包括中国盛虹生产的再生聚酯纤维 REBORN（芮邦），福建赛隆科技生产的 Cyclone 再生聚酯。中国的研发生产商 RECYCTEX 也在再生聚酯运动及时装面料方面不断进行创新。

另一种途径是通过化学回收法回收含有聚酯纤维的废旧纺织品。当下需解决的问题是混纺的面料，例如涤棉等纺织品。纺织品的化学回收当下还处于起步阶段，混合材质的分拣是需要解决的首要难题，尽管当下已有纺织品成分分拣设备，但并没有大规模应用。额外的生产步骤和化学品应用会提升所得纱线和纤维的价格。但当该技术大规模应用后将有无限潜力，可以解决从源头上解决行业的服装废料问题。

Worn Again Technologies 和总部位于加州的初创公司 Ambercycle 都应用合成生物学来开发化学回收技术。Ambercycle 的 Cycora®，使用微生物将废塑料转化为 100% 可再生聚酯纱线。 H&M 集团与 Worn Again Technologies 合作，投资 710 万英镑扩大从纺织品和塑料中提取 PET 聚合物和纤维素，并向香港纺织服装研究发展中心（HKRITA）注资，共同开发两种成套涤棉回收系统。一种是绿色机器（Green Machine），使用水、高温和绿色化学品通过水热法分离纤维。姊妹品牌 Monki 的针织胶囊系列引领了这一结果。目前，纤维加工能力仅为每天 100 公斤（每年 3 吨），但计划将进一步扩大。

图片来源：阿迪达斯

mage credit: Adidas

Recycled fiber is one of the major green initiatives in the industry. A growing number of retailers and brands are turning to recycled polyester made from discarded PET bottles and textiles. By creating polyester recycling system, it can make better use of the vast amount of waste PET bottles, clothing and textiles. It is estimated to reduce energy input by 30-50%, reduce oil extraction and CO2 emissions.

Most of the recycled polyester used in clothing comes from recycled PET bottles. The technology is highly mature, and the features and quality of the recycled polyester produced are consistent with those of virgin polyester. These PET bottles are sorted, mechanically shredded, and then converted into rPET pellets and pultruded into new fibers.

However, this method has certain disadvantages, and it cannot reduce plastic usage in clothing manufacture. Recycled polyester is supposed to degrade every time when heated and reprocessed, so it cannot be used indefinitely.

US producer Unifi estimates that 35% of its sales come from REPREVE polyester filament, staple and fill fibers. Other popular recycled polyester fibers include REBORN, a recycled polyester fiber produced by Chinese manufacture Sheng Hong, and Cyclone, a recycled polyester produced by Fujian Cyclone Technology. China's research and development manufacturer RECYCTEX is also constantly innovating in sports and fashion fabrics made with recycled polyester.

Another way is to recycle waste textiles containing polyester fibers through chemical recycling. The current problem to be solved is blended fabrics, such as polyester-cotton and other textiles. The chemical recycling of textiles is still in its infancy, and the sorting of mixed materials is the primary problem that needs to be solved. Although there are textile sorting equipment, it has not been applied on a large scale. Additional production steps and application of chemicals increase the price of the recycled yarn and fiber. However, when the technology is applied on a large scale, it will have unlimited potential and can solve the problem of waste clothing originally.

Both Worn Again Technologies and California-based startup Ambercycle have applied synthetic biology to develop chemical recycling technologies. Ambercycle's Cycora®, which uses microbes to convert waste plastic into 100% renewable polyester yarn. H&M Group cooperated with Worn Again Technologies to invest 7.1 million pounds to expand the extraction of PET polymer and cellulose from textiles and plastics, and invested into The Hong Kong Research Institute of Textiles and Apparel (HKRITA) to jointly develop two polyester-cotton recycling systems. One is the Green Machine, which separates fibers by hydrothermal method using water, high temperature and green chemicals. The result have been applied in a knit capsule collection of Monki. Though currently, fiber processing capacity is only 100 kg per day (3 tons per year), but further expansion is planned.

French company Carbios has engineered enzymes to break down PET into purified terephthalic acid (PTA) and ethylene glycol. China's Ningbo Dafa and Fujian Cyclone also produce recycled polyester fibers from waste textiles.

Marine waste is another urgent issue. ECONYL® made textiles with recycled fishing nets, carpets and nylon waste. Japan's Toray recently announced that it will sell chemically regenerated nylon 6 fiber made from recycled fishing nets in Japan. Adidas Futurecraft 3D shoes use recycled ocean plastic to make the upper, and use recycled polyester and fishing nets as materials, and use 3D printing technology to make the interlayer of the sole.

Food waste is also a growing concern for consumers, and with it come materials and fabrics

图片来源：Piñatex ®（左） Cocona®（中） Bananatex®（右）
Image credit:Piñatex® (left) Cocona® (middle) Bananatex® (right)

法国公司 Carbios 通过工程酶将 PET 分解为纯化的对苯二甲酸 (PTA) 和乙二醇。中国的宁波大发和福建赛龙也有利用废旧纺织品生产的再生聚酯纤维。

海洋垃圾是另一个亟待解决的问题。ECONYL® 将回收渔网与地毯和尼龙垃圾编织在一起，日本东丽也于近日宣布将在日本销售回收渔网制造的化学再生尼龙 6 纤维产品。Adidas Futurecraft 3D 鞋则用再生海洋塑料制成鞋面，并以再生涤纶和渔网作为材料，用 3D 打印技术制造鞋底的夹层。

食物浪费也越来越引起消费者的关注，用废弃的食物制成的材料和织物也随之而来。例如 Piñatex ®（一种由菠萝叶纤维制成的耐用类皮革织物）、Cocona®（一种由椰子皮和果肉制成的类棉织物）和 Bananatex® (一种由香蕉茎制成的强力纤维).

再生纤维减碳贡献明显。与原生纤维相比，再生纤维生产过程中仅有熔融纺丝过程，减少了聚合过程，所以相同产量情况下再生聚酯企业碳排放总量更低，具有减碳贡献。此外，再生化纤有助于降低石化行业碳排放。以量大面广的再生聚酯为例，再生聚酯的大范围使用减少了化纤行业对精对苯二甲酸和乙二醇的消耗量，减少了从原油到精对苯二甲酸和乙二醇整个产业链的碳排放。

愈来越多的下游的品牌商也在拥抱循环经济的大趋势。

The North Face 在 2021 年 4 月 22 日的世界地球日上宣布了一项承诺，到 2025 年，该公司的顶级材料将只使用可回收、再生或可更新资源。为了实现这一的目标，该品牌将会结合三项举措：免费维修服务、衣物回收计划 Clothes the Loop 以及转售平台 North Face Renewed。

当然，很多品牌都已经提供维修服务，从 Arc'teryx 的维修、干洗服务中心，到 Uniqlo 在其 Soho 旗舰店开设了一家维修工作室，顾客可以在这里修补破洞、更换纽扣和拉链以及修补破缝，价格低至 5 美元，在延长产品寿命的同时，又创造出额外的收入来源。

品牌可以进一步将维修、手工艺和 DIY 相结合，提供一种“重新设计的服务”。展望未来，这可能会促使零售商与艺术家和制造商合作，重新创造旧的衣服和旧家具，并且也不会刻意掩盖维修痕迹，从而将其打造成独一无二的艺术品、时尚及室内装饰品。

这些举措体现企业的社会责任感以及转向循环经济的决心。

made from spoiled, discarded food. Examples include Pinatex ® (a durable leather-like fabric made from pineapple leaf fiber), Cocona ® (a cotton-like fabric made from coconut peel and pulp), and Bananatex® (a strong fiber made from banana stems).

Recycled fiber contributes to carbon reduction significantly. Compared with virgin fiber, there is only a melt spinning process in the production process of recycled fiber, which reduces the polymerization process. Therefore, the total carbon emission of recycled polyester enterprises is lower under the condition of the same output, which has the contribution of carbon reduction. In addition, recycled fiber helps reduce carbon emissions from the petrochemical industry. As an example, the extensive use of recycled polyester reduces the consumption of refined terephthalic acid and ethylene glycol in the chemical fiber industry, and reduces the carbon emissions of the whole industrial chain from crude oil to refined terephthalic acid and ethylene glycol.

More and more downstream brands are embracing the trend of circular economy.

On Earth Day, April 22, 2021, The North Face announced a commitment to use only recycled, renewable or renewable resources for the company's top materials by 2025. To achieve this ambitious goal, the brand will combine three initiatives: a free repair service, clothing recycling program Clothes the Loop, and resale platform North Face Renewed.

Many brands already offer repair services, from Arc'teryx's repair and dry cleaning service center to Uniqlo's repair studio in its flagship Soho store, where customers can repair holes, change buttons and zippers, and repair cracks for as little as $5, extending the life of the product. It creates an additional source of income.

Brands can further combine repair, handcrafts and DIY to provide a "redesigned service". In the future, this could lead to retailers working with artists and manufacturers to recreate old clothes and furniture, without the need to cover up repairs, into unique pieces of art, fashion and interior decoration.

These measures reflect the enterprises' social responsibility and determination to shift to a circular economy.

Enhance the transparency of the industrial value chain

Consumers often have a "black box of trust" due to their little knowledge about the entire process from production to recycling. If circularity becomes a key direction for manufacturers, brands, R&D and marketing, traceability will also become an important factor to enhance consumers' trust and loyalty. And simply listing suppliers on the websites no longer meets consumers' demand. Consumers need more truthful and transparent information, from suppliers, trading, production, inspection, source of materials to transportation, sale, resale, etc., so that fashion brands and retailers can take social and sustainable responsibilities and force an intelligent upgrade of the industrial value chain.

Enterprises are changing in accordance with consumers' behavior and expectations change, which will increase the profitability. According to the World Economic Forum, transparency in supply chains can not only reduce carbon emissions by up to 22%, but also increase revenues by 15% while reducing costs by 9-16%. By monitoring procurement and production processes, and digitizing transactions while collecting data, brands can identify specific parts of the supply chain that need improvement. It also allows brands to take care of every step of the production process, from raw

提升产业链的透明度

由于对产品从生产到回收再利用的整个过程知之甚少，消费者往往有一个“信任的黑匣子”。绿色循环若是成为制造商、品牌研发、营销的关键方向，那么可追溯性也将成为提高消费者信任和忠诚度的重要因素。而仅仅在网站上列出供应商已经不能满足消费者的需求。消费者需要更真实和透明的信息，从供应商、交易、生产、检验、材料来源到运输、售卖、转售等等，以便时尚品牌和零售商能够承担社会和可持续责任，并迫使产业链的向智能化升级。

企业随着消费者行为和期望的转变，也会提高企业的盈利能力。世界经济论坛指出，供应链公开透明不仅能减少高达 22% 的碳排放，还能在成本降低 9-16% 的同时，收入提高 15%。通过对采购和生产过程的监控，以及在数据收集的同时实现交易数字化，品牌能识别出供应链中需要改进的具体环节。还能让品牌直接并且更高效地顾及到从原料到上架整个生产过程的每一步。

现有的可追溯技术包括射频识别（RFID）、分子标记和区块链技术，帮助企业跟踪供应链、验证产品以及收集并共享数据。

Applied DNA Sciences（ADNAS）应用永久标记的分子标识符来追踪聚酯，通过与印度集团 Reliance Industries Ltd（RIL）合作，ADNAS 的 CertainT® 平台可追踪 RIL 的 R-Elan rPET GreenGold 聚酯。

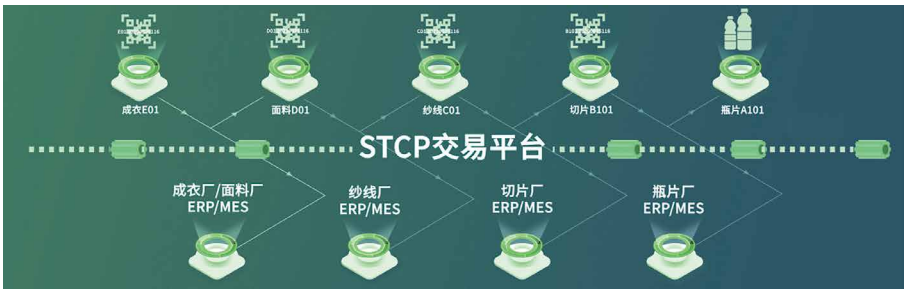
可跟踪解决方案提供商 Eon 于近期推出全球合作伙伴网络，旨在简化供应链循环，其合作伙伴包括 Renewal Workshop、Evrnu、Worn Again 与 Trove，以及 H&M Group、Target、PVH Corp 和 C&A Foundation 等品牌，以上皆为通过再利用和回收来提升服装价值的重要参与者。Eon 的 CircularID Protocol 可追溯性工具创建了一条数字产销监管链，可在服装和纺织产品使用寿命终止时，提醒回收商和企业，以便他们进行干预。

绿色纤维制品可信平台发（STCP）由中国化学纤维工业协会（CCFA）和国家先进功能纤维创新中心（NAFFIC）运营，旨在跟踪绿色产品在其整个生命周期中的流通，并将生态系统中的所有利益相关者联系起来，实现生产数据、仓储数据、物流数据、交易数据的可信上链，最终实现从采购、原料入出、生产消耗、丝饼、箱、成品入出、发票、绿色认证的数据透明上链，主动实现化纤、纺织行业的碳中和。

产业链上下游的企业，可以与纤维追溯解决方案提供商或平台合作，在从原始纤维到服装制造以及消费后使用寿命结束的整个过程中，对产品进行标记、测试和跟踪，提高产品透明度和服装、纺织品再利用的可能性。

完善产品认证标准

绿色、循环与再生性都将会促成新的标准与认证体系，产业



图片来源：国家先进功能纤维创新中心

Image credit: NAFFIC

material to retailing directly and more efficiently.

Existing traceability technologies, including radio frequency identification (RFID), molecular markers and blockchain technology, help enterprises track supply chains, authenticate products, as well as collect and share data.

Applied DNA Sciences (ADNAS) uses permanent-labeled molecular identifiers to track polyester. By partnering with Indian group Reliance Industries Ltd (RIL), ADNAS CertainT® platform tracks RIL's R-Elan rPET GreenGold Polyester.

Eon, a traceable solutions provider, recently launched a global network of partners designed to streamline supply chain cycles, including Renewal Workshop, Evrnu, Worn Again and Trove, as well as brands such as H&M Group, Target, PVH Corp and the C&A Foundation, all of which are key players in increasing the value of clothing through reuse and recycling. Eon's CircularID Protocol traceability tool creates a digital chain of custody for manufacturing and marketing that alerts recyclers and companies when clothing and textile products are at the end of their useful lives so they can intervene.

Sustainable Textiles Credible Platform (STCP), operated by China Chemical Fibers Association(CCFA) and National Advanced Functional Fiber Innovation Center (NAFFIC) , aims to track the flow of green products throughout their life cycle and connect all stakeholders in the ecosystem. To realize the reliable linking of production data, warehousing data, logistics data and trading data, and finally realize the transparent linking of data from procurement, raw material input and output, production consumption, bobbin, package, finished product input and output, invoice and green certification, and actively realize the carbon neutrality of chemical fiber and textile industries.

Upstream and downstream enterprises of the industry value chain can work with fiber traceability solution providers or platforms to mark, test and track products throughout the entire life cycle from raw fiber to garment manufacturing and the end of life after consumption, improving product transparency and the possibility of reuse of clothing and textiles.

Improve certification and standards of recycled product

Green, circularity and recycling will lead to new standards and certification systems that will need to be integrated by upstream and downstream enterprises in order to improve the overall circular system. As environmental regulations become more stringent and consumers become more

链上下游企业需要整合这些标准，以便完善整体循环系统。随着环境法规的愈发严格以及消费者对其的认识不断加深，第三方绿色认证将变得越来越重要。

在纺织循环再生领域，较为出名的第三方认证包括：

纺织品交易所（The Textile Exchange）的全球回收标准（GRS）和回收声明标准（RCS）是针对回收内容、产销监管链、实践和化学品限制的自愿性第三方认证标准。

全球报告倡议组织建立的 GRI 标准，它帮助组织公开披露其经济、环境和社会影响，以及于可持续发展方面的贡献。2021 年，它更新了标准，并建立了新的废弃物标准。

从摇篮到摇篮（Cradle to Cradle Certified®）评估了产品对人类和环境的安全性，以及材料再利用方面的产品设计。

OEKO-TEX® MADE IN GREEN 是可追溯的产品标签认证，适用于各种纺织品及皮革产品。标签认证表示产品通过了有害物质检测 , 且在注重环保、具有社会责任的工厂中生产。消费者可以使用在标签上的产品 ID 或二维码来追踪产品的生产设施及制造国家等信息。

随着循环再生纤维的用量持续增长，零废弃、循环政策法规的增加，企业应关注相关标准和认证，这有助于提升产品的质量，并帮助消费者建立信心，促使整个产业链降低对环境的影响。

衡量产品的碳足迹、循环性

循环目标只有在做到准确跟踪并衡量进度的前提下才有可能实现。并通过可靠、可衡量的数据来明确企业的优势与不足。

制造商、品牌都在开发自己的工具来衡量企业、产品的碳足迹及循环性。这使得它们可以监测并以数据的形式了解为实现其所设定的可持续目标而取得的进展，并有效的传递给利益相关者。

aware of them, third-party green certification will become increasingly important.

Well-known third-party certification authorities in the field of textile recycling include:

The Textile Exchange's Global Recycling Standards (GRS) and Recycling Claim Standards (RCS) are voluntary third-party certification standards for recycled content, chains of custody for production and marketing, practices, and chemical restrictions.

The GRI standard, established by the Global Reporting Initiative, helps organizations publicly disclose their economic, environmental and social impacts, as well as their contributions to sustainable development. In 2021, it updated its standards and established new waste standards.

Cradle to Cradle Certified® evaluates product safety for humans and the environment, as well as product design in terms of material reuse.

OEKO-TEX® MADE IN GREEN is a traceable product label for a wide range of textile and leather products. The certification indicates that a product has passed testing for hazardous substances and is produced in an environmentally friendly, socially responsible factory. Consumers can use the product ID or QR code on the label to track information such as the manufacturing facility and the country where the product was made.

As the consumption of recycled fibers continues to grow and zero-waste and recycling policies and regulations increase, enterprises should pay attention to relevant standards and certifications, which can help improve product quality, build consumer confidence and reduce the environment impact of the entire industrial value chain.

Measure green products' carbon footprint and recyclability

Circular goals can only be achieved if progress is accurately tracked and measured. And through reliable, measurable data, the strengths and weaknesses of the enterprises' circular action can by identified.

Manufacturers and brands are developing their own tools to measure the carbon footprint and recyclability of their businesses and products. This allows them to monitor and understand, in the form of data, progress towards the sustainability goals they have set, and effectively communicate with their stakeholders.

The Circular Transformation Indicator (CTI), published by the World Business Council for Sustainable Development, is an online self-assessment tool developed in partnership with Circular IQ to track circular performance. Circulytics, a digital measurement tool launched by the Ellen MacArthur Foundation in collaboration with more than 30 partners, reports across business operations, including logistics and product evaluations. It provides data and metrics analysis, progress tracking, areas for improvement highlighting, and scoring on companies' strategy, innovation, and logistics. Since its launch in January 2020, more than 500 companies have registered, including 121 with more than $1 billion in annual revenue.

Existing tools such as the Sustainable Apparel Coalition's Higg Index enable brands, retailers and manufacturers to evaluate and score businesses and products, leading to transparent accountability.

In addition to tracking the recycling performance of enterprises, it is also crucial to calculate the carbon footprint of recycled products, so as to prove the low-carbon attributes of products with more favorable data. Product carbon footprint refers to the total amount of all greenhouse gases produced

世界可持续发展工商理事会发布的循环转型指标（CTI）是与 Circular IQ 合作开发的一款线上自我评估工具，用于跟踪企业的循环表现。同时，艾伦 • 麦克阿瑟基金会与 30 多家合作企业联合推出了一款名为 Circulytics 的数字测量工具，其报告范围涵盖包括物流和产品评估在内的整个业务运营，提供数据和指标分析、跟踪进度、突出需要改进的关键领域以及在战略、创新和物流方面对企业进行评分等功能。自 2020 年 1 月推出以来，已有 500 多家公司注册，其中包括 121 家年收入超过 10 亿美元的企业。

美国可持续服装联盟（Sustainable Apparel Coalition）的希格指数（Higg Index）等现有工具使品牌、零售商和制造商能够对企业和产品进行评估和评分，从而实现透明问责制。

除了跟踪企业的循环表现，循环再生产品的碳足迹核算也至关重要，以更加有利的数据证明产品的低碳属性。产品碳足迹（carbon footprint）是指一个产品在其生命周期各个阶段产生的所有温室气体的总量。核心点是产品生命周期的覆盖范围。产品碳足迹基于生命周期评价，这是一种旨在量化与产品和服务相关的环境和人类健康影响的分析方法。也就是说，生命周期评价的范围可以包括“从摇篮到坟墓”的方法，并广泛包括原材料的提取和加工、生产、消费者使用和寿命结束的场景，或“从摇篮到摇篮”的方法，这包括了材料的回收和再利用。

碳足迹核算提供了使用一组不同的指标来评估其生产商品和服务的效率的能力。这一过程使公司能够改善其业务活动的环境绩效，并降低制造和供应链成本。还使公司能够识别供应链中的环境风险，并使自己能够在碳排放受限的经济体中竞争。因此，碳足迹的结果可以为重要的商业决策提供信息，并应作为产品环境绩效的几个指标之一。

产品碳足迹的计算标准包括：

GB/T 24040 / ISO 14040 环境管理 生命周期评价 原则与框架

GB/T 24044 / ISO 14044 环境管理 生命周期评价 要求与指南

ISO 14067-1 产品碳足迹 量化

ISO 14067-2 产品碳足迹 信息交流

总结

在全球可持续发展的背景下，作为全球经济的重要组成部分，化纤和纺织行业已逐渐从消耗环境资源以获取利润的传统生产模式转变为培养消费者环保意识、注重绿色生产工艺和使用循环再生原材料的可持续生产模式。制造商和品牌应侧重投资绿色生产技术、循环再生材料，并与该领域的材料创新者合作；随着消费者环保意识的增强，企业应对社会责任报告、环境报告与财务报告给予同等的重视，追溯分析企业对环境带来的影响，通过上文提到的通用指标、框架报告，向利益相关者传递真实的信息；加大新一代信息技术的应用，如区块链、AI、物联网技术等，增强产业链的智能化，这将对生产效率、数据共享、产业链透明度提升有很大帮助；加强企业与政府、行业协会之间的合作关系，包括相关政策、标准的制定，完善循环再生产品的认证及标准体系，并加强绿色消费意识的普及；最后，产业链的循环性需要上下游的企业共同参与并为之努力，从最初的设计开始，到产品的最终回收利用。可以从小的模块开始尝试，先形成小的闭关，并最终扩大影响力。从而衍生出新的商业模式，这将是未来经济成功的关键。

by a product at all stages of its life cycle. The key point is the coverage scope of the product life cycle. Product's carbon footprints are based on life cycle assessment, an analytical method designed to quantify the environmental and human health impacts associated with products and services. That is, the scope of life cycle assessment can include a "cradle to grave" approach and broadly cover raw material extraction and processing, production, consumer use and end-of-life scenarios, or a "cradle to cradle" approach, which includes material recycling and reusing.

Carbon footprint accounting provides the ability to assess how efficiently it produces products and services using a different set of indicators. This process enables companies to improve the environmental performance of their business activities and reduce manufacturing and supply chain costs. It also enables companies to identify environmental risks in their supply chains and position themselves to compete in carbon-constrained economies. Thus, carbon footprint results can inform important business decisions and should be used as one of several indicators of products' environmental performance.

The standards for carbon footprint accounting include:

GB/T 24040 / ISO 14040 Principles and Framework for Environmental Management Lifecycle Evaluation

GB/T 24044 / ISO 14044 Requirements and Guidelines for Environmental Management Lifecycle Assessment

ISO 14067-1 Quantification of product carbon footprint

ISO 14067-2 Product carbon footprint Information Communication

Conclusion

In the context of global sustainable development, chemical fiber and textile industry, as an important part of the global economy, has gradually changed from the traditional production mode of resources consuming for profit to the sustainable production mode of cultivating consumers' environmental awareness, focusing on green production process and using recycled raw materials. Manufacturers and brands should focus on investing in green production technologies, recycled materials and working with materials innovators in this field; With the increase of consumer awareness of environmental protection, enterprises should pay equal attention to social responsibility reports and environmental reports as well as financial reports, analyze the impact of enterprises on the environment through traceability, with the above mentioned common indicators and framework reports, convey real information to stakeholders; Increasing the application of next-generation information technologies, such as blockchain, AI and the Internet of Things, to enhance the intellectualization of the industrial chain will be of great help to the improvement of production efficiency, data sharing and transparency of the industrial value chain. Strengthen the cooperation between enterprises, government and non-governmental organizations, including the formulation of relevant policies and standards, improve the certification and standard system of recycled products, and strengthen the expansion of green consumption awareness; Finally, a circular industrial value chain requires the participation and efforts of upstream and downstream enterprises, from the initial design to the final recycling of products. Start with a small module to create a small close-loop and eventually expand the impact. New business models will be the key to future economic success.

桐昆·中国纤维流行趋势 2023/2024

入选纤维

入选纤维	纤维名称	企业	品牌
纤·绿意			
生物基化学纤维	菌草基再生纤维素纤维	新乡化纤股份有限公司	白鹭
	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司	隆腾纤维
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司	福泰来丝
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司	伊纶
原液着色化学纤维	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司	申丽纶
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司	唐丝
	双组分并列复合有色聚丙烯纤维	广东蒙泰高新纤维股份有限公司	蒙泰
纤·舒馨			
舒感纤维	微孔聚酯纤维	凯泰特种纤维科技有限公司	凯泰特纤
		安踏（中国）有限公司	
		中国纺织科学研究院有限公司	
	细旦异形聚酰胺 66 纤维	浙江嘉华特种尼龙有限公司	嘉华尼龙
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司	安文思
抑菌纤维	消臭氨纶	连云港杜钟新奥神氨纶有限公司	奥神
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司	镧光丝
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司	植物原
温敏纤维	光谱发热阳离子聚酯纤维	浙江桐昆新材料研究院有限公司	桐昆
	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司	华鼎锦纶
	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司	里奥
纤·无限			
仿真纤维	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司	桐昆
		盛虹集团	盛虹
	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司	泰纶
	细旦羊绒感聚酯纤维	青岛新维纺织开发有限公司	羊绒迭代 ® 涤纶
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司	永盛高纤
	棉感再生纤维素纤维	宜宾丝丽雅集团有限公司	雅赛棉
易打理纤维	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司	恒逸
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司	博尔
	超低温定型聚烯烃弹性纤维	上海梦丝新材料科技有限公司	梦丝
纤·破壁			
安全防护纤维	共聚改性阻燃聚酯纤维	新凤鸣集团股份有限公司	凤鸣
	化学法循环再利用阻燃聚酯纤维	浙江佳人新材料有限公司	佳人
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司	天竹
	高强聚酰胺 66 纤维	神马实业股份有限公司	神马
	柔性发光纤维	泰和新材集团股份有限公司	莱特美
高性能碳纤维	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司	吉林碳谷
		江苏恒神股份有限公司	恒神

Category	Product Name	Company	Brand
FIBER·GREEN			
Bio-based Chemical Fiber	Mycorrhiza-based Regenerated Cellulose Fiber	Xinxiang Chemical Fibre Co., Ltd.	Bailu
	Water Soluble Regenerated Cellulose Ether Staple Fiber	Zhejiang Longrising Regenerative Material Co.,Ltd.	LONGRISING
	Polylactic Acid Fiber for Wool Spinning	Anhui BBCA Biomaterials Co., Ltd.	FUTAILAISI
	Moisture-absorbing and Quick-drying Bio-based Polyamide 56 Fiber	Heilongjiang Eppen New Materials Co., Ltd.	EYLON
Dope Dyed Chemical Fiber	High-quality Dope-dyed Polyamide 6 Fiber	Highsun Holding Group Co., Ltd.	Eco Colors
	Traceable Dope-dyed Regenerated Cellulose Fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co., Ltd.	TangCell
	Bicomponent Composite Colored Polypropylene Fiber	Guangdong Modern High-tech Fiber Co., Ltd.	MODERN
FIBER·COMFORT			
Comfort Fiber	Microporous Polyester Fiber	CTA High-tech Fiber Co., Ltd.	CTA
		Anta (China) Co., Ltd.	
		China Textile Academy (CTA)	
	Fine-denier Heterotypic Polyamide 66 Fiber	Prutex Nylon Co., Ltd.	PRUTAC
	Collagen Modified Regenerated Cellulose Fiber	Zhejiang Qihong New Material Technology Co., Ltd.	ANWENS
Bacteriostatic Fiber	Deodorizing Spandexr	LDZ New Aoshen Spandex Co., Ltd.	AOSHEN
	Anti-bacteria Polyester Fiber Based on Rare-earth Photo-thermal Storage	China Textile Academy (Tianjin) Technology Development Co., Ltd.	catchwarm
	Anti-bacterial and Deodorizing Regenerated Cellulose Fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.	Naturefi
Temperature-sensitive Fiber	Cationic Polyester Fiber with Function of Spectral Heating	Tong Kun Institute for Advanced Materials Co., Ltd.	GOLDEN COCK
	Deformed-section Cool Polyamide 6 Fiber	Yiwu Huading Nylon Co., Ltd.	Huading
	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Development Co.,Ltd.	LYO
FIBER·INFINITE			
Artificial Fiber	Rabbit Hair-like Polyester Fiber Based on Profiled Structure and Delustering Property	Tongkun Group Co., Ltd.	GOLDEN COCK
		Shenghong Group	SHENGHONG
	Silk-like Bio-Based Polyamide 510 Fiber	Cathay Biotech Co., Ltd.	TERRYL
	Fine-denier Cashmere-like Polyester Fiber	Qingdao Xinwei Textile Development Co., Ltd.	ESMERE
	Wool-like Polyester Elastic Fiber	Hangzhou Yongsheng High Polymer Fiber Co., Ltd.	SKY
	Cotton-like Regenerated Cellulose Fiber	Yibin Grace Group Co., Ltd.	gracell cotton
Easy-to-care Fiber	Anti-Fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.	HENGYI
	Ordinary-pressure Deep-dyeing and Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.	Porel
	Ultra-low Temperature Setting Polyolefin Elastic Fiber	Shanghai Mens Advanced Materials & Technology Inc.	MENS
FIBER·BREAKTHROUGH			
Safety Protection Fiber	Copolymerized Modified Anti-flaming Polyester Fiber	New Fengming Group Co., Ltd.	FENGMING
	Chemical Recycling Anti-flaming Polyester Fiber	Zhejiang Jiaren New Materials Co., Ltd.	GREEN CIRCLE
	Anti-flaming Bamboo Pulp Regenerated Cellulose Fiber	Hebei Jigao Chemical Fibre Co., Ltd.	ECOBAMBOO
	High-strength Polyamide 66 Fiber	Shenma Industrial Co., Ltd.	shenma
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.	LITME
High-Performance Carbon Fiber	50K Large-tow Carbon Fiber	Jilin Tangu Carbon Fiber Co., Ltd.	Jilin Tanggu
		Jiangsu Hengshen Co., Ltd.	HENGSHEN

桐昆·中国纤维流行趋势 2023/2024

入围纤维

入围纤维	纤维名称	企业	品牌
生物基化学纤维	可染色纺织专用海藻纤维	青岛源海新材料科技有限公司	海之棉
循环再利用化学纤维	原液着色异形截面循环再利用聚酯纤维	上海德福伦新材料科技有限公司	绿地纶
原液着色化学纤维	原液着色吸湿排汗聚酯纤维	滁州兴邦聚合彩纤有限公司	安兴
健康防护纤维	稀土抗紫外抑菌再生纤维素纤维	山东银鹰化纤有限公司	镧鹰
	矿物粉体改性聚酯纤维	无菌时代复合新材料（苏州）有限公司	无菌时代
舒感纤维	改性 PBT 复合弹性纤维	江苏鑫博高分子材料有限公司	鑫纶
	牛奶丝面料专用聚酯弹性纤维	桐昆集团股份有限公司	桐昆
	乳木果添加改性再生纤维素纤维	响水六棉纺织科技有限公司	乳木果
	羽毛蛋白改性再生纤维素纤维	宜宾惠美纤维新材料股份有限公司	圣桑®羽毛蛋白纤维
轻柔纤维	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司	桐昆
	超细旦聚酯纤维	浙江恒超化纤有限公司	桐昆
仿真纤维	仿毛聚酯纤维	江苏垟恒复合材料有限公司	FDEDF 仿毛纤维
	弹性仿棉双组份复合聚酯纤维	江苏三联新材料股份有限公司	三联
	仿羊羔绒专用三叶型截面聚酯纤维	浙江恒通化纤有限公司	桐昆
	仿超绒面料专用聚酯纤维	浙江恒优化纤有限公司	金鸡
抑菌纤维	凉感抑菌聚酯纤维	苏州春盛环保纤维有限公司	春盛
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司	百草
	高弹性抑菌氨纶高弹性抑菌氨纶	上海康纶航天新材料科技股份有限公司	易拉
	石墨烯改性聚酯混纤	徐州斯尔克纤维科技股份有限公司	魔丝
产业用纤维	高耐候原液着色聚酯纤维	江苏欣战江纤维科技股份有限公司	欣战江
	抗芯吸拒水聚酯工业丝	浙江金汇特材料有限公司	金汇特
	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司	尤夫

Recommend Products	Product Name	Company	Brand
Bio-based chemical fibers	Dyeable alginate fiber for textile	Qingdao Yuanhai New Material Technology Co., Ltd.	hicel
Recycled Chemical Fiber	Dope-dyed deformed-section recycling polyester fiber	Shanghai Different Chemical Fiber Co., Ltd.	Redilon
Dope Dyed Chemical Fiber	Dope-dyed moisture-absorption and sweat-releasing polyester fiber	Chuzhou Xingbang Polymer Color Fiber Co., Ltd.	seeker
Health Protection Fiber	Anti-ultraviolet and antibacterial regenerated cellulose fiber with rare-earth	Shandong Silver Eagle Chemical Fiber Co.,Ltd.	LARAYON
	Mineral-powder-modified polyester fiber	X-GERM (Suzhou) Co., Ltd.	X-GERM
Comfortable Fiber	Modified PBT composite elastic fiber	Jiangsu Xinbow Polymer Materials Company	G3000
	Polyester elastic fiber for milk silk fabric	TongKun Group Co., Ltd.	GOLDEN COCK
	Shea-butter-added modified regenerated cellulose fiber	Xiangshui Liumian Textile Technology Co., Ltd.	shea butter
	Feather protein modified regenerated cellulose fiber	Yibin Spark New Fiber Co., Ltd.	ST-SUN Feather Protein
Soft Fiber	Superfine denier high-dense Soft polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.	GOLDEN COCK
	Superfine denier polyester fiber	Zhejiang Heng Chaos Fiber Co., Ltd.	GOLDEN COCK
Simulated Fiber	Wool-like polyester fiber	Jiangsu Xingheng Composite Material Co., Ltd.	Ternura
	Elastic cotton-like two-component composite polyester fiber	Jiangsu Sanlian New Material Co., Ltd.	SANLIAN
	Berber-fleece-like trilobal-section polyester fiber	Zhejiang Hengtong Chemical Fiber Co., Ltd.	GOLDEN COCK
	Super-soft-velvet-like polyester fiber	Zhejiang Heng You Fiber Co., Ltd.	GOLDEN COCK
Bacteriostatic fiber	Cooling bacteriostatic polyester fiber	Suzhou Chunsheng Environmental Protection Fiber Co., Ltd.	CHUNSHENG
	Sodium alginate modified regenerated cellulose fiber	Qingdao Baicao New Material Co., Ltd.	Byherb
	High-elastic anti-bacterial spandex	Shanghai Kanglun Fiber Technology Co.,Ltd.	Superelas
	Graphene modified polyester fiber blend	Xuzhou Silk Fiber Share Technology Co., Ltd.	MOSI
Industrial Fiber	Dope dyed polyester fiber for high weatherability	Jiangsu Xinzhanjiang Fiber Technology Co., Ltd.	Xinzhanjiang
	Anti-wicking and water-repellency polyester industrial yarn	Zhejiang Kingsway Materials Co., Ltd.	Kingsway
	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang UNIFULL Industrial Fiber Co., Ltd.	UNIFULL

入选及入围纤维下游应用推荐表

服装用纺织品

应用领域	推荐纤维品种	企业
休闲服	菌草基再生纤维素纤维	新乡化纤股份有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	微孔聚酯纤维	凯泰特种纤维科技有限公司
		安踏（中国）有限公司
		中国纺织科学研究院有限公司
	细旦异形聚酰胺 66 纤维	浙江嘉华特种尼龙有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	光谱发热阳离子聚酯纤维	浙江桐昆新材料研究院有限公司
	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司
	棉感再生纤维素纤维	宜宾丝丽雅集团有限公司
	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	原液着色异形截面循环再利用聚酯纤维	上海德福伦新材料科技有限公司
	原液着色吸湿排汗聚酯纤维	滁州兴邦聚合彩纤有限公司
	牛奶丝面料专用聚酯弹性纤维	桐昆集团股份有限公司
	弹性仿棉双组份复合聚酯纤维	江苏三联新材料股份有限公司
	凉感抑菌聚酯纤维	苏州春盛环保纤维有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
	高弹性抑菌氨纶	上海康纶航天新材料科技股份有限公司
运动服	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	双组分并列复合有色聚丙烯纤维	广东蒙泰高新纤维股份有限公司
	微孔聚酯纤维	凯泰特种纤维科技有限公司
		安踏（中国）有限公司
		中国纺织科学研究院有限公司
	细旦异形聚酰胺 66 纤维	浙江嘉华特种尼龙有限公司
	消臭氨纶	连云港杜钟新奥神氨纶有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	光谱发热阳离子聚酯纤维	浙江桐昆新材料研究院有限公司
	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司
	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司
	细旦羊绒感聚酯纤维	青岛新维纺织开发有限公司

CLOTHING TEXTILES

Application field	Recommended fiber	Company
Casual wear	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Micropore polyester fiber	CTA High-tech Fiber Co., Ltd.
		Anta(CHINA) Co., Ltd.
		China Textile Academy
	Fine-denier heterotypic polyamide 66 fiber	Zhejiang Jiahua Specialty Nylon Co., Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile IChina Textile Institute (Tianjin) Technology Development Co., Ltd.
	Spectral heating cationic polyester fiber	Zhejiang Tongkun New Material Research Institute Co., Ltd.
	Silk-like Bio-based Polyamide 510 Fiber	Shanghai Cathay Biotech Inc.
	Wool-like Polyester Elastic Fiber	HangZhou YongSheng High Polymer Fiber Co., Ltd.
	Cotton-like Regenerated Cellulose Fiber	Yibin GRACE Group Co., Ltd.
	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Dope-dyed deformed-section recycling polyester fiber	Shanghai Different Chemical Fiber Co., Ltd.
	Dope-dyed moisture-absorption and sweat-releasing polyester fiber	Chuzhou Xingbang Polymer Color Fiber Co., Ltd.
	Polyester elastic fiber for milk silk fabric	TongKun Group Co., Ltd.
	Eotton-like two-component composite elastic polyester fiber	Jiangsu Sanlian New Materials Co., Ltd.
	Cooling bacteriostatic polyester fiber	Suzhou Chunsheng Environmental Protection Fiber Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
	High-elastic anti-bacterial polyurethane fiber	Shanghai Kanglun Fiber Technology Co.,Ltd.
Sports wear	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	HeilongjiangHeilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Bi-component composite colored polypropylene fiber	Guangdong Modern High-Tech Fiber Co., Ltd
	Micropore polyester fiber	CTA High-tech Fiber Co., Ltd.
		Anta (CHINA) Co., Ltd.
		China Textile Academy
	Fine-denier heterotypic polyamide 66 fiber	Zhejiang JiaZhejiang Jiahua Specialty Nylon Co., Ltd.
	Deodorizing polyurethane fiber	LDZ New AoshenLDZ New Aoshen polyurethane fiber Company Limited
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile IChina Textile Institute (Tianjin) Technology Development Co., Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.
	Spectral heating cationic polyester fiber	Zhejiang Tongkun New Material Research Institute Co., Ltd.
	Deformed-section cool polyamide 6 fiber	Yiwu Huading Nylon Co., Ltd.
	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
	Silk-like Bio-based Polyamide 510 Fiber	Shanghai Cathay Biotech Inc.
	Fine-denier Cashmere-like Polyester Fiber	Qingdao Xinwei Textile Development Co., Ltd.

桐昆·中国纤维流行趋势 2023/2024

入选及入围纤维下游应用推荐表

服装用纺织品

应用领域	推荐纤维品种	企业
运动服	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	化学法循环再利用阻燃聚酯纤维	浙江佳人新材料有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	可染色纺织专用海藻纤维	青岛源海新材料科技有限公司
	原液着色吸湿排汗聚酯纤维	滁州兴邦聚合彩纤有限公司
	稀土抗紫外抑菌再生纤维素纤维	山东银鹰化纤有限公司
	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司
	弹性仿棉双组份复合聚酯纤维	江苏三联新材料股份有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
家居服	菌草基再生纤维素纤维	新乡化纤股份有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	消臭氨纶	连云港杜钟新奥神氨纶有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司
	棉感再生纤维素纤维	宜宾丝丽雅集团有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
婴儿服	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	棉感再生纤维素纤维	宜宾丝丽雅集团有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	可染色纺织专用海藻纤维	青岛源海新材料科技有限公司
	稀土抗紫外抑菌再生纤维素纤维	山东银鹰化纤有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
西装	菌草基再生纤维素纤维	新乡化纤股份有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司

CLOTHING TEXTILES

Application field	Recommended fiber	Company
Sports wear	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing DonghuNanjing Donghua Fiber Technology Development Co., Ltd.
	Chemical Recycling Anti-flaming Polyester Fiber	Zhejiang Jiaren New Materials Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Dyeable alginate fiber for textile	Qingdao Yuanhai New Material Technology Co., Ltd.
	Dope-dyed moisture-absorption and sweat-releasing polyester fiber	Chuzhou Xingbang Polymer Color Fiber Co., Ltd.
	Rare-earth anti-ultraviolet and antibacterial regenerated cellulose fiber	Shandong Shandong Silver Eagle Chemical Fiber Co.,Ltd.
	Superfine denier Soft high-dense polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.
	Eotton-like two-component composite elastic polyester fiber	Jiangsu Sanlian New Materials Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Home wear	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Deodorizing polyurethane fiber	LDZ New AoshenLDZ New Aoshen polyurethane fiber Company Limited
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile Institute (Tianjin) Technology Development Co., Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao BangteQingdao Bangte Ecological Textile Technology Co., Ltd.
	Wool-like Polyester Elastic Fiber	HangZhou YongSheng High Polymer Fiber Co., Ltd.
	Wool-like Polyester Elastic Fiber	Yibin GRACE Group Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing DonghuNanjing Donghua Fiber Technology Development Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Superfine denier Soft high-dense polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Baby clothes	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao BangteQingdao Bangte Ecological Textile Technology Co., Ltd.
	Wool-like Polyester Elastic Fiber	Yibin GRACE Group Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Dyeable alginate fiber for textile	Qingdao Yuanhai New Material Technology Co., Ltd.
	Rare-earth anti-ultraviolet and antibacterial regenerated cellulose fiber	Shandong Shandong Silver Eagle Chemical Fiber Co.,Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Suit	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Wool-like Polyester Elastic Fiber	HangZhou YongSheng High Polymer Fiber Co., Ltd.

入选及入围纤维下游应用推荐表

服装用纺织品

应用领域	推荐纤维品种	企业
牛仔	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	矿物粉体改性聚酯纤维	无菌时代复合新材料（苏州）有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
工装	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	超低温定型聚烯烃弹性纤维	上海梦丝新材料科技有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	柔性发光纤维	泰和新材集团股份有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
毛衣	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司
		盛虹集团
	细旦羊绒感聚酯纤维	青岛新维纺织开发有限公司
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
贴身内衣	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	细旦异形聚酰胺 66 纤维	浙江嘉华特种尼龙有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	消臭氨纶	连云港杜钟新奥神氨纶有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	光谱发热阳离子聚酯纤维	浙江桐昆新材料研究院有限公司
	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司
	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司
	细旦羊绒感聚酯纤维	青岛新维纺织开发有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	超低温定型聚烯烃弹性纤维	上海梦丝新材料科技有限公司

CLOTHING TEXTILES

Application field	Recommended fiber	Company
Jeans	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	HeilongjiangHeilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Mineral-powder-modified polyester fiber	X-GERM (Suzhou) Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Overalls	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Ultra-low Temperature Setting Polyolefin Elastic Fiber	Shanghai Mengsi New Material Technology Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Hebei Jigao Trading Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Sweater	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Delustering Profiled Rabbit Hair-like Polyester Fiber	TongKun Group Co., Ltd.
		Shenghong Group
	Fine-denier Cashmere-like Polyester Fiber	Qingdao Xinwei Textile Development Co., Ltd.
	Wool-like Polyester Elastic Fiber	HangZhou YongSheng High Polymer Fiber Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing DonghuNanjing Donghua Fiber Technology Development Co., Ltd.
Lingerie	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Fine-denier heterotypic polyamide 66 fiber	Zhejiang JiaZhejiang Jiahua Specialty Nylon Co., Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Deodorizing polyurethane fiber	LDZ New AoshenLDZ New Aoshen polyurethane fiber Company Limited
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao BangteQingdao Bangte Ecological Textile Technology Co., Ltd.
	Spectral heating cationic polyester fiber	Zhejiang Tongkun New Material Research Institute Co., Ltd.
	Deformed-section cool polyamide 6 fiber	Yiwu Huading Nylon Co., Ltd.
	Silk-like Bio-based Polyamide 510 Fiber	Shanghai Cathay Biotech Inc.
	Fine-denier Cashmere-like Polyester Fiber	Qingdao Xinwei Textile Development Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Ultra-low Temperature Setting Polyolefin Elastic Fiber	Shanghai Mengsi New Material Technology Co., Ltd.

入选及入围纤维下游应用推荐表

服装用纺织品

应用领域	推荐纤维品种	企业
贴身内衣	稀土抗紫外抑菌再生纤维素纤维	山东银鹰化纤有限公司
	牛奶丝面料专用聚酯弹性纤维	桐昆集团股份有限公司
	乳木果添加改性再生纤维素纤维	响水六棉纺织科技有限公司
	羽毛蛋白改性再生纤维素纤维	宜宾惠美纤维新材料股份有限公司
	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
	高弹性抑菌氨纶	上海康纶航天新材料科技股份有限公司
	石墨烯改性聚酯混纤	徐州斯尔克纤维科技股份有限公司
围巾	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	光谱发热阳离子聚酯纤维	浙江桐昆新材料研究院有限公司
	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司
		盛虹集团
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
袜子	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	消臭氨纶	连云港杜钟新奥神氨纶有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	超低温定型聚烯烃弹性纤维	上海梦丝新材料科技有限公司
	稀土抗紫外抑菌再生纤维素纤维	山东银鹰化纤有限公司
	乳木果添加改性再生纤维素纤维	响水六棉纺织科技有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
	高弹性抑菌氨纶	上海康纶航天新材料科技股份有限公司
鞋材	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司
		盛虹集团
	细旦羊绒感聚酯纤维	青岛新维纺织开发有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	仿羊羔绒专用三叶型截面聚酯纤维	浙江恒通化纤有限公司
	仿超绒面料专用聚酯纤维	浙江恒优化纤有限公司

CLOTHING TEXTILES

Application field	Recommended fiber	Company
Lingerie	Rare-earth anti-ultraviolet and antibacterial regenerated cellulose fiber	Shandong Shandong Silver Eagle Chemical Fiber Co.,Ltd.
	Polyester elastic fiber for milk silk fabric	TongKun Group Co., Ltd.
	Shea-butter-added modified regenerated cellulose fiber	Xiangshui Liumian Textile Technology Co., Ltd.
	Feather protein modified regenerated cellulose fiber	Yibin Spark New Fiber Co., Ltd.
	Superfine denier Soft high-dense polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
	High-elastic anti-bacterial polyurethane fiber	Shanghai Xingnuo Kanglun Fiber Technology Co.,Ltd.
	Graphene modified polyester fiber blend	Xuzhou Silk Fiber Share Technology Co., Ltd.
Scarf	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Spectral heating cationic polyester fiber	Zhejiang Tongkun New Material Research Institute Co., Ltd.
	Delustering Profiled Rabbit Hair-like Polyester Fiber	TongKun Group Co., Ltd.
		Shenghong Group
	Wool-like Polyester Elastic Fiber	HangZhou YonHangZhou YongSheng High Polymer Fiber Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing DonghuNanjing Donghua Fiber Technology Development Co., Ltd.
Socks	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Deodorizing polyurethane fiber	LDZ New AoshenLDZ New Aoshen polyurethane fiber Company Limited
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao BangteQingdao Bangte Ecological Textile Technology Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing DonghuNanjing Donghua Fiber Technology Development Co., Ltd.
	Ultra-low Temperature Setting Polyolefin Elastic Fiber	Shanghai Mengsi New Material Technology Co., Ltd.
	Rare-earth anti-ultraviolet and antibacterial regenerated cellulose fiber	Shandong Shandong Silver Eagle Chemical Fiber Co.,Ltd.
	Shea-butter modified regenerated cellulose fiber	Xiangshui Liumian Textile Technology Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
	High-elastic anti-bacterial polyurethane fiber	Shanghai Xingnuo Kanglun Fiber Technology Co.,Ltd.
Shoe materials	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Delustering Profiled Rabbit Hair-like Polyester Fiber	TongKun Group Co., Ltd.
		Shenghong Group
	Fine-denier Cashmere-like Polyester Fiber	Qingdao XinwQingdao Xinwei Textile Development Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Trilobal-section polyester fiber for Berber-fleece-like fabric	ZHEJIANG HENGTONG CHEMICAL FIBRE CO., LTD.
	Special polyester fiber for Super-soft-velvet-like fabric	Zhejiang Heng You Fiber Co., Ltd.

入选及入围纤维下游应用推荐表

服装用纺织品

应用领域	推荐纤维品种	企业
箱包	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
	柔性发光纤维	泰和新材集团股份有限公司
泳衣	超低温定型聚烯烃弹性纤维	上海梦丝新材料科技有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司
	高弹性抑菌氨纶	上海康纶航天新材料科技股份有限公司
衬衫	菌草基再生纤维素纤维	新乡化纤股份有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司
	棉感再生纤维素纤维	宜宾丝丽雅集团有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
服装里料	菌草基再生纤维素纤维	新乡化纤股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
羽绒服	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司
	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	改性 PBT 复合弹性纤维	江苏鑫博高分子材料有限公司
	超细旦聚酯纤维	浙江恒超化纤有限公司
防晒服	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司
	稀土抗紫外抑菌再生纤维素纤维	山东银鹰化纤有限公司
高端成衣	菌草基再生纤维素纤维	新乡化纤股份有限公司
	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	细旦异形聚酰胺 66 纤维	浙江嘉华特种尼龙有限公司
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司

CLOTHING TEXTILES

Application field	Recommended fiber	Company
Luggage	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
Swimsuit	Ultra-low Temperature Setting Polyolefin Elastic Fiber	Shanghai Mengsi New Material Technology Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Superfine denier Soft high-dense polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.
	High-elastic anti-bacterial polyurethane fiber	Shanghai Xingnuo Kanglun Fiber Technology Co.,Ltd.
Shirt	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao BangteQingdao Bangte Ecological Textile Technology Co., Ltd.
	Deformed-section cool polyamide 6 fiber	Yiwu Huading Nylon Co., Ltd.
	Wool-like Polyester Elastic Fiber	Yibin GRACE Group Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Garment lining	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing DonghuNanjing Donghua Fiber Technology Development Co., Ltd.
Down jacket	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile IChina Textile Institute (Tianjin) Technology Development Co., Ltd.
	Silk-like Bio-based Polyamide 510 Fiber	Shanghai Cathay Biotech Inc.
	Anti-fouling Polyamide 6 Fiber	Zhejiang HengZhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Modified PBT composite elastic fiber	Jiangsu Xinbo Polymer Materials Co.,Ltd.
	Superfine denier polyester fiber	Zhejiang Heng Chaos Fiber Co., Ltd.
Sun-proof clothing	Deformed-section cool polyamide 6 fiber	Yiwu Huading Nylon Co., Ltd.
	Rare-earth anti-ultraviolet and antibacterial regenerated cellulose fiber	Shandong Shandong Silver Eagle Chemical Fiber Co.,Ltd.
High-end ready-to-wear	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Fine-denier heterotypic polyamide 66 fiber	Zhejiang JiaZhejiang Jiahua Specialty Nylon Co., Ltd.
	Wool-like Polyester Elastic Fiber	HangZhou YongSheng High Polymer Fiber Co., Ltd.

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入选及入围纤维下游应用推荐表

服装用纺织品

应用领域	推荐纤维品种	企业
高端成衣	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	柔性发光纤维	泰和新材集团股份有限公司
帽子	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司
		盛虹集团
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	仿超绒面料专用聚酯纤维	浙江恒优化纤有限公司
专业运动服	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司
	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司
	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司
	细旦羊绒感聚酯纤维	青岛新维纺织开发有限公司
水溶花边	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
冲锋衣	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	超细旦聚酯纤维	浙江恒超化纤有限公司
手套	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	乳木果添加改性再生纤维素纤维	响水六棉纺织科技有限公司
瑜伽服	细旦异形聚酰胺 66 纤维	浙江嘉华特种尼龙有限公司
	异形截面凉感聚酰胺 6 纤维	义乌华鼎锦纶股份有限公司
	超细旦轻柔高密聚酯纤维	桐乡市中洲化纤有限责任公司
	高弹性抑菌氨纶	上海康纶航天新材料科技股份有限公司
户外特殊作业	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
人体护理服	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
外套	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司
		盛虹集团

CLOTHING TEXTILES

Application field	Recommended fiber	Company
High-end ready-to-wear	Anti-fouling Polyamide 6 Fiber	Zhejiang HengZhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
Cap	Delustering Profiled Rabbit Hair-like Polyester Fiber	TongKun Group Co., Ltd.
		Shenghong Group
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Special polyester fiber for Super-soft-velvet-like fabric	Zhejiang Heng You Fiber Co., Ltd.
Professional sportswear	Silk-like Bio-based Polyamide 510 Fiber	Shanghai Cathay Biotech Inc.
	Anti-fouling Polyamide 6 Fiber	Zhejiang HengZhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Superfine denier Soft high-dense polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.
	Deformed-section cool polyamide 6 fiber	Yiwu Huading Nylon Co., Ltd.
	Fine-denier Cashmere-like Polyester Fiber	Qingdao XinwQingdao Xinwei Textile Development Co., Ltd.
Water soluble lace	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
Winter jacket	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile IChina Textile Institute (Tianjin) Technology Development Co., Ltd.
	Superfine denier polyester fiber	Zhejiang Heng Chaos Fiber Co., Ltd.
Gloves	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Shea-butter modified regenerated cellulose fiber	Xiangshui Liumian Textile Technology Co., Ltd.
Yoga clothes	Fine-denier heterotypic polyamide 66 fiber	Zhejiang JiaZhejiang Jiahua Specialty Nylon Co., Ltd.
	Deformed-section cool polyamide 6 fiber	Yiwu Huading Nylon Co., Ltd.
	Superfine denier Soft high-dense polyester fiber	Tongxiang Zhongzhou Chemical Fibre Co., Ltd.
	High-elastic anti-bacterial polyurethane fiber	Shanghai Xingnuo Kanglun Fiber Technology Co.,Ltd.
Outdoor special operation	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
Body caring clothes	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
Coat	Delustering Profiled Rabbit Hair-like Polyester Fiber	TongKun Group Co., Ltd.
		Shenghong Group

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入选及入围纤维下游应用推荐表

家用纺织品

应用领域	推荐纤维品种	企业
床上寝具	菌草基再生纤维素纤维	新乡化纤股份有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
	仿真丝生物基聚酰胺 510 纤维	上海凯赛生物技术股份有限公司
	棉感再生纤维素纤维	宜宾丝丽雅集团有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	化学法循环再利用阻燃聚酯纤维	浙江佳人新材料有限公司
	原液着色异形截面循环再利用聚酯纤维	上海德福伦新材料科技有限公司
	矿物粉体改性聚酯纤维	无菌时代复合新材料（苏州）有限公司
	牛奶丝面料专用聚酯弹性纤维	桐昆集团股份有限公司
	羽毛蛋白改性再生纤维素纤维	宜宾惠美纤维新材料股份有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
窗帘	菌草基再生纤维素纤维	新乡化纤股份有限公司
	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	仿毛聚酯弹性纤维	杭州永盛高纤股份有限公司
	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	共聚改性阻燃聚酯纤维	新凤鸣集团股份有限公司
	化学法循环再利用阻燃聚酯纤维	浙江佳人新材料有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	柔性发光纤维	泰和新材集团股份有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
地毯	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	消光异形仿兔毛聚酯纤维	桐昆集团股份有限公司
		盛虹集团
	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	可染色纺织专用海藻纤维	青岛源海新材料科技有限公司
	石墨烯改性聚酯混纤	徐州斯尔克纤维科技股份有限公司

HOME TEXTILES

Application field	Recommended fiber	Company
Bedding	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile Institute (Tianjin) Technology Development Co., Ltd.
	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
	Silk-like Bio-based Polyamide 510 Fiber	Shanghai Cathay Biotech Inc.
	Cotton-like Regenerated Cellulose Fiber	Yibin GRACE Group Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Recycled Anti-flaming Polyester Fiber with chemical method	Zhejiang Jiaren New Materials Co., Ltd.
	Dope-dyed deformed-section recycling polyester fiber	Shanghai Different Chemical Fiber Co., Ltd.
	Mineral-powder-modified polyester fiber	X-GERM (Suzhou) Co., Ltd.
	Polyester elastic fiber for milk silk fabric	TongKun Group Co., Ltd.
	Feather protein modified regenerated cellulose fiber	Yibin Spark New Fiber Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Curtain	Mycorrhiza-based regenerated cellulose fiber	Xinxiang Chemical Fiber Co., Ltd.
	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile Institute (Tianjin) Technology Development Co., Ltd.
	Wool-like Polyester Elastic Fiber	HangZhou YongSheng High Polymer Fiber Co., Ltd.
	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Copolymerized Modified Anti-flaming Polyester Fiber	Xin Feng Ming Group Co., Ltd.
	Recycled Anti-flaming Polyester Fiber with chemical method	Zhejiang Jiaren New Materials Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Carpet	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile Institute (Tianjin) Technology Development Co., Ltd.
	Delustering Profiled Rabbit Hair-like Polyester Fiber	TongKun Group Co., Ltd.
		Shenghong Group
	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Dyeable alginate fiber for textile	Qingdao Yuanhai New Material Technology Co., Ltd.
	Graphene modified polyester fiber blend	Xuzhou Silk Fiber Share Technology Co., Ltd.

桐昆·中国纤维流行趋势 2023/2024

入选及入围纤维下游应用推荐表

家用纺织品

应用领域	推荐纤维品种	企业
沙发布	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	化学法循环再利用阻燃聚酯纤维	浙江佳人新材料有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
填充物	毛纺专用聚乳酸纤维	安徽丰原生物纤维股份有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
毛巾	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	矿物粉体改性聚酯纤维	无菌时代复合新材料（苏州）有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
玩具	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	柔性发光纤维	泰和新材集团股份有限公司
	仿超绒面料专用聚酯纤维	浙江恒优化纤有限公司
桌布	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司
绣花底布	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
壁纸	可染色纺织专用海藻纤维	青岛源海新材料科技有限公司

HOME TEXTILES

Application field	Recommended fiber	Company
Sofa fabric	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Recycled Anti-flaming Polyester Fiber with chemical method	Zhejiang Jiaren New Materials Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
Filler	Polylactic acid fiber for wool spinning	Anhui BBCA Biofibre Co., Ltd.
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile Institute (Tianjin) Technology Development Co., Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.
	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Towel	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Mineral-powder-modified polyester fiber	X-GERM (Suzhou) Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Toys	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Special polyester fiber for Super-soft-velvet-like fabric	Zhejiang Heng You Fiber Co., Ltd.
Tablecloth	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang Unifull Industrial Fibre Co., Ltd.
Embroidery cloth	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
Wallpaper	Dyeable alginate fiber for textile	Qingdao Yuanhai New Material Technology Co., Ltd.

入选及入围纤维下游应用推荐表

产业用纺织品

应用领域	推荐纤维品种	企业
汽车内饰及配件	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	共聚改性阻燃聚酯纤维	新凤鸣集团股份有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	高强聚酰胺 66 纤维	神马实业股份有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	石墨烯改性聚酯混纤	徐州斯尔克纤维科技股份有限公司
体育用品	柔性发光纤维	泰和新材集团股份有限公司
	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司
		江苏恒神股份有限公司
医用纺织品	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	消臭氨纶	连云港杜钟新奥神氨纶有限公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
卫生纺织品	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
	胶原蛋白改性再生纤维素纤维	浙江启宏新材料科技有限责任公司
	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
过滤用品	抑菌消臭再生纤维素纤维	青岛邦特生态纺织科技有限公司
	高强聚酰胺 66 纤维	神马实业股份有限公司
	石墨烯改性聚酯混纤	徐州斯尔克纤维科技股份有限公司
消防用品	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	柔性发光纤维	泰和新材集团股份有限公司
	可染色纺织专用海藻纤维	青岛源海新材料科技有限公司
航空航天	抗污聚酰胺 6 纤维	浙江恒逸石化研究院有限公司
	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司
		江苏恒神股份有限公司
户外用品	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
	稀土抑菌光蓄热聚酯纤维	中纺院（天津）科技发展有限公司
	光谱发热阳离子聚酯纤维	浙江桐昆新材料研究院有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	高强聚酰胺 66 纤维	神马实业股份有限公司
	柔性发光纤维	泰和新材集团股份有限公司
	高耐候原液着色聚酯纤维	江苏欣战江纤维科技股份有限公司
	抗芯吸拒水聚酯工业丝	浙江金汇特材料有限公司
面膜	水溶再生纤维素醚短纤维	浙江隆腾新材料有限公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司

INDUSTRIAL TEXTILES

Application field	Recommended fiber	Company
Automotive interior and accessories	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Copolymerized Modified Anti-flaming Polyester Fiber	Xin Feng Ming Group Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	High-strength Polyamide 6 Fiber	Shenma Industry Co.,Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Graphene modified polyester Mixed fiber	Xuzhou Silk Fiber Share Technology Co., Ltd.
Sporting goods	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	50K Large-tow Carbon Fiber	Jilin Tangu CJilin Tangu Carbon Fiber Co.,Ltd.
		Jiangsu HeJiangsu Hengshen Co.,Ltd.
Medical textiles	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Deodorizing elastane	LDZ New Aoshen Spandex Company Limited
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.
	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Sanitary textiles	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
	Collagen modified regenerated cellulose fiber	Zhejiang Qihong New Material Technology Co., Ltd.
	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
Filtration products	Anti-bacterial and deodorizing regenerated cellulose fiber	Qingdao Bangte Ecological Textile Technology Co., Ltd.
	High-strength Polyamide 6 Fiber	Shenma Industry Co.,Ltd.
	Graphene modified polyester Mixed fiber	Xuzhou Silk Fiber Share Technology Co., Ltd.
Fire supplies	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Dyeable alginate fiber for textile	Qingdao Yuanhai New Material Technology Co., Ltd.
Aerospace	Anti-fouling Polyamide 6 Fiber	Zhejiang Hengyi Petrochemical Research Institute Co., Ltd.
	50K Large-tow Carbon Fiber	Jilin Tangu CJilin Tangu Carbon Fiber Co.,Ltd.
		Jiangsu HeJiangsu Hengshen Co.,Ltd.
Outdoor products	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
	Rare-earth anti-bacteria photo-thermal storage polyester fiber	China Textile Institute (Tianjin) Technology Development Co., Ltd.
	Spectral heating cationic polyester fiber	Zhejiang Tongkun New Material Research Institute Co., Ltd.
	Ou+D35tdoor products	Nanjing Donghua Fiber Technology Development Co., Ltd.
	High-strength Polyamide 6 Fiber	Shenma Industry Co.,Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
	Dope dyed polyester fiber for high weatherability	Jiangsu Xinzhanjiang Fiber Technology Co., Ltd.
	Anti-wicking and water-repellency polyester industrial yarn	Zhejiang Kingsway Materials Co., Ltd.
Masks	Water soluble regenerated cellulose ether staple	Zhejiang Longteng New Materials Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.

入选及入围纤维下游应用推荐表

产业用纺织品

应用领域	推荐纤维品种	企业
揽绳	高强原液着色循环再利用聚酯工业丝	浙江金汇特材料有限公司
	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司
织带	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
	可追溯原液着色再生纤维素纤维	唐山三友集团兴达化纤有限公司
	常压深染抗起球聚酯纤维	南京东华纤维技术发展有限公司
	超低温定型聚烯烃弹性纤维	上海梦丝新材料科技有限公司
	高强聚酰胺 66 纤维	神马实业股份有限公司
	柔性发光纤维	泰和新材集团股份有限公司
风帆布	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司
篷布	抗芯吸拒水聚酯工业丝	浙江金汇特材料有限公司
	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司
轨道交通（汽车轻量化）	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司
		江苏恒神股份有限公司
增强骨架	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司
		江苏恒神股份有限公司
风电叶片	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司
		江苏恒神股份有限公司
军用纺织品	吸湿速干生物基聚酰胺 56 纤维	黑龙江伊品新材料有限公司
	微胶囊相变莱赛尔纤维	上海里奥纤维企业发展有限公司
	高耐候原液着色聚酯纤维	江苏欣战江纤维科技股份有限公司
	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
渔网	高品质原液着色聚酰胺 6 纤维	恒申控股集团有限公司
口罩	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
	石墨烯改性聚酯混纤	徐州斯尔克纤维科技股份有限公司
传送带	共聚改性阻燃聚酯纤维	新凤鸣集团股份有限公司
清洁用品	阻燃竹材再生纤维素纤维	河北吉藁化纤有限责任公司
	海藻酸钠改性再生纤维素纤维	青岛百草新材料股份有限公司
无人机	50K 大丝束碳纤维	吉林碳谷碳纤维股份有限公司
		江苏恒神股份有限公司
防护用品	原液着色异形截面循环再利用聚酯纤维	上海德福伦新材料科技有限公司
蓄水容器	抗芯吸拒水聚酯工业丝	浙江金汇特材料有限公司
遮阳布	高耐候原液着色聚酯纤维	江苏欣战江纤维科技股份有限公司
	抗芯吸拒水聚酯工业丝	浙江金汇特材料有限公司
	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司
广告布	抗芯吸拒水聚酯工业丝	浙江金汇特材料有限公司
	抑菌防霉高强聚酯工业丝	浙江尤夫高新纤维股份有限公司

INDUSTRIAL TEXTILES

Application field	Recommended fiber	Company
Rope	High-strength dope-dyed recycled polyester industrial silk	Zhejiang Kingsway Materials Co., Ltd.
	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang Unifull Industrial Fibre Co., Ltd.
TAPS	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
	Traceable dope-dyed regenerated cellulose fiber	Tangshan Sanyou Group Xingda Chemical Fibre Co.,Ltd.
	Ordinary-pressure Deep-dyeing Anti-pilling Polyester Fiber	Nanjing Donghua Fiber Technology Development Co., Ltd.
	Ultra-low Temperature Setting Polyolefin Elastic Fiber	Shanghai Mengsi New Material Technology Co., Ltd.
	High-strength Polyamide 6 Fiber	Shenma Industry Co.,Ltd.
	Flexible Luminescent Fiber	Tayho Advanced Materials Group Co., Ltd.
Canvas sails	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang Unifull Industrial Fibre Co., Ltd.
Cover cloth	Anti-wicking and water-repellency polyester industrial yarn	Zhejiang Kingsway Materials Co., Ltd.
	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang Unifull Industrial Fibre Co., Ltd.
Rail Transit(Lightweight of automobile)	50K Large-tow Carbon Fiber	Jilin Tangu CJilin Tangu Carbon Fiber Co.,Ltd.
		Jiangsu HeJiangsu Hengshen Co.,Ltd.
Skeleton material	50K Large-tow Carbon Fiber	Jilin Tangu CJilin Tangu Carbon Fiber Co.,Ltd.
		Jiangsu HeJiangsu Hengshen Co.,Ltd.
Wind turbine blade	50K Large-tow Carbon Fiber	Jilin Tangu CJilin Tangu Carbon Fiber Co.,Ltd.
		Jiangsu HeJiangsu Hengshen Co.,Ltd.
Military textiles	Moisture-absorbing and quick-drying bio-based polyamide 56 fiber	Heilongjiang Eppen New Materials Co., Ltd.
	Microencapsulated Phase-change Lyocell Fiber	Shanghai Lyocell Fibre Enterprise Development Co., Ltd.
	Dope dyed polyester fiber for high weatherability	Jiangsu Xinzhanjiang Fiber Technology Co., Ltd.
	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
FishNet	High-quality dope-dyed polyamide 6 fiber	Highsun Holding Group
Gauze mask	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
	Graphene modified polyester Mixed fiber	Xuzhou Silk Fiber Share Technology Co., Ltd.
Conveyors	Copolymerized Modified Anti-flaming Polyester Fiber	Xin Feng Ming Group Co., Ltd.
Cleaning supplies	Anti-flaming Bamboo-basd Regenerated Cellulose Fiber	Hebei Jigao Trading Co., Ltd.
	Sodium alginate modified regenerated cellulose fiber	Qingdao Byherb New Material Co., Ltd.
UAVs	50K Large-tow Carbon Fiber	Jilin Tangu CJilin Tangu Carbon Fiber Co.,Ltd.
		Jiangsu HeJiangsu Hengshen Co.,Ltd.
Preventive Measure	Dope-dyed deformed-section recycled polyester fiber	Shanghai Different Chemical Fiber Co., Ltd.
Water storage container	Anti-wicking and water-repellency polyester industrial yarn	Zhejiang Kingsway Materials Co., Ltd.
Sun cloth	Dope dyed polyester fiber for high weatherability	Jiangsu Xinzhanjiang Fiber Technology Co., Ltd.
	Anti-wicking and water-repellency polyester industrial yarn	Zhejiang Kingsway Materials Co., Ltd.
	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang Unifull Industrial Fibre Co., Ltd.
Advertising clothes	Anti-wicking and water-repellency polyester industrial yarAnti-wicking and water-repellency polyester industrial yarn	Zhejiang Kingsway Materials Co., Ltd.
	High-strength, anti-bacterial and anti-mildew polyester industrial yarn	Zhejiang Unifull Industrial Fibre Co., Ltd.

桐昆·中国纤维流行趋势 2023/2024

化纤油剂助剂及母粒优质供应商名单

浙江传化化学品有限公司
Zhejiang Transfar Chemicals Co.,Ltd
涤纶 DTY 油剂
Conning Oil for polyester draw texturing yarn

上海多纶化工有限公司
Shanghai Duolun Chemical Co.,Ltd.
涤纶短纤油剂
Oil agent for Polyester staple

天津工大纺织助剂有限公司
Tianjin Gongda Textile Assistant Co.,Ltd.
涤纶 FDY 油剂
Spinning Oil for Polyester Full-Drawing Yarn

北京中纺海天新材料技术有限公司
Beijing Zhongfang Haitian New Material Technology Co.,Ltd.
氨纶油剂
Spandex Finish Regent

桐乡市恒隆化工有限公司
TONGXIANG HENGLONG CHEMICAL CO.,LTD.
涤纶 POY 油剂
POY SPINNING FINISH OIL

南通恒润新材料科技有限公司
Nantong Hengrun New Material Technology Co.,Ltd.
锦纶工业丝 FDY 油剂
Spinning Oil for Nylon Industrial Full-Drawing Yarn

华茂伟业绿色科技股份有限公司
B-FCTL Co.,Ltd.
莱赛尔纤维用 NMMO 溶剂
N-Methylmorpholine-N-Oxide50% (NMMO50%)

佛山市顺德区德美瓦克有机硅有限公司
Wacker Dymatic Silicones (Shunde) CO.,Ltd.
涤纶短纤油剂
Polyester Fiberfill Softener

List of high quality suppliers of chemical fiber finish additive and master batch

PPM
POLY PLASTIC MASTERBATCH

苏州宝丽迪材料科技股份有限公司
Poly Plastic Masterbatch (SuZhou) Co.,Ltd.
原液着色用涤纶母粒
Polyester masterbatch for stock solution coloring

上海安凸
www.antutech.com

上海安凸塑料添加剂有限公司
Shanghai Antu Masterbatch Co., Ltd.
聚能蓄热涤纶母粒
Energy accumulating and heat storage masterbatch

GOLDCOLOR® 金彩色母
GOLDCOLOR MASTERBATCH

浙江金彩新材料有限公司
Zhejiang GoldColor Advanced Materials Co., Ltd.
磷系阻燃涤纶母粒
Phosphite-ester Flame Retardant

润步新材料
Rainbow New Material

苏州润步新材料有限公司
Suzhou Rainbow New Material CO.,Ltd.
汽车内饰织物用原液着色涤纶母粒
Masterbatch for PET auto fabric

富桐纤维
Fu Tung Fiber New Materials

常州富桐纤维新材料有限公司
Changzhou FuTong Fiber New Material CO., Ltd.
熔体直纺专用黑色涤纶母粒
Polyester masterbatch for melt direct spinning

JIECON® 洁宜康
防螨抗菌防蚊防霉

上海洁宜康化工科技有限公司
Shanghai Jiecon Chemicals Hi-tech Co.,Ltd.
有机高分子抑菌涤纶母粒
Organic Macromolecule Antimicrobial Polyester Masterbatch

桐昆·中国纤维
流行趋势报告
TONGKUN·CHINA FIBERS
FASHION TRENDS REPORT
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