CONTENT

ABOUT US

Changchun Hipolyking CO.,LTD

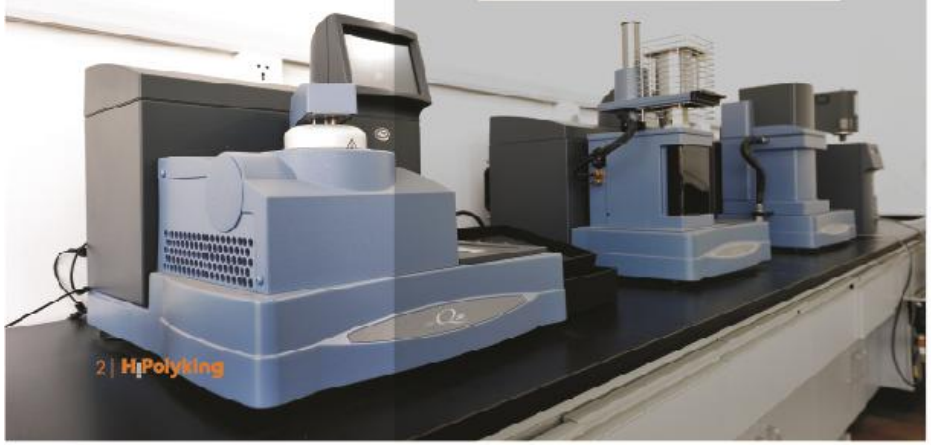
Hipolyking is a public company mainly engaged in development and production of polyimide materials (PI stable fiber, yarn and filament, PI resin, PI engineering plastic, PI paper, PI Nano Membrane and etc. Hipolyking has unique and full production line from raw material synthesis to finished products by our own patent and manufacturing technology. The PI products such as sealing, heat insulation, friction and electric insulation materials could be widely applied in aerospace, automotive and high-speed rail, precision machinery, power batteries, large fans, microelectronic, filtration industries and so on.

LABORATORY

Advanced analyzing and testing equipment

Experienced experts

Innovative technology



APPLICATION

Aerospace

Aviation

Environmental protection filtration material

Power, telecommunication, wind generating industry

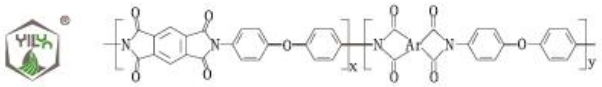
High temperature insulation

Battery

Fire-ectinguishing materials, personnel protection

Household bedding

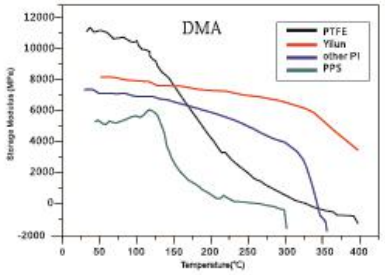
Yilun ® is a registered trademark of the polyimide fiber developed by Hipolyking.



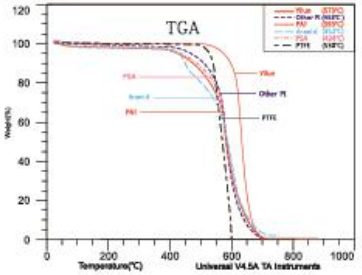
Yilun® polyimide fiber

PERFORMANCE OF YILUN® FIBER

YILUN®

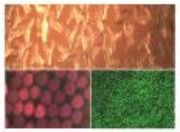


DMA curves of Yilun® fiber and other fibers



TGA curves of Yilun® fiber and other fibers in 5% under the condition of weightlessness

Item （Yis-F, H, Yilun95）	Unit	Technical parameter
Fineness(measured)	dtex	0.89, 1.67, 2.22, 6.67
Tenacity	cN/dtex	>4.0
Elongation at break	%	>20
Thermolysis temperature	℃	570
Shrinkage at 280℃, 30minutes	%	<0.3
Limiting Oxygen Index	%	38
Thermal conductivity at 300℃	W/(m·k)	0.03



Excellent filtration performance

- Various cross sections of Yilun®fiber (round and trilobal) as well as nano fiber can increase filtration surfaces with excellent filtration performance while being laminated alone or mixed.

Excellent chemical stability

- By means of outstanding chemical resistance property, Yilun® fiber can serve long-term in various applications. Yilun® fibers are stable against most common organic solvents such as acids, alkalis, ketones , HC and alcohols.

Autologous flame resistivity

- Yilun® fiber is composed of aromatic backbone units. It is classified as non flammable fiber with LOI of 38%. It is infusible fiber with features of self-extinguishing, low level of smoke and non-toxicity while burning. With the halogen free structure, Yilun® is environmentally friendly.

Excellent stability in a wide range of temperature

- Yilun® is with long-term thermal stability , outstanding mechanical properties and fatigue durability at normal 300 ℃ in service. In addition, Yilun also has excellent ultra-low temperature stability.It doesn t crack at-269 ℃ in liquid nitrogen

Excellent electric properties

- Yilun®remain excellent insulativity under conditions of high temperature, pressure, humidity, and frequency conversion.

Security

- Yilun® fiber has passed Swiss institute of textile testing oeko - Tex BABY level ecological textiles certification, which stands for baby-using first class products.

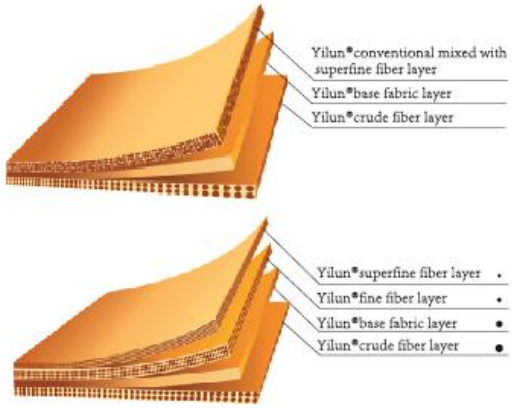
Good weather resistance

- UV-resistance and store easy.

Industrial high temperature filtration

PI-Yilun®fiber Excellent stability

- High temperature stability: long-term temperature resistance up to 300 ℃, short term much more higher temperature resistance.
- Size stability: 280 ℃ for 30 minutes, dry heat shrinkage rate less than 0.3%. remaining continuous the mechanical strength of filter bag.
- Chemical stability: unique chemical structure of Yilun® fiber resulting in more than other similar Fiber more acid-resistant , alkaline corrosion resistant and hydrolysis resistant comparing with other similar fibers.
- Filtration performance: superfine fiber blending with normal fiber realizing more excellent filtration efficiency
- Quality stability: production independent at critical raw materials, ensuring whole process of fiber quality control



Applications of Yilun®fiber

By means of excellent thermal stability and outstanding chemical, physical properties, Yilun® fiber is being widely applied in high temperature resistance field as an extremely efficient filter material. It can effectively filter the harmful gas and dust during industrial combustion process, resist chemical corrosion from combustion smoke and recycle valuable materials as well. Yilun® fiber can be used widely in cement plant, coal-fired power plant, steel plant, waste incineration plant, smelting work, chemical plant, automobile coating factory and so on.

Cement

Power

Steel

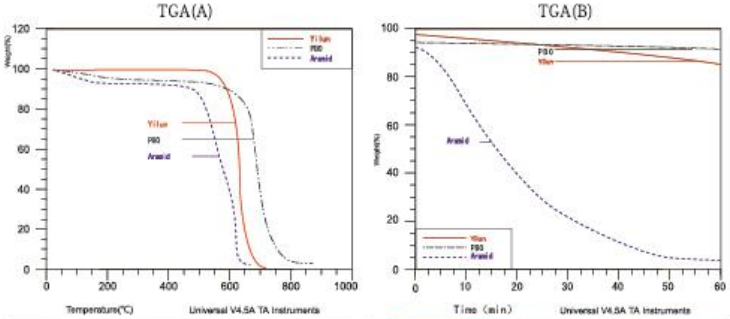
High temperature insulation

High grade of temperature resistance is the most significant feature of Yilun® fiber. Yilun® fiber has long-term thermal stability. It can reach over 550℃ at instant time, It has excellent intension, good fatigue durability, low conductivity, light resistance, hydroscopicity, high thermal stability, autologous flame resistivity and easy storage which could extend performance life. Moreover, under the low temperature of - 269 ℃ in liquid helium, brittle fracture will not happen on it. The fiber could be made of different customized products which can be applied in super high temperature, high temperature profile transmission fields.

Brand	Density• gcm^{-3}	Heat decomposition temperature℃
Aramid	1.45	280
PBO	1.58	630
Polyimide YiLun®	1.4	573

Thermal decomposition curve chart for Yilun® and other two fibers

TGA (A) Thermal decomposition curve chart
TGA (B) Isothermal curve chart at 500 ℃ for 60 minutes



Garment series

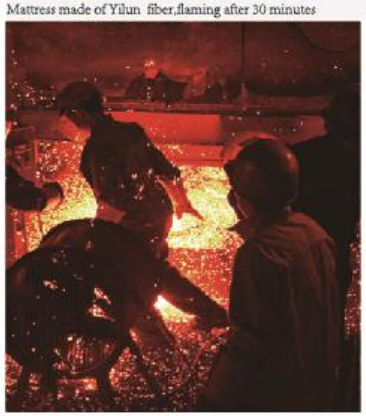
Polyimide fiber is the best solution for aviation and aerospace industries for its unique high (low) temperature resistance, flame resistance anti ultraviolet properties. Changchun Hipolyking Co.,Ltd is the first who introduce this space technology to civilian application in textile field which not only brings great revolutionary and innovative technology, but also give consumers a subversive safe experience to textile field.

High performance flame retardant fabrics

- The limiting Oxygen Index of YiLun® fiber is 38%. It is flame retardant material which is almost non-deforming under high temperatures. It is a suitable material for fire protection garments.
- YiLun®fiber is flame resistant, not melt drippy, extinguishing when leaving fire and non-toxic. It can effectively prevent fire from spreading which is suitable for household protection.
- In high (low) temperature environment YiLun®fiber can remain good mechanical property and stable fabric dimensions which are shrinkage-free and tearing resistant.
- YiLun® fiber could be made of fire resistant and protective garment in special trade fields, schools, hospitals, hotels and other public environments.

Mattress made of Yilun fiber,flaming after 30 minutes

Mattress made of normal fabric,flaming after 4 minutes



Disruptive warm fabric

- YiLun fiber could be made of warm fabrics and flakes
  Low thermal conductivity of YiLun® fiber is disruptive warm material. Comparing with cashmere, down, Yilun® fiber could be lighter and thinner, washing easy and maintenance easy.

Heat preservation	Unit	Yilun95	Cashmere	Polyester
Fineness	dtex	2.2,1.67	–	2.2
Length	mm	38,51	38	51
Clo value	123g/m²	1.41	1.39	1.07
Thermal resistance	㎡ · K/W	0.219	0.216	0.166
Heat transfer coefficient	W/㎡ · K	4.58	4.66	6.03
Thermal insulation rate	%	70.5	70.1	64.9

Baby class skin–friendly fabric

- Yilun®fiber passed the certification of oeko-tex baby level ecological confidence textile of Swiss Textile Testing Institute and European Chemicals Agency (ECHA) 144 substances detection.
- Antibacterial
  Yilun® fibers passed through the antibacterial and antimicrobial test. The antibacterial rate can reach 99.99%, and no free nano silver ion precipitated.

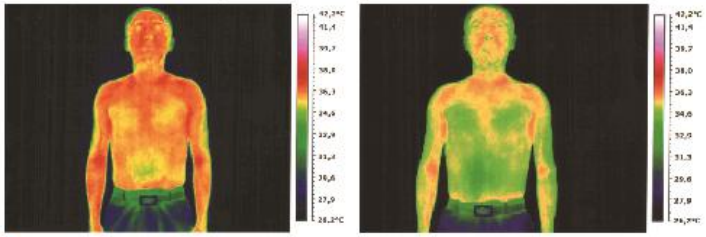
CONFIDENCE IN TEXTILES
Tested for harmful substances according to Oeko-Tex® Standard 100
BFKO 388.542 TESTEX

Native far–infrared

- Far infrared function allows to produce health protectors.
  Native far-infrared function actively accumulate infrared heat of body and environment, and emit the far infrared ray which is appropriate for body absorbality, and activate human cells to promote blood circulation.

Far–infrared ray chart

Comparison chart between Yilun fabirc (left) and other well-known fabrics (right) the infrared image with the Yi Lun ® fabric (left) and foreign brands (R)



- Test method: photo infrared image when using each product 30min later
- Test results: The temperature of Yilun®fabric is relatively high, widely distributed, the microcirculation is significantly accelerated and outward transferred obviously.

Far infrared ray was discovered by human being for nearly 200 years, and the infrared medicine was increasingly active in the past 50 years. To cure some common and stubborn diseases by using thermal effects and non–thermal effects of far infrared ray , the patients