Datasheet
Dexnyl© PI Fiber_17

Product Description

Polyimide (PI) have excellent properties of high temperature resistance, mechanical performance, electrical and thermal insulation, flame retardance, radiation resistance, and solvent resistance. The material is available as chopped or staple fibers and as filament.

These products are manufactured through dry spinning process. PBP (product by process) management system is adopted to strictly control the quality of the products according to ISO9001:2008/ISO14001:2004

Typical PI Chopped Fiber	
Type: 0.78 ~ 6dtex	
Cut Lengths: 3mm, 6mm, 12mm	
Color: original color (golden yellow)	

Typical PI Staple Fiber	
Type: 0.78 ~ 6dtex	
Cut Lengths: 38mm, 51mm, 65mm, 76mm	
Color: golden yellow, black, dark green	

Typical PI Filaments	
Type: 90~3300D, 1.67~3.3dtex each thread	
Tenacity of each thread: 4~7cN/dtex	
Color: golden yellow, black, dark green	

Note: the type and cut length of above products can be as per requirement

Dexnyl © PI Fiber Characteristics

Item	Unit	Value
Finess	dtex	0.78~6
Length	mm	3~76
Density	g/cm^3	1.41
Tenacity	cN/dtex	4~6
Elongation	%	10~30
Suggested long-term working Temp.	°C	260~300
Initial decomposition Temp.	°C	567
Limiting Oxygen Index (LOI)	%	38
Shrinkage at 280 °C, 24h	%	<1

Hydrolysis Resistance

Dexnyl © PI Fiber adopts dry spinning method. The fiber has good hydrolysis resistance property. The retention rate of tenacity is 82.58% which is far higher than allied fibers.

Item	Original tenacity (cN/dtex)	Tenacity after vapour treatment (140°C, 24h)	Rentention rate
Dexnyl © PI Fiber	4.97	4.10	82.58%
Other PI	3.69	3.59	43.09%

Flame Retardant (FR) Property

Limiting Oxygen Index (LOI)

The LOI indicates the level of oxygen required to keep the material burning after ignition. Dexnyl © PI Fiber is classified as non-flammable in atmospheric conditions. The LOI is above 38%

Common FR fiber	Dexnyl © PI Fiber	Meta-aramid (PMIA)	PPS	PSA
LOI	>38	28~30	34	33

Low Damaged Length in Combustion Test

In vertical combustion test under Chinese fire protection criteria GA 10-2014, the damaged length of Dexnyl © PI Fiber fabric is 1/5 of the aramid IIIA fabric (the mainstream FR Fabric). The test result is far above the standard protective fabric.

Item	100% Dexnyl © PI Fiber	Aramid. IIIAA	50% Dexnyl © PI Fiber + 50% FR viscose	50% m-aramid + 50% FR viscose
Damaged length in Warp (mm; 25 times wash)	10	46	12	60
Damaged length in Weft (mm; 25 times wash)	8	48	13	57

No melt and drop, ultralow smoke and non-toxic after carbonization

Dexnyl © PI Fiber will carbonize without melt and drop in case of fire. FR fabric made of Dexnyl © PI Fiber passed the combustion test based on BSS 7238, 7239. There is ultralow smoke and no toxic after carbonization. The density of smoke is 1/200 of the ABD0031 airbus requirement. Dexnyl © PI Fiber is wonderful textile material for confined space, home textiles and protective products.

Dexnyl © PI Fiber Toxic Comparison						(Unit: ppm)	
	Smoke Density (Dm)	CO	HCN	HF	HCI	SO_2	NO_x
Dexnyl © PI Fiber	1	32	0.7	<0.5	<1	<0.5	<2
Airbus Standard	200	3500	150	100	150	100	100

Antibacterial Property

Dexnyl © PI Fiber has natural antibacterial function. The antibacterial effect outperforms bamboo fiber.

Test Item	Strain	Result
Rate of Antibacteria	Staphylococcus Aureus	71%
	Colibacillus	76%

Far IR Property

Far-infrared healthcare textile can promote blood circulation and metabolism, enhance immunity. Dexnyl © PI Fiber fabrics meet the international standard for the far-infrared healthcare product with a far infrared ray of 4~16μm and normal emittance of 88%.

Test Item	Standard	Test Result
Normal emittance	≥0.80	0.88
Wavelength (μm)	4~16	4~16

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