

Fiber - Physical and Chemical Properties

Fiber Type	Heat	Bleaches & Solvents	Acids & Alkalis	Abrasion	Mildew, Aging & Sunlight
Polyester	Softens at 465F. Melts at 500F.	Excellent	Good resistance to weak alkalis & weak acids. Moderate resistance to strong acids & alkali.	Excellent	Excellent resistance to mildew, good aging. Degrades after prolonged exposure to sunlight.
Nylon	Melts at 419F to 430F.	Will bleach. Degrades in mineral acids & oxidizing agents. Insoluble in organic solvents	Resists weak acids, inert to alkalis. Hydrolyzed by strong acids	Excellent	Excellent resistance to mildew and aging. Prolonged sun exposure can cause degradation.
Polyethylene	Melts at 525F	Excellent	Excellent	Good to Poor	Excellent resistance to mildew.
Spandez® / Lycra®	Sticks at 350- 390F. Melts above 500F.	Good resistance to oxidizing agents. Poor resistance to bleaches.	Good	Good in diluted (weak), but degrades in strong acids & bases.	Excellent aging and mildew resistance. Good resistance to sunlight.
Fiberglass (E & S Glass)	Does not burn or melt	Excellent solvent & bleach resistance.	Fair	Good	Excellent
Aramid (Kelvar®, Nomex®, Tarwon®, Technora®, etc.)	Difficult to ignite. Does not burn or melt. Decomposes at 800F to 932F.	Poor in bleach. Excellent solvent resistance.	Good in dilute acids & bases. Poor in strong acids & bases.	Fair to Good	Excellent resistance to mildew & aging. Degrades when exposed to sunlight.
Fluorocarbon - Teflon® (PTFE)	Very heat resistant –350F to 550F. Melts at 620F.	Essentially inert to bleaches & solvents	Excellent but effected by acids & alkali at high temperatures.	Good	Excellent



Fiber - Physical and Chemical Properties - Continued

PBI	Will not ignite	Excellent	Excellent. Some	Good	Good resistance to
	or melt.		strength loss in		mildew & aging.
	Decomposes at		alkali at elevated		Sunlight causes a
	860F.		temperatures.		darkening & some loss
			-		in tensile.
Vectran®	Melts at 625F	Excellent	Excellent	Excellent	Good resistance to
	330C				mildew and aging.
					Sunlight causes
					degradation
Dyneema® &	Melts at 399F	Excellent	Excellent	Good	Excellent
Spectra®	150C.				