

## Natural and man-made fibres

Man made fibres	Organic fibres	Products based on transformed natural substances (Cellulose fibres)	Regenerated cellulose	Viscose
			Cellulose-ester	Cupro
				Modal
		Polyatic Acid	Acetat	
			Triacetat	
			Polyactide (PLA)	
		Products based on synthetic polymers (synthetic fibres)	Polyamides	Polyamide 4.6
				Polyamide 6
			Polyester	Polyamide 6.6
				Polyamide 6.10
				aromatic Polyamide
			Polyurethanes	Polyethyleneterephthalate
				Polyethylenenaphthalate
			Polyacrylonitriles	Polybutyleneterephthalate
				Urethan of Polyester or Polyether
Polyvinyl compounds	Elastomers			
	Acrylic			
Polyolefines	Polyvinyl chloride			
	Polyvinylidenechloride			
	Polyvinyl acetate			
Co-Polymers	Polyvinyl-alcohol			
	Polyethylene			
Fluorinated Polymers	Polypropylene			
	Vinylchloride + Acrylonitril (modacrylic)			
Inorganic fibres	Inorganic fibres	Vinylchloride + Vinyl acetate		
		Vinylidene chloride (polychloride)		
Natural fibres	Organic fibres	Vegetable fibres	Seed fibres	Polytetrafluorethylen
			Bast or stem fibres	Glass
				Leaf fibres
			Fruit fibres	Carbon Fiber
				Animal fibres
		Silk	Wool and hair	Camel hair, Alpaca
			Wool and hair	Mohair, Cashmere
				Horse and Goat's hair
			Angora	
			Silk	Silk

## Physical characteristics of man-made and natural fibres

Type of fibre	Code	Density	Moisture adsorption 65% R.H. 20°C	Melting temperature	Glass transition temperature (dry)	Chemical resistance			
		[g/cm <sup>3</sup> ]	[%]	[°C]	[°C]	Acids	Alkalis	Organic solvents	Hydro- lysis
Cotton	CO	1.50 - 1.54	7 - 11	decomp. (400)	-	-	o	+	+
Wool	WO	1.32	15 - 17	decomp.	-	o	-	+	+
Glass fibre	GF	2.4 - 2.6	0	-	850 - 950	o	o	+	+
Carbon	CF	1.9 - 2.18	0	decomp. (2 500)	-	+	+	+	+
Viscose	CV	1.52	11 - 14	decomp. (175 - 205)	-	-	o	+	+
Polyamide 4.6	PA 4.6	1.18	4.5 - 5.0	290	80	o	o	o	o
Polyamide 6	PA 6	1.14	3.5 - 4.5	215 - 220	80	-	+	o	o
Polyamide 6.6	PA 6.6	1.14	3.5 - 4.5	255 - 260	90	-	+	o	o
Polyamide 6.10	PA 6.10	1.07	2	216	50	o	o	+	o
Polyethylene	PE	0.95	0	125 - 135	-3.5	+	+	o	+
Polypropylene	PP	0.92	0	160 - 175	- 10	+	+	o	+
Polyphenylene- sulfide	PPS	1.38	0.2	295	90	+	+	+	+
Polyether- ether-ketone	PEEK	1.30	0.15	335	143	+	+	+	+
Aramide	AR	1.38- 1.44	3 - 7	decomp. (370 - 550)	280 - 300	o	o	+	o
Polyester	PET	1.38	0.2 - 0.5	250 - 260	90	+	-	o	-
Polyethylene- naphthalate	PEN	1.36	0.2	268	123	+	o	+	o
Polybutylene- terephthalate	PBT	1.30- 1.34	0.4	221-225	30	o	-	o	-
Polyvinyl- alcohol	PVAL	1.25- 1.30	3.5 - 5.0	decomp. (240-250)	75 - 130	+	+	o	-