Properties of Textile Fibers for Dry Filtration

Generic name :	Cotton	Wool	Polyamid	PP	PET	Acrylic Copo-lymer	Homo-polymer acrylic	Aromatic aramid*		PTFE		Expanded PTFE	Poly-ethermide	Sulfar(PPS)			Poly-ketone	Polyimi-de	Glass	Metal*	Ceramic	
FIBER Trade name:			Nylon 66	Herculon	Dacron	Orlon	Dralon T	Nomex	Teijn-conex	Teflon	Toyoflon	Rastex	Akzo PEI	Ryton	Teijin PPS	Bayer PPS	Zyex	P84	Fiber-glass	Bekinox	Nextel 312	Fiberfax
Recommended continuous operation temperature (dry heat)	180°F 82°C	200°F* 94°C	200°F 94°C	200°F* 94°C	270°F 132°C	248°F 120°C	257°F 125°C	400°F 204°C	392°F 200°C	500°F 260°C	500°F 260°C	500°F 260°C	338°F 170°C	375°F 190°C	375°F 190°C	375°F 190°C	460°F 240°C	500°F 260°C	500°F 260°C	1,020°F 550°C	2,100°F 1,150°C	2,300°F 1,260°C
Water vapor saturated condition (moist heat)	180°F 82°C	190°F 88°C	200°F 94°C	200°F* 94°C	200°F 94°C	230°F 110°C	260°F 125°C	350°F 177°C	356°F 180°C	500°F 260°C	500°F 260°C	500°F 260°C	338°F 170°C	375°F 190°C	375°F 190°C	n.y.e.*	460°F 240°C	383°F 195°C	500°F 260°C	1,020°F 550°C	2,100°F 1,150°C	2,300°F 1,260°C
Maximum (short time) operation temperature dry heat	200°F 94°C	230°F 110°C	250°F 121°C	225°F* 107° C	300°F 150°C	248°F 120°C	302°F 150°C	465°F 240°C	482°F 250°C	550°F 290°C	550°F 290°C	550°F 290°C	392°F 200°C	450°F 232°C	446°F 230°C	446°F 230°C	570°F 300°C	580°F 300°C	550°F 290°C	1,110°F 600°C	2,600°F 1,427°C	3,260°F 1,790°C
Specific density	1.50	1.31	1.14	0.9	1.38	1.16	1.17	1.38	1.37–1.38	2.3	2.3	1.6	1.28	1.38	1.34–1.35	1.37	1.30	1.41	2.54	7.9	2.7	2.7
Relative moisture regain in % (at 58°F and 65% relative moisture)	8.5	15	4.0–4.5	0.1	0.4	1.0	1.0	4.5	4.5	0	0	0	1.25	0.6	0.24–0.25	0.6%	0.1	3.0	0	0	0	0
Supports combustion	Yes	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	Self-quenching LOI 39–41%	No	No	No	No	No	No
Biological resistance (bacteria, mildew)	No, if Not treated	No, if Not treated	No effect	Excellent	No effect	Very good	Very good	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect	n.y.e*	No effect	No effect	No effect	No effect	No effect	No effect
Resistance to alkalies	Good	Poor	Good	Excellent	Fair	Fair	Fair	Good	Good	Excellent	Excellent	Excellent	Good ph9	Excellent	Excellent	Excellent	Excellent	Fair	Fair	Excellent	Good	No effect
Resistance to mineral acids	Poor	Good	Poor	Excellent	Fair*	Good	Very good	Fair	Fair	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Very good	Very good	Very good	Good	Very good	Very good
Resistance to organic acids	Poor	Good	Poor	Excellent	Fair	Good	Excellent	Fair	Fair	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Very good	Very good	Very Good	Very good	Excellent
Resistance to oxidizing agents	Fair	Fair	Fair	Good	Good	Good	Good	Poor	Poor	Excellent	Excellent	Excellent	Good	Fair*	Fair	Fair**	Good	Very good	Excellent	Excellent	Excellent	Excellent
Resistance to organic solvents	Very good	Very good	Very good	Excellent	Good	Very good	Very good	Very good	Very good	Excellent	Excellent	Excellent	Good*	Excellent	Excellent	Excellent	Excellent	Excel-lent*	Very good	Excellent	Excellent	Excellent
Comments :		*250°F for Type 154			*Not recom-mended			*PEI fiber is dissolved by partially chlorinated hydro-carbons.		*PPS fiber is attacked by strong oxidizing agents. For example at 200°F for seven days.			*Not yet examined. **Depending on concentration.			*Soluble only in strong polar solvents (DMF, DMAC, DMSO, NMP).			*Inconel 601.		