

PROPERTIES OF TEXTILE FIBRES FOR DRY FILTRATION

Low and Medium Temperature Filtration

Fibre	Generic Name	Cotton	Wool	Polyamid	Polypropylene	Polyester	Acrylic Copolymer	Homopolymer
	Trade Name			Nylon®	Herculon®	Dacron®	Orlon®	Acrylic Draylon T
Recommended continuous operation temperature (dry heat).		82°C	94°C	94°C	94°C	132°C	120°C	140°C
Water vapour saturated condition (moist heat).		82°C	88°C	94°C	94°C	94°C	110°C	125°C
Maximum (short time) operation Temperature (dry heat).		94°C	110°C	121°C	107°C	150°C	120°C	140°C
Specific density.		1.50	1.31	1.14	0.9	1.38	1.16	1.17
Relative moisture regain in % (at 50°C & 65% relative moisture).		8.5	15	4-4.5	0.1	0.4	1.0	1.0
Supports combustion		Yes	No	Yes	Yes	Yes	No	Yes
Biological resistance (bacteria, mildew).	No, if not Treated	No, if not Treated	No effect	No effect	No effect	No effect	Very Good	Very Good
Resistance to alkalines.	Good	Poor	Good	Excellent	Fair	Fair	Fair	Fair
Resistance to mineral acids.	Poor	Good	Poor	Excellent	Fair	Good	Very Good	Very Good
Resistance to organic acids.	Poor	Good	Poor	Excellent	Fair	Good	Excellent	Excellent
Resistance to oxidizing agents.	Fair	Fair	Fair	Good	Good	Good	Good	Good
Resistance to organic solvents	Very Good	Very Good	Very Good	Excellent	Good	Very Good	Very Good	Very Good

High Temperature Filtration

Fibre	Generic Name	Aramid	Glass	PTFE	Polyphenylene Sulfide	Polybenzimidazole	Metal	Ceramic
	Trade Name	Nomex®	Fibreglass®	Teflon®	Ryton®	Dacron®	Bekinox®	Nextel 312®
Recommended continuous operation temperature (dry heat).		204°C	260°C	260°C	190°C	260°C	550°C	1150°C
Water vapour saturated condition (moist heat).		177°C	260°C	260°C	190°C	260°C	550°C	1150°C
Maximum (short time) operation Temperature (dry heat).		232°C	290°C	290°C	232°C	343°C	600°C	1427°C
Specific density.		1.39	2.54	2.3	1.38	1.43	7.9	2.7
Relative moisture regain in % (at 50°C & 65% relative moisture).		4.5	0	0	0.6	14	0	0
Supports combustion		No	No	No	No	No	No	No
Biological resistance (bacteria, mildew).	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect
Resistance to alkalines.	Good	Fair	Excellent	Excellent	Good	Excellent	Good	Excellent
Resistance to mineral acids.	Fair	Very Good	Excellent	Excellent	Excellent	Good	Very Good	Excellent
Resistance to organic acids.	Fair	Very Good	Excellent	Excellent	Fair	Good	Excellent	Excellent
Resistance to oxidizing agents.	Poor	Excellent	Excellent	Poor	Fair	Excellent	Excellent	Excellent
Resistance to organic solvents	Very Good	Very Good	Excellent	Excellent	Good	Excellent	Excellent	Excellent

Source: Lung, D. (1989), *APCEMA Handbook*, Australia: South Pacific Business Publications Pty Ltd.

