

3M Nextel™ AF-12 Aerospace Woven Fabric 312

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Information provided by 3M

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Nextel-AF-12-Aerospace-Woven-Fabric-312.php

Physical Properties	Metric	English	Comments
Density	2.70 g/cc	0.0975 lb/in ³	
Permeability	100	100	[ft ³ /min/ft ²], Air w/o sizing
Thickness	330 microns	13.0 mil	
Fiber Count	1330 dtex	1200 denier	roving

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	1700 MPa	247000 psi	filament 25.4mm
Tensile Modulus	152 GPa	22000 ksi	filament
Tear Strength	38.2 kN/m	218 pli	Warp, Breaking Strength w/o Sizing
	38.2 kN/m	218 pli	Fill, Breaking Strength w/o Sizing

Thermal Properties	Metric	English	Comments
CTE, linear	3.00 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 25.0 - 500 $^{\circ}\text{C}$	1.67 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 77.0 - 932 $^{\circ}\text{F}$	
Specific Heat Capacity	1.05 J/g $\cdot^{\circ}\text{C}$ @Temperature 500 $^{\circ}\text{C}$	0.251 BTU/lb $\cdot^{\circ}\text{F}$ @Temperature 932 $^{\circ}\text{F}$	
Melting Point	1800 $^{\circ}\text{C}$	3270 $^{\circ}\text{F}$	

Optical Properties	Metric	English	Comments
Refractive Index	1.568	1.568	

Component Elements Properties	Metric	English	Comments
Al2O3	62.5 %	62.5 %	
B2O3	13 %	13 %	

Component Elements Properties	Metric	English	Comments
Electrical Properties	Metric	English	Comments
Dielectric Constant	5.2	5.2	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	
Dissipation Factor	0.018	0.018	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	

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