

3M Nextel™ 610 Composite Ceramic Fiber

Category : Ceramic , Oxide , Aluminum Oxide , Other Engineering Material , Composite Fibers

Material Notes:

Chemical composition above is wt%. Filament diameter is 10-12 µm. 3M Nextel Ceramic Fibers 610, 650, and 720 are composite grade fibers. They have a refined crystal structure based on alpha-Al₂O₃ and do not contain glassy phases. This allows the fibers to retain their strength at high temperatures. 3M Nextel Fiber 610 is a fine grained single-phase composition of alpha-Al₂O₃. It has the highest strength at room temperature. However, because it is essentially single phased, the strength decreases rapidly at high temperatures due to grain growth. Information provided by 3M Ceramic Textile and Composites.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Nextel-610-Composite-Ceramic-Fiber.php

Physical Properties	Metric	English	Comments
Density	3.90 g/cc	0.141 lb/in ³	
Particle Size	<= 0.50 µm	<= 0.50 µm	Crystal size
Specific Surface Area	<= 0.20 m ² /g	<= 0.20 m ² /g	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	3100 MPa @Thickness 25.4 mm	450000 psi @Thickness 1.00 in	filament
Modulus of Elasticity	373 GPa	54100 ksi	Filament in Tension

Thermal Properties	Metric	English	Comments
CTE, linear	8.00 µm/m-°C @Temperature 100 - 1100 °C	4.44 µin/in-°F @Temperature 212 - 2010 °F	
Melting Point	2000 °C	3630 °F	

Optical Properties	Metric	English	Comments
Refractive Index	1.74	1.74	

Component Elements Properties	Metric	English	Comments
Al ₂ O ₃	>= 99 %	>= 99 %	

Descriptive Properties	Value	Comments
Color	Off-White	

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