

3M Nextel™ 720 Composite Ceramic Fiber

Category : Ceramic , Oxide , Aluminum Oxide , Silicon 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 720, an alpha-Al₂O₃ with SiO₂ addition (forming alpha-Al₂O₃/mullite), has improved strength retention at temperature due to reduced grain boundary sliding. The SiO₂ addition also help to 'pin' the grains and reduce grain growth when exposed to thermal aging. Information provided by 3M Ceramic Textile and Composites.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Nextel-720-Composite-Ceramic-Fiber.php

Physical Properties	Metric	English	Comments
Density	3.40 g/cc	0.123 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	2100 MPa @Thickness 25.4 mm	305000 psi @Thickness 1.00 in	gauge filament
Modulus of Elasticity	260 GPa	37700 ksi	Filament in Tension

Thermal Properties	Metric	English	Comments
CTE, linear	6.00 µm/m-°C @Temperature 100 - 1100 °C	3.33 µin/in-°F @Temperature 212 - 2010 °F	
Melting Point	1800 °C	3270 °F	

Optical Properties	Metric	English	Comments
Refractive Index	1.67	1.67	

Descriptive Properties	Value	Comments
Color	Green	

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