

3M Nextel™ 440 Industrial Ceramic Fiber

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

Material Notes:

Chemical composition above is wt%. Crystal phases are gamma alumina + mullite + amorphous SiO₂. Filament diameter is 10-12 μm. 3M Nextel fibers 312, 440, and 550 are designed for non-structural applications where their primary purpose is to act as a flame barrier. 3M Nextel Ceramic Fiber 440 is made from Al₂O₃, SiO₂, and B₂O₃. Because B₂O₃ is present, this composition has both crystalline and glassy phases. The glassy phase helps the fiber retain strength after exposure to high temperatures because it slows the growth of crystalline phases that weaken the fiber. However, when the fiber is stressed at high temperature, the glassy phase weakens the fiber due to viscous flow much like a glass fiber. Information provided by 3M Ceramic Textile and Composites.

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Nextel-440-Industrial-Ceramic-Fiber.php

Physical Properties	Metric	English	Comments
Density	3.05 g/cc	0.110 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	2000 MPa @Thickness 25.4 mm	290000 psi @Thickness 1.00 in	filament
Modulus of Elasticity	190 GPa	27600 ksi	Filament in Tension

Thermal Properties	Metric	English	Comments
CTE, linear	5.30 μm/m-°C @Temperature 100 - 1100 °C	2.94 μin/in-°F @Temperature 212 - 2010 °F	
Specific Heat Capacity	1.13 J/g-°C @Temperature 500 °C	0.270 BTU/lb-°F @Temperature 932 °F	
Melting Point	1800 °C	3270 °F	

Optical Properties	Metric	English	Comments
Refractive Index	1.614	1.614	

Component Elements Properties	Metric	English	Comments
Al ₂ O ₃	70 %	70 %	

Component Elements Properties	Metric	English	Comments
SiO2	28 %	28 %	

Electrical Properties	Metric	English	Comments
Dielectric Constant	5.7	5.7	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	
Dissipation Factor	0.015	0.015	
	@Frequency 9.375e+9 Hz	@Frequency 9.375e+9 Hz	

Descriptive Properties	Value	Comments
Color	Coral	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China