

Nyco NYAD® G Wollastonite

Category : Ceramic , Oxide , Silicon Oxide , Other Engineering Material , Additive/Filler for Polymer

Material Notes:

High aspect ratio grade. This grade is recommended for polymer reinforcement. Wollastonite is a naturally occurring white mineral with an acicular (needle-shaped) particle structure. This distinctive particle morphology makes wollastonite an ideal performance mineral for a broad range of industrial and consumer applications, including polymer reinforcement; coatings; construction/architecture reinforcement; enhancing friction stability in discs, lings, and brakes; and metallurgy. Information provided by NYCO Minerals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Nyco-NYAD-G-Wollastonite.php

Physical Properties	Metric	English	Comments
Bulk Density	0.400 g/cc	0.0145 lb/in ³	Loose
	0.800 g/cc	0.0289 lb/in ³	Tapped
Density	2.90 g/cc	0.105 lb/in ³	
Brightness	82 %	82 %	G.E. Brightness
Oil Absorption	35 %	35 %	
Solubility in Water	0.0095 %	0.0095 %	
Moisture Absorption	0.0200 %	0.0200 %	
Particle Size	>= 12 µm	>= 12 µm	10% smaller than
	55 µm	55 µm	median; Microtrac
	<= 200 µm	<= 200 µm	90% smaller than
pH	9.9	9.9	10% Slurry
Specific Surface Area	0.40 m ² /g	0.40 m ² /g	BET
Molecular Weight	116 g/mol	116 g/mol	

Mechanical Properties	Metric	English	Comments
Hardness, Mohs	4.5	4.5	
Tensile Strength	2700 - 4100 MPa	392000 - 595000 psi	Fiber Strength
	@Diameter 0.00300 - 0.150 mm	@Diameter 0.000118 - 0.00591 in	
Modulus of Elasticity	303 - 530 GPa	43900 - 76900 ksi	Fiber Modulus
	@Diameter 0.00300 - 0.150 mm	@Diameter 0.000118 - 0.00591 in	

Mechanical Properties	Metric	English	Comments
CTE, linear	6.50 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	3.61 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
Thermal Conductivity	2.63 - 2.77 $\text{W}/\text{m}\cdot\text{K}$	18.3 - 19.2 $\text{BTU}\cdot\text{in}/\text{hr}\cdot\text{ft}^2\cdot^{\circ}\text{F}$	
Melting Point	1410 $^{\circ}\text{C}$	2570 $^{\circ}\text{F}$	ASTM D1857
	1540 $^{\circ}\text{C}$	2800 $^{\circ}\text{F}$	theoretical

Optical Properties	Metric	English	Comments
Refractive Index	1.63	1.63	

Component Elements Properties	Metric	English	Comments
Al ₂ O ₃	0.40 %	0.40 %	
CaO	46.36 %	46.36 %	
Fe ₂ O ₃	0.77 %	0.77 %	
K ₂ O	0.020 %	0.020 %	
Loss on Ignition(%)	0.50 %	0.50 %	
MgO	0.15 %	0.15 %	
MnO	0.15 %	0.15 %	
SiO ₂	51.6 %	51.6 %	
TiO ₂	0.050 %	0.050 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.30e+13 $\text{ohm}\cdot\text{cm}$	1.30e+13 $\text{ohm}\cdot\text{cm}$	pure wollastonite
Dielectric Constant	6.8	6.8	
	@Frequency 10000 Hz	@Frequency 10000 Hz	
	6.8	6.8	
	@Frequency 100000 Hz	@Frequency 100000 Hz	
	6.9	6.9	
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	6.9	6.9	

Electrical Properties	Metric	English	Comments
Dissipation Factor	0.00152	0.00152	
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0046	0.0046	
	@Frequency 10000 Hz	@Frequency 10000 Hz	
	0.0046	0.0046	
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.0078	0.0078	
	@Frequency 100000 Hz	@Frequency 100000 Hz	

Descriptive Properties	Value	Comments
Aspect Ratio (L/D)	15:1	
Bulking Value (gal./lbs.)	0.0413	
Color	White	
Minus 100 U.S. Mesh Screen (%)	99	
Morphology	Acicular	
Sedimentation (cm)	42	

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