

## CeramTec Alunit® HS Aluminum Nitride

Category : Ceramic , Nitride

### Material Notes:

Alunit® HS offers an extremely high thermal conductivity of 170 W/mK and outstanding electrical insulation properties. The thermal expansion coefficient of this material is comparable to silicon. Its electrical and mechanical characteristics are similar to aluminum oxide. Alunit® HS is non-toxic and environmentally compatible, presenting no disposal problems. Alunit® HS substrates come in a variety of surface finishes: as fired, as fired superior, ground, or polished. They can be manufactured by using tape casting, dry pressing, laser, or metallizing. Typical applications include: power electronics, IGBT modules, telecommunications, cooling devices, DCB (Direct Copper Bonding), and LEDs.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_CeramTec-Alunit-HS-Aluminum-Nitride.php](http://www.lookpolymers.com/polymer_CeramTec-Alunit-HS-Aluminum-Nitride.php)

Physical Properties	Metric	English	Comments
Density	3.33 g/cc	0.120 lb/in <sup>3</sup>	ASTM-C20
Water Absorption	0.00 %	0.00 %	ASTM-C373
Particle Size	4.0 - 5.0 µm	4.0 - 5.0 µm	Medium Grain (d50)

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	320 GPa	46400 ksi	ASTM-F417
Flexural Strength	420 MPa	60900 psi	Bending Strength; 4-Point Method (40x4x3 mm <sup>3</sup> ); ASTM-F417

Thermal Properties	Metric	English	Comments
CTE, linear	4.70 µm/m-°C	2.61 µin/in-°F	ASTM-C372
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
	5.20 µm/m-°C	2.89 µin/in-°F	
	@Temperature 20.0 - 600 °C	@Temperature 68.0 - 1110 °F	ASTM-C372
	5.60 µm/m-°C	3.11 µin/in-°F	ASTM-C372
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.738 J/g-°C	0.176 BTU/lb-°F	
Thermal Conductivity	170 W/m-K	1180 BTU-in/hr-ft <sup>2</sup> -°F	ASTM-C408

Electrical Properties	Metric	English	Comments
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Volume Resistivity Electrical Properties	1.00e+13 ohm-cm Metric	1.00e+13 ohm-cm English	ASTM-D257 Comments
Dielectric Constant	9.0 @Frequency 1.00e+6 Hz	9.0 @Frequency 1.00e+6 Hz	ASTM-C150
Dielectric Breakdown	>= 16000 V @Thickness 1.00 mm	>= 16000 V @Thickness 0.0394 in	ASTM-D149

Descriptive Properties	Value	Comments
Color	Translucent Medium Gray	
Ra = Arithmetic Mean Roughness Value ( $\mu\text{m}$ )	Profilometer (cutoff 0.8 mm); DIN ISO 4287	

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

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