

## CoorsTek Zirconia-Toughened Alumina, ZTA

Category : Ceramic , Oxide , Aluminum Oxide

### Material Notes:

Thermal Shock Delta Tc = 300°C - Thermal shock tests are performed by quenching samples in water from different elevated temperatures. Delta Tc is the change in temperature which results in a sharp decrease in the flexural strength of the sample. Corrosion: Although all Coors Ceramics are highly resistant to chemical attack, Coors recommends obtaining specific application data from Coors before design finalization. Data Provided by the manufacturer, Coors Ceramics Co.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_CoorsTek-Zirconia-Toughened-Alumina-ZTA.php](http://www.lookpolymers.com/polymer_CoorsTek-Zirconia-Toughened-Alumina-ZTA.php)

Physical Properties	Metric	English	Comments
Density	4.05 g/cc	0.146 lb/in <sup>3</sup>	ASTM C20
Water Absorption	0.00 %	0.00 %	ASTM C373
Particle Size	2.0 µm	2.0 µm	Average Crystal Size - Thin Section Test

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	14.4	14.4	1000 g load
Hardness, Rockwell 45 N	85	85	GPa
Tensile Strength, Ultimate	290 MPa	42100 psi	ACMA Test #4
Modulus of Elasticity	360 GPa	52200 ksi	ASTM C848
Flexural Strength	450 MPa	65300 psi	ASTM F417
Compressive Strength	2900 MPa	421000 psi	ASTM C773
Poissons Ratio	0.23	0.23	ASTM C848
Fracture Toughness	5.00 - 6.00 MPa-m <sup>1/2</sup>	4.55 - 5.46 ksi-in <sup>1/2</sup>	Notched Beam
Shear Modulus	146 GPa	21200 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	8.30 µm/m-°C @Temperature 25.0 - 1000 °C	4.61 µin/in-°F @Temperature 77.0 - 1830 °F	ASTM C372
Specific Heat Capacity	0.885 J/g-°C	0.212 BTU/lb-°F	ASTM E1269
Thermal Conductivity	27.0 W/m-K	187 BTU-in/hr-ft <sup>2</sup> -°F	ASTM C408

Maximum Service Temperature, Air Thermal Properties	1500 °C Metric	2730 °F English	No Load Comments
<b>Electrical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
Electrical Resistivity	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	ASTM D1829
	1.00e+6 ohm-cm	1.00e+6 ohm-cm	ASTM D1829
	@Temperature 1000 °C	@Temperature 1830 °F	
	1.00e+9 ohm-cm	1.00e+9 ohm-cm	ASTM D1829
	@Temperature 500 °C	@Temperature 932 °F	
Dielectric Constant	10.6	10.6	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	9.00 kV/mm	229 kV/in	ac; ASTM D116
Dielectric Loss Index	0.00050	0.00050	at 25°C, 1 MHz; ASTM D2520
<b>Descriptive Properties</b>	<b>Value</b>	<b>Comments</b>	
Color	White		

## Contact Songhan Plastic Technology Co.,Ltd.

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