CeramTec 950 Zirconia Toughened Alumina (ZTA), Al2O3•ZrO2

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

950 has a combination of high strength (from zirconia) and high hardness (from the alumina phase). It has excellent wear resistance, both in sliding and abrasive conditions. This material offers a good compromise between toughened zirconia and alumina. It is a good choice for applications that require higher strength but lower hardness compared with alumina (e.g., textile wear parts). Produced with total dispersion of the zirconia phase in the alumina phase, 950 offers consistent performance, lot to lot.

Order this product through the following link:
http://www.lookpolymers.com/polymer_CeramTec-950-Zirconia-Toughened-Alumina-ZTA-Al2O3ZrO2.php

Physical Properties	Metric	English	Comments
Density	4.40 g/cc	0.159 lb/in³	DIN EN 623-2 / ASTM-C373 / ASTM-C20
Water Absorption	0.00 %	0.00 %	DIN EN 623-2 / ASTM-C373

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	1500	1500	HV 0.5; DINV ENV 843-4
Tensile Strength at Break	414 MPa	60000 psi	ACMA Test #4 / DIN EN 843-1
Tensile Modulus	289 GPa	41900 ksi	Young's; DINV ENV 843-2 / ASTM-F417
Flexural Strength	680 MPa	98600 psi	20 x 40 mm
Compressive Strength	2890 MPa	419000 psi	ASTM C-773-88 / DIN 51067T1
Poissons Ratio	0.22	0.22	DINV ENV 843-2
Fracture Toughness	6.00 MPa-m½	5.46 ksi-in½	DIN 51109
Shear Modulus	126 GPa	18300 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	8.80 µm/m-°C	4.89 µin/in-°F	DIN EN 821-1
	6.90 µm/m-°C @Temperature 20.0 - 200 °C	3.83 µin/in-°F @Temperature 68.0 - 392 °F	
	7.80 µm/m-°C @Temperature 20.0 - 600 °C	4.33 µin/in-°F @Temperature 68.0 - 1110 °F	ASTM-C373
	8.30 µm/m-°C	4.61 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.600 J/g-°C @Temperature 100 - 200 °C	0.143 BTU/lb-°F @Temperature 212 - 392 °F	DINV ENV 821-3
Thermal Conductivity	15.0 W/m-K	104 BTU-in/hr-ft²-°F	DIN EN 821-2 / ASTM-C408
Maximum Service Temperature, Air	1500 °C	2730 °F	

Descriptive Properties	Value	Comments
Color	Buff	
Te Value (°C)	> 1000	
Thermal Shock Resistance R1 (K)	250	Hasselman (Experimental)

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