

CoorsTek Yttria Partially Stabilized Zirconia, YZTP, Sintered

Category : Ceramic , Oxide , Zirconium Oxide

Material Notes:

Thermal Shock Delta Tc = 350°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-Yttria-Partially-Stabilized-Zirconia-YZTP-Sintered.php

Physical Properties	Metric	English	Comments
Density	6.02 g/cc	0.217 lb/in ³	ASTM C20
Water Absorption	0.00 %	0.00 %	ASTM C373
Particle Size	1.0 µm	1.0 µm	Average Crystal Size - Thin Section Test

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	12.7	12.7	1000 g load
Hardness, Rockwell 45 N	81	81	GPa
Modulus of Elasticity	210 GPa	30500 ksi	ASTM C848
Flexural Strength	1240 MPa	180000 psi	ASTM F417
Compressive Strength	2500 MPa	363000 psi	ASTM C773
Poissons Ratio	0.23	0.23	ASTM C848
Fracture Toughness	13.0 MPa-m ^{1/2}	11.8 ksi-in ^{1/2}	Notched Beam
Shear Modulus	85.0 GPa	12300 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	10.3 µm/m-°C @Temperature 25.0 - 1000 °C	5.72 µin/in-°F @Temperature 77.0 - 1830 °F	ASTM C372
Specific Heat Capacity	0.400 J/g-°C	0.0956 BTU/lb-°F	ASTM E1269
Thermal Conductivity	2.20 W/m-K	15.3 BTU-in/hr-ft ² -°F	ASTM C408
Maximum Service Temperature, Air	1500 °C	2730 °F	No Load

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00 \times 10^{13}$ ohm-cm	$\geq 1.00 \times 10^{13}$ ohm-cm	ASTM D1829
	≤ 1000 ohm-cm	≤ 1000 ohm-cm	ASTM D1829
	@Temperature 1000 °C	@Temperature 1830 °F	
Dielectric Constant	20000 ohm-cm	20000 ohm-cm	ASTM D1829
	@Temperature 500 °C	@Temperature 932 °F	
Dielectric Strength	29	29	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	9.00 kV/mm	229 kV/in	ac; ASTM D116
Dielectric Loss Index	0.0010	0.0010	at 25°C, 1 MHz; ASTM D2520

Descriptive Properties	Value	Comments
Color	Ivory	

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