

CoorsTek AD-94 Alumina (nom. 94% Al₂O₃)

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Thermal Shock Delta Tc = 250°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-AD-94-Alumina-nom-94-Al₂O₃.php](http://www.lookpolymers.com/polymer_CoorsTek-AD-94-Alumina-nom-94-Al2O3.php)

Physical Properties	Metric	English	Comments
Density	3.70 g/cc	0.134 lb/in ³	ASTM C20
Water Absorption	0.00 %	0.00 %	ASTM C373
Particle Size	12 µm	12 µm	Average Crystal Size - Thin Section Test

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	11.5	11.5	1000 g load
Hardness, Rockwell 45 N	78	78	GPa
Tensile Strength, Ultimate	193 MPa	28000 psi	ACMA Test #4
Modulus of Elasticity	303 GPa	43900 ksi	ASTM C848
Flexural Strength	352 MPa	51100 psi	ASTM F417
Compressive Strength	2103 MPa	305000 psi	ASTM C773
Poissons Ratio	0.21	0.21	ASTM C848
Fracture Toughness	4.00 - 5.00 MPa-m ^{1/2}	3.64 - 4.55 ksi-in ^{1/2}	
Shear Modulus	125 GPa	18100 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	8.20 µm/m-°C @Temperature 25.0 - 1000 °C	4.56 µin/in-°F @Temperature 77.0 - 1830 °F	ASTM C372
Specific Heat Capacity	0.880 J/g-°C	0.210 BTU/lb-°F	ASTM E1269
Thermal Conductivity	22.4 W/m-K	155 BTU-in/hr-ft ² -°F	ASTM C408

Maximum Service Temperature, Air Thermal Properties	1700 °C Metric	3090 °F English	No Load Comments
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Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00\text{e}+14$ ohm-cm	$\geq 1.00\text{e}+14$ ohm-cm	ASTM D1829
	500000 ohm-cm	500000 ohm-cm	ASTM D1829
	@Temperature 1000 °C	@Temperature 1830 °F	
	4.00e+9 ohm-cm	4.00e+9 ohm-cm	ASTM D1829
	@Temperature 500 °C	@Temperature 932 °F	
Dielectric Constant	9.1	9.1	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	8.30 kV/mm	211 kV/in	ac; ASTM D116
Dielectric Loss Index	0.00040	0.00040	at 25°C, 1 MHz; ASTM D2520

Descriptive Properties	Value	Comments
Color	White	

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