

CoorsTek ADOS-90R 91% Alumina Thick Film Substrate

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

This 91-percent alumina (nominal) formulation offers a dark brown body for special applications. Applications: thick films and lasers

Order this product through the following link:

http://www.lookpolymers.com/polymer_CoorsTek-ADOS-90R-91-Alumina-Thick-Film-Substrate.php

Physical Properties	Metric	English	Comments
Density	3.72 g/cc	0.134 lb/in ³	ASTM-C373
Water Absorption	0.00 %	0.00 %	ASTM-C373
Particle Size	5.0 - 7.0 µm	5.0 - 7.0 µm	Grain Size; Intercept Method

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell 45 N	78	78	ASTM-E18
Modulus of Elasticity	310 GPa	45000 ksi	ASTM-C623
Flexural Strength	365 MPa	52900 psi	ASTM-F394
Poissons Ratio	0.24	0.24	ASTM-C623
Shear Modulus	125 GPa	18100 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	6.40 µm/m-°C	3.56 µin/in-°F	ASTM-C372
	@Temperature 25.0 - 200 °C	@Temperature 77.0 - 392 °F	
	7.30 µm/m-°C	4.06 µin/in-°F	ASTM-C372
	@Temperature 25.0 - 500 °C	@Temperature 77.0 - 932 °F	
Thermal Conductivity	8.00 µm/m-°C	4.44 µin/in-°F	ASTM-C372
	@Temperature 25.0 - 800 °C	@Temperature 77.0 - 1470 °F	
	8.40 µm/m-°C	4.67 µin/in-°F	ASTM-C372
	@Temperature 25.0 - 1000 °C	@Temperature 77.0 - 1830 °F	
Thermal Conductivity	8.00 W/m-K	55.5 BTU-in/hr-ft ² -°F	
	@Temperature 400 °C	@Temperature 752 °F	

Thermal Properties	Metric	English	Comments
	12.0 W/m-K	83.3 BTU-in/hr-ft ² -°F	
	@Temperature 100 °C	@Temperature 212 °F	
	13.0 W/m-K	90.2 BTU-in/hr-ft ² -°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	91 %	91 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	7.00e+6 ohm-cm	7.00e+6 ohm-cm	ASTM-D1829
	@Temperature 700 °C	@Temperature 1290 °F	
	4.00e+8 ohm-cm	4.00e+8 ohm-cm	ASTM-D1829
	@Temperature 300 °C	@Temperature 572 °F	
	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	ASTM-D1829
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Dielectric Constant	10.3	10.3	ASTM-D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	11.8	11.8	ASTM-D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	21.3 kV/mm	540 kV/in	60 cycles AC avg. RMS; ASTM-D149
	@Thickness 0.635 mm	@Thickness 0.0250 in	
Dissipation Factor	0.0050	0.0050	Loss Tangent; ASTM-D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.10	0.10	Loss Tangent; ASTM-D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Loss Index	0.050	0.050	Loss Factor; ASTM-D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	1.2	1.2	Loss Factor; ASTM-D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	

Descriptive Properties	Value	Comments
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Color Descriptive Properties	Dark Brown Value	Comments
Permeability	NIL	
Surface Finish - (µin.)	<1.14	as-fired; Profilometer, 0.0002" Radius Stylus, 0.100" Cutoff, ANSI/ASME B46.1
	<45	CLA; Profilometer, 0.0002" Radius Stylus, 0.100" Cutoff, ANSI/ASME B46.1

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