

CeramTec Rubalit® A 1898 Alumina, 98%

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Rubalit® A 1898 (98%) was specifically developed in response to electrical and electronic engineering needs. In conjunction with CeramTec's complementary metallization systems, a vacuum-tight bond of high strength is achieved. Rubalit® A 1898 has high dielectric strength and volume resistivity combined with good thermal conductivity. The metallization system consists of tungsten overplated with nickel for effective hard solder wetting properties. For soft soldering purposes, an additional tin layer can be applied. The use of special brazing materials (e.g., AgCu solder) assures a reliable interface during processing and handling. Brazing is performed in an inert gas atmosphere or vacuum, using temperature/time profiles specifically adapted for each product. The result is a vacuum-tight ceramic-to-metal joint with high bond strength. Glazes can be optionally applied to each product in order to prevent contamination of the ceramic surface, which helps preserve the ceramic's insulating properties under operating conditions.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Rubalit-A-1898-Alumina-98.php

Physical Properties	Metric	English	Comments
Density	3.80 g/cc	0.137 lb/in ³	
Water Absorption	0.00 %	0.00 %	
Permeability	0.00	0.00	%, Gas
Weibull Modulus	11	11	

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	1400	1400	HV 10
Modulus of Elasticity	350 GPa	50800 ksi	
Flexural Strength	400 MPa	58000 psi	
Compressive Strength	3800 MPa	551000 psi	
Poissons Ratio	0.22	0.22	
Fracture Toughness	4.10 MPa-m ^{1/2}	3.73 ksi-in ^{1/2}	K _{IC}
Shear Modulus	143 GPa	20700 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	5.40 µm/m-°C	3.00 µin/in-°F	
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	6.90 µm/m-°C	3.83 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	7.70 µm/m-°C	4.28 µin/in-°F	
	@Temperature 20.0 - 600 °C	@Temperature 68.0 - 1110 °F	
	8.50 µm/m-°C	4.72 µin/in-°F	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.900 J/g-°C	0.215 BTU/lb-°F	Average
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
Thermal Conductivity	26.0 W/m-K	180 BTU-in/hr-ft ² -°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	98 %	98 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+7 ohm-cm	>= 1.00e+7 ohm-cm	
	@Temperature 800 °C	@Temperature 1470 °F	
	>= 1.00e+11 ohm-cm	>= 1.00e+11 ohm-cm	
	@Temperature 400 °C	@Temperature 752 °F	
	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Dielectric Constant	10	10	
	@Frequency 1.00e+7 Hz	@Frequency 1.00e+7 Hz	
Dielectric Strength	25.0 kV/mm	635 kV/in	
Dissipation Factor	0.0010	0.0010	
	@Frequency 1.00e+7 Hz	@Frequency 1.00e+7 Hz	

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