

Advanced Ceramics ALC 1081 (C-786) Alumina

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Information provided by Advanced Ceramics Limited (ACL)

Order this product through the following link:

http://www.lookpolymers.com/polymer_Advanced-Ceramics-ALC-1081-C-786-Alumina.php

Physical Properties	Metric	English	Comments
Density	$\geq 3.60 \text{ g/cc}$	$\geq 0.130 \text{ lb/in}^3$	
Open Porosity	0.0 %	0.0 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell 45 N	78	78	
Modulus of Elasticity	312 GPa	45300 ksi	
Shear Strength	$\geq 300 \text{ MPa}$ @Temperature 20.0 °C	$\geq 43500 \text{ psi}$ @Temperature 68.0 °F	Cross Breaking Strength

Thermal Properties	Metric	English	Comments
CTE, linear	7.50 $\mu\text{m/m-}^\circ\text{C}$	4.17 $\mu\text{in/in-}^\circ\text{F}$	
	@Temperature 20.0 - 600 °C	@Temperature 68.0 - 1110 °F	
	7.70 $\mu\text{m/m-}^\circ\text{C}$	4.28 $\mu\text{in/in-}^\circ\text{F}$	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Thermal Conductivity	$\geq 14.0 \text{ W/m-K}$	$\geq 97.2 \text{ BTU-in/hr-ft}^2\text{-}^\circ\text{F}$	
Maximum Service Temperature, Air	980 °C	1800 °F	Te Value Tk1
	1450 °C	2640 °F	Deflection temperature; No load indicated.

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.50e+17 ohm-cm	2.50e+17 ohm-cm	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Dielectric Constant	8.5	8.5	
	@Frequency 1e+9 Hz	@Frequency 1e+9 Hz	

Electrical Properties	^{9.02} Metric	^{9.02} English	Comments
	@Frequency 9.368e+9 Hz	@Frequency 9.368e+9 Hz	
	9.2	9.2	
	@Frequency 1e+7 Hz	@Frequency 1e+7 Hz	
Dielectric Strength	28.0 kV/mm	711 kV/in	
	@Thickness 0.500 mm	@Thickness 0.0197 in	
Dissipation Factor	<= 0.00010	<= 0.00010	
	@Frequency 1e+7 Hz	@Frequency 1e+7 Hz	
	<= 0.00010	<= 0.00010	
	@Frequency 1e+9 Hz	@Frequency 1e+9 Hz	
	<= 0.00020	<= 0.00020	
	@Frequency 9.368e+9 Hz	@Frequency 9.368e+9 Hz	

Descriptive Properties	Value	Comments
Grain Size	10-20 μm	

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