

Zircar Ceramics ALC Alumina Insulation

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

ALC is the same material as ZAL-15 - but brings exceptional uniformity in an insulation material in cylindrical form. Information provided by Zircar Ceramics.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zircar-Ceramics-ALC-Alumina-Insulation.php

Physical Properties	Metric	English	Comments
Density	0.240 g/cc	0.00867 lb/in ³	
Open Porosity	93 %	93 %	

Mechanical Properties	Metric	English	Comments
Flexural Strength	0.689 MPa	100 psi	Load applied normal to fiber plane, strain = load deformation in mils; Three Point Bending, sample 0.5"*0.5"*4"
	@Strain 60.0 %	@Strain 60.0 %	
	0.689 MPa	100 psi	Load applied parallel to fiber plane, strain = load deformation in mils; Three Point Bending, sample 0.5"*0.5"*4"
	@Strain 40.0 %	@Strain 40.0 %	
Compressive Yield Strength	0.0689 MPa	10.0 psi	Load applied normal to fiber plane
	@Strain 8.00 %	@Strain 8.00 %	
	0.0827 MPa	12.0 psi	Load applied normal to fiber plane
	@Strain 4.00 %	@Strain 4.00 %	
	0.207 MPa	30.0 psi	Load applied parallel to fiber plane
	@Strain 4.00 %	@Strain 4.00 %	
	0.345 MPa	50.0 psi	Load applied parallel to fiber plane
	@Strain 8.00 %	@Strain 8.00 %	

Thermal Properties	Metric	English	Comments
CTE, linear	5.00 µm/m-°C	2.78 µin/in-°F	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	1.05 J/g-°C	0.250 BTU/lb-°F	
Thermal Conductivity	0.0700 W/m-K	0.486 BTU-in/hr-ft ² -°F	parallel to thickness; ASTM C177-76
	@Temperature 400 °C	@Temperature 752 °F	

Thermal Properties	Metric W/m-K	English TU-in/hr-ft ² -°F	Comments
	@Temperature 800 °C	@Temperature 1470 °F	Parallel to Thickness; ASTM C177-76
	0.190 W/m-K	1.32 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1100 °C	@Temperature 2010 °F	
	0.260 W/m-K	1.80 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1400 °C	@Temperature 2550 °F	
	0.280 W/m-K	1.94 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1650 °C	@Temperature 3000 °F	
Melting Point	1870 °C	3400 °F	
Maximum Service Temperature, Air	1550 °C	2820 °F	Continuous
	1650 °C	3000 °F	Intermittent
Shrinkage	1.00 %	1.00 %	Perpendicular to Thickness
	@Temperature 1550 °C, Time 3600 sec	@Temperature 2820 °F, Time 1.00 hour	
	3.00 %	3.00 %	Perpendicular to Thickness
	@Temperature 1650 °C, Time 3600 sec	@Temperature 3000 °F, Time 1.00 hour	

Component Elements Properties	Metric	English	Comments
Al2O3	85 %	85 %	
SiO2	15 %	15 %	

Descriptive Properties	Value	Comments
Bond	Silica	
Color	White	

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