

Zircar Ceramics ZAL-15 Alumina Insulation

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

ZAL-15 is a low thermal conductivity uniformly bound fiber board. It is ideal for machining into precision thermal insulators. Information provided by Zircar Ceramics.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zircar-Ceramics-ZAL-15-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	1.55 MPa	225 psi	Load applied normal to fiber plane, strain = load deformation in mils; Three Point Bending, Sample 0.5"*0.5"*4"
	@Strain 40.0 %	@Strain 40.0 %	
	1.55 MPa	225 psi	Load applied parallel to fiber plane, strain = load deformation in mils; Three Point Bending, Sample 0.5"*0.5"*4"
	@Strain 25.0 %	@Strain 25.0 %	
Compressive Yield Strength	0.207 MPa	30.0 psi	Load applied normal to fiber plane
	@Strain 2.00 %	@Strain 2.00 %	
	0.207 MPa	30.0 psi	Load applied normal to fiber plane
	@Strain 6.00 %	@Strain 6.00 %	
	0.345 MPa	50.0 psi	Load applied parallel to fiber plane
	@Strain 2.00 %	@Strain 2.00 %	
	1.24 MPa	180 psi	Load applied parallel to fiber plane
	@Strain 6.00 %	@Strain 6.00 %	

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	0.0600 W/m-K	0.416 BTU-in/hr-ft ² -°F	parallel to thickness; ASTM C177-76
	@Temperature 250 °C	@Temperature 482 °F	

Thermal Properties	Metric W/m-K	English BTU-in/hr-ft ² -°F	Comments
	@Temperature 525 °C	@Temperature 977 °F	Parallel to Thickness; ASTM C177-76
	0.120 W/m-K	0.833 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 800 °C	@Temperature 1470 °F	
	0.160 W/m-K	1.11 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1075 °C	@Temperature 1967 °F	
	0.220 W/m-K	1.53 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1350 °C	@Temperature 2460 °F	
	0.250 W/m-K	1.74 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1350 °C	@Temperature 2460 °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
Color	White	

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