

Zircar Refractory Composites RSMAT-3000 ALUMINA MAT

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

ZRCI Type RSMAT-3000 is a high purity, high temperature, flexible form composed of continuous 97% alumina ceramic fibers designed for use to 1650°C (3002°F). Type RSMAT-3000 contains little shot and has a higher alumina content than any other ceramic fiber mat or blanket. Type RSMAT-3000 is lightweight, has low thermal conductivity and low heat capacity, and is immune to thermal shock. It is ideal for vacuum, reducing atmospheres and other applications where silica cannot be tolerated, such as powder metal sintering, stainless steel bright annealing and many fuel cell applications. Information provided by ZIRCAR Refractory Composites, Inc. (ZRCI)

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zircar-Refractory-Composites-RSMAT-3000-ALUMINA-MAT.php

Physical Properties	Metric	English	Comments
Bulk Density	0.0350 g/cc	0.00126 lb/in ³	
Loss On Ignition	0.000 % @Temperature 800 °C, Time 7200 sec	0.000 % @Temperature 1470 °F, Time 2.00 hour	
Filament Diameter	3.0 - 5.0 µm	3.0 - 5.0 µm	
Thickness	35000 microns	1378 mil	

Mechanical Properties	Metric	English	Comments
Hardness, Mohs	6.0	6.0	
Tensile Strength, Ultimate	0.0350 MPa	5.08 psi	
Modulus of Elasticity	320 GPa	46400 ksi	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.047 J/g-°C	0.2502 BTU/lb-°F	
Thermal Conductivity	0.0700 W/m-K @Temperature 315 °C	0.486 BTU-in/hr-ft ² -°F @Temperature 599 °F	parallel to thickness; ASTM C177
	0.130 W/m-K @Temperature 760 °C	0.902 BTU-in/hr-ft ² -°F @Temperature 1400 °F	parallel to thickness; ASTM C177
	0.300 W/m-K @Temperature 1425 °C	2.08 BTU-in/hr-ft ² -°F @Temperature 2597 °F	parallel to thickness; ASTM C177
Melting Point	2036 °C	3697 °F	
Maximum Service Temperature, Air			

Thermal Properties	1650 °C Metric	3000 °F English	Comments
Shrinkage	2.20 %	2.20 %	Linear Reheat Shrinkage
	@Temperature 1425 °C, Time 86400 sec	@Temperature 2597 °F, Time 24.0 hour	
	3.00 %	3.00 %	Linear Reheat Shrinkage
	@Temperature 1535 °C, Time 86400 sec	@Temperature 2795 °F, Time 24.0 hour	
	4.00 %	4.00 %	Linear Reheat Shrinkage
	@Temperature 1650 °C, Time 86400 sec	@Temperature 3000 °F, Time 24.0 hour	

Component Elements Properties	Metric	English	Comments
Al2O3	97 %	97 %	
Other	<= 0.50 %	<= 0.50 %	
SiO2	3.0 %	3.0 %	

Chemical Properties	Metric	English	Comments
Ionic Impurities - Na (Sodium)	875 ppm	875 ppm	

Descriptive Properties	Value	Comments
Calcium, ppm	525	
Color	White	

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