

Zircar Zirconia FBD Zirconia Boards, Discs, and Cylinders Insulation

Category : Ceramic , Machinable Ceramic , Oxide , Zirconium Oxide

Material Notes:

Type FBD Boards, Discs and Cylinders are high strength, uniform, rigid, refractory structures composed of zirconia fibers stabilized with yttria. Type FBD is Zircar Zirconia's strongest and most stable zirconia material. Type FBD is ideally suited for thermal insulation and protection applications under conditions of ultra-high temperatures and in varied atmospheres. FBD has been high fired and is tightly bonded resulting in nearly dust free use. This tight bonding makes machining to tight tolerances possible. FBD is dimensionally stable to 2000°C and can be used at higher temperatures in areas where some sintering can be tolerated. FBD has good hot strength up to 1700°C and can be used as a self supporting setter for loads equal to twice its own weight up to this temperature. It has exceptional resistance to oxidizing and reducing atmospheres at high temperatures. Zirconia does, however, lose a small amount of oxygen at very high temperatures in vacuum and inert or reducing atmospheres. Although this reaction results in a color change from white to gray, other properties remain essentially unchanged and insulation effectiveness is not impaired. FBD has exceptional resistance to most corrosive environments. It undergoes little attack by molten alkali metal chlorides and carbonates at temperatures as high as 700°C and withstands aqueous solutions of alkali metal hydroxides at temperatures as high as 230°C. FBD will tolerate exposure to inorganic acids at their boiling point for short lengths of time. FBD contains no organic binders, produces no smoke or odor and undergoes no physically disruptive phase transitions when heated.

Features: Rigid and Machinable
 Our Most Dense, Highest Strength, Fibrous Zirconia Material
 High Purity Zirconia Bonded
 Extreme High Temperature Stability
 Fibers Stabilized with ~10 wt% Yttria
 Low Thermal Conductivity
 Can be Cemented with Zircar Zirconia Cement Type ZR-CEM
 Can be Surface Hardened with Zircar Zirconia Rigidizer Type ZR-RIG
 Pre-fired and Organic Free
 Information provided by Zircar Zirconia.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zircar-Zirconia-FBD-Zirconia-Boards-Discs-and-Cylinders-Insulation.php

Physical Properties	Metric	English	Comments
Bulk Density	1.40 g/cc	0.0506 lb/in ³	
Porosity	70 %	70 %	
Outgassing - Total Mass Loss	0.00 %	0.00 %	In vacuum

Mechanical Properties	Metric	English	Comments
Flexural Strength	8.27 MPa	1200 psi	Parallel to thickness
Compressive Yield Strength	5.52 MPa	801 psi	Parallel to thickness @ 10% compression

Thermal Properties	Metric	English	Comments
CTE, linear	10.7 µm/m-°C	5.94 µin/in-°F	
	@Temperature 20.0 - 1400 °C	@Temperature 68.0 - 2550 °F	
Thermal Conductivity	0.240 W/m-K	1.67 BTU-in/hr-ft ² -°F	

Thermal Properties	Metric @ Temperature 400 °C	English @ Temperature 752 °F	Comments
	0.260 W/m-K @Temperature 800 °C	1.80 BTU-in/hr-ft ² -°F @Temperature 1470 °F	
	0.310 W/m-K @Temperature 1100 °C	2.15 BTU-in/hr-ft ² -°F @Temperature 2010 °F	
	0.330 W/m-K @Temperature 1400 °C	2.29 BTU-in/hr-ft ² -°F @Temperature 2550 °F	
	0.350 W/m-K @Temperature 1650 °C	2.43 BTU-in/hr-ft ² -°F @Temperature 3000 °F	
Melting Point	2590 °C	4690 °F	
Maximum Service Temperature, Air	2200 °C	3990 °F	
Softening Point	1400 °C	2550 °F	Dilatometric @ 10psi
Shrinkage	0.000 % @Temperature 1650 °C, Time 3600 sec	0.000 % @Temperature 3000 °F, Time 1.00 hour	perpendicular to thickness
	0.900 % @Temperature 1650 °C, Time 86400 sec	0.900 % @Temperature 3000 °F, Time 24.0 hour	perpendicular to thickness
	2.00 % @Temperature 2000 °C, Time 1800 sec	2.00 % @Temperature 3630 °F, Time 0.500 hour	perpendicular to thickness

Component Elements Properties	Metric	English	Comments
HfO2	1.0 - 2.0 %	1.0 - 2.0 %	
Y2O3	10 %	10 %	
ZrO2	88 - 89 %	88 - 89 %	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215, Fengxian District, Shanghai City, China