Magnesia Stabilized Zirconia

Description:

Magnesia Stabilized Zirconia is available both partially and fully stabilized. Grades are available for applications including structural ceramics for turbine blades and anti-ballistic and armour ceramics and ionically conductive uses. A variety of surface areas can be produced.

Composition:			
ZrO_2:	> 80 %	MgO:	< 10 %
Binders:	N/A	Additives:	N/A

Specifications:		Units
Colour	Yellow/Ivory	
Compressive (Crushing) Strength	1750	MPa
Density	5.70	g/cm^3
Hardness	77	R45N
Dielectric Constant (Relative Permittivity)	28	N/A
Dielectric Strength (Breakdown Potential)	9.4	kV/mm
Elastic (Young's, Tensile) Modulus	200	GPa
Electrical Resistivity Order of Magnitude	$1x10^{13}$	Ω-m
Flexural Strength	900	MPa
Fracture Toughness	11	MPa
Poisson's Ratio	0.30	N/A
Specific Heat Capacity	400	J/kg-K
Tensile Strength Ultimate (UTS)	483	MPa
Thermal Conductivity	2.2	W/m-K
Thermal Expansion	10.2	µm/m-K

Features:

- Mechanical strength
- Temperature resistance
- Wear resistance
- Stability at high temperatures
- Resistance to chemicals
- Very low thermal conductivity

Applications:

- Valve seats and seals
- Roller guides for tube forming
- MWD tools
- Structural ceramics
- Wear parts

Production Capabilities:

- Isostatic and dry pressing, green machining
- Grinding and lapping to very tight tolerances
- Prototype, batch and volume production

These values represent typical properties of standard materials.
Values should be used only for comparison and should not be used as a warranty.