



Zirconia Toughened Alumina

TECHNICAL DATA SHEET OF ZIRCONIA TOUGHENED ALUMINA (ZTA)

	PROPERTIES	VALUE
CHEMICAL	Al ₂ O ₃	> 85.0 %
	ZrO ₂	> 10 %
	SiO ₂	0 - 3 %
	Others	0 - 2 %
PHYSICAL	Colour	Ivory
	Surface Finish	Smooth
	Density	4.00 ± 0.05 g/cm ³
	Bulk Density	2.38 ± 0.05 kg/ltr
	Porosity	Nil
	Water Absorption	Nil
	Hardness on Moh's Scale	9+
	Hardness on Vicker's Scale	1350 Hv ₅
	Flexural Strength 3 P.B. (@ Room Temperature)	440 MPa
	Compressive Strength (@ Room Temperature)	2500 Mpa
	Young's Modulus	330 Gpa
	Crushing Strength (@ Room Temperature : Ø 1.5mm Bead)	133 kgf
	Bead Sphericity 90%	> 0.95
	% Cumulative Weight Loss / Hr (Wear Test Conducted in a Jar Mill with Water & Silica Sand. Media Size Ø 25 mm)	
	After 24 Hrs.	0.0073
	After 96 Hrs.	0.0046
THERMAL	Coefficient of Linear Thermal Expansion (Room Temperature to 1000 °C)	8.5 x 10 ⁻⁶ / °C
	Thermal Conductivity (@ Room Temperature)	17 W/mK
	Max Temperature of Use (No Load Condition)	1500 °C (2732 °F)
ELECTRICAL	Dielectric Strength (@ Room Temperature)	18 kV/mm
	Dielectric Constant (@ Room Temperature @ 1 MHz)	10
	Dissipation Factor (@ Room Temperature @ 1 MHz)	0.0005
	Volume Resistivity (@ Room Temperature)	> 10 ¹⁴ Ω.cm

Kindly note that all values mentioned are based on test pieces and may vary according to component design and manufacturing process. The values are not guaranteed by Jyoti Ceramic Ind. in anyway whatsoever and should be treated as indicative only. All values refer to a testing temperature of 20 °C, unless otherwise specified.



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