

ACCURATUS

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TTZ Tetragonally Toughened Zirconia Material Properties

Mechanical	SI/Metric (Imperial)	SI/Metric	(Imperial)
Density	gm/cc (lb/ft ³)	5.5	(343.4)
Porosity	% (%)	0	(0)
Color	—	tan	—
Flexural Strength	MPa (lb/in ² x10 ³)	400-620	(58-90)
Elastic Modulus	GPa (lb/in ² x10 ⁶)	200	(29)
Shear Modulus	GPa (lb/in ² x10 ⁶)	—	—
Bulk Modulus	GPa (lb/in ² x10 ⁶)	—	—
Poisson's Ratio	—	—	—
Compressive Strength	MPa (lb/in ² x10 ³)	1800-4820	(270-700)
Hardness	Kg/mm ²	1100	—
Fracture Toughness K _{IC}	MPa•m ^{1/2}	6-10	—
Maximum Use Temperature (no load)	°C (°F)	400-980	(4750-1800)
Thermal			
Thermal Conductivity	W/m•°K (BTU•in/ft ² •hr•°F)	2	(13.9)
Coefficient of Thermal Expansion	10 ⁻⁶ /°C (10 ⁻⁶ /°F)	5-10	(2.8-5.5)
Specific Heat	J/Kg•°K (Btu/lb•°F)	418	(0.1)
Electrical			
Dielectric Strength	ac-kv/mm (volts/mil)	2-10	(50-250)
Dielectric Constant	—	—	—
Dissipation Factor	—	—	—
Loss Tangent	—	—	—
Volume Resistivity	ohm•cm	>10 ¹⁰	—

*All properties are room temperature values except as noted.

The data presented is typical of commercially available material and is offered for comparative purposes only. The information is not to be interpreted as absolute material properties nor does it constitute a representation or warranty for which we assume legal liability. User shall determine suitability of the material for the intended use and assumes all risk and liability whatsoever in connection therewith.

ACCURATUS: *Latin* – careful, precise, accurate