

# Zirconia 3Y-TZP

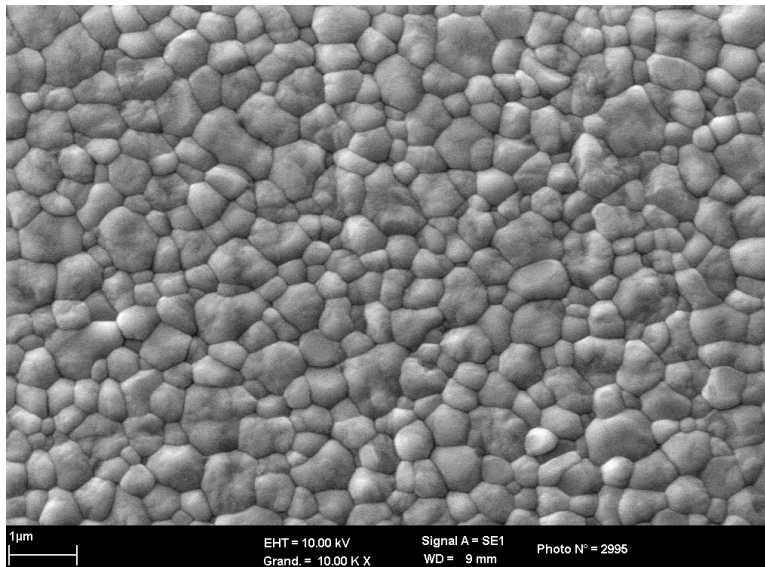
CHEMICAL COMPOSITION	ZrO <sub>2</sub>	93%wt	* by difference
	HfO <sub>2</sub>	<2%wt	
	Y <sub>2</sub> O <sub>3</sub>	5.2%wt	
	Al <sub>2</sub> O <sub>3</sub>	0.25%wt	
	SiO <sub>2</sub>	<0.02	
	Fe <sub>2</sub> O <sub>3</sub>	<0.01	

PHYSICAL PROPERTIES	Mean grain size	0.5±0.1 μm
	Sintered density	6.06 g/cm <sup>3</sup>
	Bending strength at 20° C	1200 MPa
	Hardness H <sub>v0.5</sub>	1200 Hv

THERMAL PROPERTIES	Thermal conductivity at 20°C	2.5 W.m <sup>-1</sup> .k <sup>-1</sup>
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ELECTRICAL PROPERTIES	Dielectric constant at 25°C-1MHz	29 (1MHz)
	tan δ	2.10 <sup>-3</sup> (1GHz)
	DC Volume resistivity at 25°C	1.10 <sup>12</sup> Ω.cm
	Dielectric strength at 3mm	19 kV/mm <sup>-1</sup>

## MICROSTRUCTURE



KEY FEATURES	High mechanical strength, biocompatible
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TYPICAL APPLICATIONS	Dental implants and prosthetics, medical device casings, pumps plungers, endoscope tips, rotors valves, check valves components, watch casings, jewelry and decorative ceramics, food processing, welding pins.
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