METOXIT
high tech ceramics

Zirconia Ceramics

DIN EN 60 672

Designation		TZP	TZP-A	FSZ	PSZ	ATZ
Components		ZrO_2/Y_2O_3	$ZrO_2/Y_2O_3/Al_2O_3$	ZrO_2/Y_2O_3	ZrO_2/MgO	$ZrO_2/Al_2O_3/Y_2O_3$
Composition	%	95/5	95/5/0.25	90/10	96.5/3.5	76/20/4
Density	g/cm^3	6.05	6.05	5.8	5.7	5.5
Open porosity	%	0	0	0	0	0
Grain size (mli)	µm	0.4	0.35	10	20	0.4
Hardness Vickers	Hv	1200	1200	1200	1500	1400
Hardness Mohs		8	8	8	>8	8
Compressive strength	MPa	2000	2000	2000	2000	2000
Flexural strength	MPa	1000	1200	250	500	2000
Young's modulus	GPa	200	210	150	200	220
Fracture toughness K_{1c}	$MN/m^{3/2}$	8	8	-	10	8
Posson ratio	-	0.31	0.31	-	0.23	0.3
Max. operating temperature	°C	1000	1000	2000	1000	1000
Thermal expansion (20-1000°C)	$10^{-6}/K$	10	10	10	10	9
Thermal conductivity	W/mK	2.5	2.5	2.5	2	6
Specific heat	J/kg K	500	500	500	550	600
Dielectric strength	kV/mm	-	-	-	-	-
Electrical resistivity (20 °C/1000 °C)	_ cm	-	-	-	10^{15}/3.0	-
Dielectric constant (100 MHz)	_	-	-	-	-	-
Dielectric loss factor	tan _	-	-	-	-	-
Shaping procedures:						
Isostatic pressing		X	X	X	X	X
Die pressing		X	X		X	X
Slip casting				X		
HIP		X	X			X
Suggested applications		Bioceramic, Precision parts	Bioceramic (Orthopaedics, Dental), Precision parts	Probes, Crucibles, Tubes	Tubes, Plates, Precision parts	Bioceramic (Orthopaedics, Dental), heavy-duty wear-resistant parts

All information and data correspond to the present state of our knowledge concerning properties and applications. They do not guarantee certain properties for products designed for specific applications utilizing material(s) described herein. We guarantee, however, first rate quality as lined out in our terms of delivery.

METOXIT AG
P. O. Box 160
CH-8240 Thayngen
T: +41 52 645 01 01
F: +41 52 645 01 00
Internet www.metoxit.com
E-mail info@metoxit.com