

MgPSZ				Y-TZP			ATZ
Izory®	Izory® X	Izory® HD	Izory® Gold	Sintered	Dark HIPed	HIPed	HIPed

Property	Test Method	Izory®	Izory® X	Izory® HD	Izory® Gold	Sintered	Dark HIPed	HIPed	HIPed
Color		ivory	ivory	ivory	yellow	white	tan	white or gray	white
Chemistry (%)	ICP & EDS								
ZrO ₂ + HfO ₂ + MgO		99.5	99.5	97.14	99.5				
Y ₂ O ₃ + HfO ₂ + ZrO ₂						99.70	99.50	99.70	79.95
Al ₂ O ₃						0.25	0.3	0.25	20
Other		0.5	0.5	2.86	0.5	0.05	0.2	0.05	0.05
Density (g/cc)	ISO 18754	5.75	5.82	5.82	5.72	6.00		6.08	5.50
Water Absorption	ASTM-373	nil	nil	nil	nil	nil	nil	nil	nil
Grain Size (µm)	ASTM E-112	70	70	20	70	0.4	0.4	0.4	0.7
Fracture Toughness K _{1c} (MPa · m ^{1/2})	ASTM C-1421 - Chevron Notch	10	10	10	10	5	5	5	9
Loop Abrasion (mm ³)	ASTM G 174	0.150	0.150	0.100	0.150	0.070	0.060	0.060	0.010
Modulus of Elasticity MOE (GPa)	ASTM E1876-99	214	214	214	214	214	214	214	296
Modulus of Rupture 4pt MOR (MPa)	ASTM C-1161	575	625	750	575	1100	1650	1650	1360
Hardness Vickers (HV 1)	ASTM C1327-08	1150	1250	1325	1150	1350	1600	1600	1730
Poisson Ratio	ASTM E1876-99	0.31	0.31	0.31	0.31	0.32	0.32	0.32	0.27
Compressive Strength (MPa)	ASTM C773	1760	1760	1760	1760	2500	2580	2580	2100
Thermal Conductivity RT (W/m ² K)	ASTM C408	2.50	2.50	2.50	2.50	2.18	2.18	2.18	6.00
Coefficient of Thermal Exp. X 10 ⁻⁶ /°C (25-1000°C)	ASTM C372	10.2	10.2	10.2	10.2	10.7	10.7	10.7	9.0
Maximum Material Use Limit (°C)	NO LOAD	500	500	500	500	1500	1500	1500	1500

