

## MATERIAL DATA SHEET

Material type: Zirconia

### Z701N

#### Properties of Microstructure

Alumina Content		%	-
Density	JIS R 1634	g/cm <sup>3</sup>	6
Water Absorption		%	0
Mean Grain Size		µm	-

#### Mechanical Properties

Hardness (HV 9.807N)	JIS R 1610	GPa	12.7
Compressive strength	JIS R 1608	MPa	-
Flexural strength	JIS R 1601	MPa	1470
Modulus of Elasticity	JIS R 1602	GPa	220
Poisson's ratio	JIS R 1602		0.31
Fracture toughness	JIS R 1607	MPa·m <sup>1/2</sup>	4 - 5

#### Thermal Properties

Specific Heat 20°C	JIS R 1611	J/gK	0.46
Thermal Conductivity	JIS R 1611	W/mK	3
Expansion coefficient 40-400°C	JIS R 1618	10 <sup>-6</sup> /K	10.8
Expansion coefficient 40-800°C	JIS R 1618	10 <sup>-6</sup> /K	11.3
Thermal Shock Temperature Difference (in water)	JIS R 1648	°C	350

#### Electrical Properties

Dielectric strength	JIS C 2141	kV/mm	-
Specific Resistance 20°C	JIS C 2141	Ω·cm	-
Specific Resistance 300°C	JIS C 2141	Ω·cm	-
Specific Resistance 500°C	JIS C 2141	Ω·cm	-
Dielectric constant (1 MHz)	JIS C 2141		-
Dielectric Loss Angle (1 MHz)	JIS C 2141	10 <sup>-4</sup>	-
Typical Colour			ash black

The values are typical material properties and may vary according to products configuration and manufacturing process.