

MATERIAL DATA SHEET

Material type: Yttria

YO100A
Properties of Microstructure

Alumina Content		%	-
Density	JIS R 1634	g/cm ³	4.9
Water Absorption		%	0
Mean Grain Size		µm	

Mechanical Properties

Hardness (HV 9.807N)	JIS R 1610	GPa	6
Compressive strength	JIS R 1608	MPa	-
Flexural strength	JIS R 1601	MPa	130
Modulus of Elasticity	JIS R 1602	GPa	160
Poisson's ratio	JIS R 1602		-
Fracture toughness	JIS R 1607	MPa·m ^{1/2}	1.1

Thermal Properties

Specific Heat 20°C	JIS R 1611	J/gK	0.45
Thermal Conductivity	JIS R 1611	W/mK	14
Expansion coefficient 40-400°C	JIS R 1618	10 ⁻⁶ /K	7.2
Expansion coefficient 40-800°C	JIS R 1618	10 ⁻⁶ /K	7.6
Thermal Shock Temperature Difference (in water)	JIS R 1648	°C	-

Electrical Properties

Dielectric strength	JIS C 2141	kV/mm	11
Specific Resistance 20°C	JIS C 2141	Ω·cm	>10 ¹³
Specific Resistance 300°C	JIS C 2141	Ω·cm	10 ¹⁰
Specific Resistance 500°C	JIS C 2141	Ω·cm	10 ⁷
Dielectric constant (1 MHz)	JIS C 2141		11
Dielectric Loss Angle (1 MHz)	JIS C 2141	10 ⁻⁴	5
Typical Colour			white

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