

MATERIAL DATA SHEET

Material type: Alumina

A479

Properties of Microstructure

Alumina Content		%	99
Density	JIS R 1634	g/cm ³	3.8
Water Absorption		%	0
Mean Grain Size		µm	-

Mechanical Properties

Hardness (HV 9.807N)	JIS R 1610	GPa	15.2
Compressive strength	JIS R 1608	MPa	2160
Flexural strength	JIS R 1601	MPa	310
Modulus of Elasticity	JIS R 1602	GPa	360
Poisson's ratio	JIS R 1602		0.23
Fracture toughness	JIS R 1607	MPa*m ^{1/2}	3 - 4

Thermal Properties

Specific Heat 20°C	JIS R 1611	J/gK	0.79
Thermal Conductivity	JIS R 1611	W/mK	19
Expansion coefficient 40-400°C	JIS R 1618	10 ⁻⁶ /K	7.2
Expansion coefficient 40-800°C	JIS R 1618	10 ⁻⁶ /K	8
Thermal Shock Temperature Difference (in water)	JIS R 1648	°C	200

Electrical Properties

Dielectric strength	JIS C 2141	kV/mm	15
Specific Resistance 20°C	JIS C 2141	Ω•cm	>10 ¹⁴
Specific Resistance 300°C	JIS C 2141	Ω•cm	10 ¹⁰
Specific Resistance 500°C	JIS C 2141	Ω•cm	10 ⁸
Dielectric constant (1 MHz)	JIS C 2141		9.9
Dielectric Loss Angle (1 MHz)	JIS C 2141	10 ⁻⁴	2
Typical Colour			white

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