

## MATERIAL DATA SHEET

Material type: Alumina

**A0478A**
**Properties of Microstructure**

Alumina Content		%	98
Density	JIS R 1634	g/cm <sup>3</sup>	3.64
Water Absorption		%	0
Mean Grain Size		µm	-

**Mechanical Properties**

Hardness (HV 9.807N)	JIS R 1610	GPa	13.8
Compressive strength	JIS R 1608	MPa	-
Flexural strength	JIS R 1601	MPa	410
Modulus of Elasticity	JIS R 1602	GPa	341
Poisson's ratio	JIS R 1602		
Fracture toughness	JIS R 1607	MPa·m <sup>1/2</sup>	-

**Thermal Properties**

Specific Heat 20°C	JIS R 1611	J/gK	
Thermal Conductivity	JIS R 1611	W/mK	24
Expansion coefficient 40-400°C	JIS R 1618	10 <sup>-6</sup> /K	6.8
Expansion coefficient 40-800°C	JIS R 1618	10 <sup>-6</sup> /K	
Thermal Shock Temperature Difference (in water)	JIS R 1648	°C	

**Electrical Properties**

Dielectric strength	JIS C 2141	kV/mm	
Specific Resistance 20°C	JIS C 2141	Ω·cm	>10 <sup>12</sup>
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		9.3
Dielectric Loss Angle (1 MHz)	JIS C 2141	10 <sup>-4</sup>	
Typical Colour			white

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