

MATERIAL DATA SHEET

Material type: Alumina

A479S

Properties of Microstructure

Alumina Content		%	99.5
Density	JIS R 1634	g/cm ³	3.9
Water Absorption		%	0
Mean Grain Size		µm	

Mechanical Properties

Hardness (HV 9.807N)	JIS R 1610	GPa	16
Compressive strength	JIS R 1608	MPa	2350
Flexural strength	JIS R 1601	MPa	360
Modulus of Elasticity	JIS R 1602	GPa	370
Poisson's ratio	JIS R 1602		0.23
Fracture toughness	JIS R 1607	MPa·m ^{1/2}	4

Thermal Properties

Specific Heat 20°C	JIS R 1611	J/gK	0.78
Thermal Conductivity	JIS R 1611	W/mK	32
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	250

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 ¹³
Specific Resistance 500°C	JIS C 2141	Ω·cm	10 ¹⁰
Dielectric constant (1 MHz)	JIS C 2141		9.9
Dielectric Loss Angle (1 MHz)	JIS C 2141	10 ⁻⁴	1
Typical Colour			ivory

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