

## MATERIAL DATA SHEET

Material type: Alumina

### A476 (DB or substrate)

#### Properties of Microstructure

Alumina Content		%	96
Density	JIS R 1634	g/cm <sup>3</sup>	3.7
Water Absorption		%	0
Mean Grain Size		µm	-

#### Mechanical Properties

Hardness (HV 9.807N)	JIS R 1610	GPa	13.7
Compressive strength	JIS R 1608	MPa	-
Flexural strength	JIS R 1601	MPa	310
Modulus of Elasticity	JIS R 1602	GPa	330
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	26
Expansion coefficient 40-400°C	JIS R 1618	10 <sup>-6</sup> /K	7.2
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	12
Specific Resistance 20°C	JIS C 2141	Ω•cm	>10 <sup>14</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		9.4
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.