SA100 (≥ 99.99%)

2023.04.03

SPECIFICATIONS

- Chemical formula: Al_2O_3
- Chemical name: Sapphire
- Apperance: Dense sintered sapphire
- Main characteristics: Single crystal, high heat resistance, high chemical resistance
- Main applications: Thin film substarates, windows, chemically resistant parts
- Colour: Transparent

MECHANICAL & PHYSICAL CHARACTERISTICS (TYP.)

Density		[g/cm³]	JIS R 1634	3.97	
Water absorption		[%]	JIS C 2141	0	
Vickers hardness HV9.807N		[GPa]	JIS R 1610	Surface a	22.5
Flexural strength 3 P.B.		[MPa]	JIS R 1601	Surface a Axis c	690
Compressive strength		[MPa]	JIS R 1608	2,940	
Young's modulus of elasticity		[GPa]	JIS R 1602	470	
Poisson's ratio		[-]	JIS R 1602	-	
Fracture toughness (SEPB)		[MPa*m$^{0.5}$]	JIS R 1607	-	
Coefficient of linear thermal expansion	**40 - 400 °C** **40 - 800 °C**	[*10^{-6}/K]	JIS R 1618	Parallel to Axis c Vertical to Axis c	7.7 7.0
Thermal conductivity		[W/(m*K)]	JIS R 1611	41	
Specific heat capacity		[J/(g*K)]	JIS R 1611	0.75	
Thermal shock temperature difference		[°C]	JIS R 1648	-	
Dielectric strength		[kV/mm]	JIS C 2141	48	
Volume resistivity	**20 °C** **300 °C** **500 °C**	[Ω*cm]	JIS C 2141	>10^{14} - 10^{10}	
Dielectric constant		-	JIS C 2141	Parallel to Axis c Vertical to Axis c	11.5 9.3
Dielectric loss angle		[*10^{-4}]	JIS C 2141	<1	
Loss factor		[*10^{-4}]	JIS C 2141	-	

The values are typical material properties and may vary according to products configuration and manufacturing process.
For more details, please feel free to contact us.

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