

Ruby Single Crystal

Formula: $Al_2O_3 / Cr_2O_3 / SiO_2$

Length 1: 20mm

Length 2: 20mm

Thickness: 1mm

CAS Number: 1344-28-1

UOM Code: 176-773-89

SKU: 1000009996-group

Product Code: AJ60-SH-000100

Material Properties for Ceramics

Chemical Resistance

Element	Value
Acids - concentrated	Good
Acids - dilute	Good
Alkalis	Good
Halogens	Good
Metals	Good

Electrical Properties

Element	Value
Dielectric constant	7.5-11.5
Dielectric strength(kV mm ⁻¹)	15-50
Volume resistivity(Ohmcm)	10 ¹² @25

Physical Properties

Element	Value
Useful optical transmission range	150-5500nm
Apparent porosity(%)	0
Water absorption - saturation(%)	0
Density(gcm ⁻³)	3.98

Thermal Properties

Element	Value
Melting point(C)	2050
Upper continuous use temperature(C)	1800-1950
Specific heat(J K ⁻¹ kg ⁻¹)	750@25°C
Thermal conductivity(W m ⁻¹ K ⁻¹)	35-40@20°C
Coefficient of thermal expansion(x10 ⁻⁶ K ⁻¹)	5.8@20-1000°C

Mechanical Properties

Element	Value
Tensile modulus(GPa)	350-390
Hardness - Knoop(kgf mm ⁻²)	2000
Hardness - Vickers(kgf mm ⁻²)	2500-3000
Tensile strength(MPa)	250-400

Pultrusions

Element	Value
Compressive strength(MPa)	2100