

Mateck Sapphire Aluminium oxide Substrate, Al2O3

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

Substrate single crystals for superconductivity.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Mateck-Sapphire-Aluminium-oxide-Substrate-Al2O3.php

Physical Properties	Metric	English	Comments
Density	3.98 g/cc	0.144 lb/in³	
a Lattice Constant	4.77 Å	4.77 Å	
c Lattice Constant	13.04 Å	13.04 Å	

Thermal Properties	Metric	English	Comments
CTE, linear	5.00 µm/m-°C	2.78 µin/in-°F	perpendicular C-axis
	6.70 µm/m-°C	3.72 µin/in-°F	parallel C-axis
Melting Point	2040 °C	3700 °F	

Electrical Properties	Metric	English	Comments
Dielectric Constant	9.0	9.0	parallel c-axis
	11.5	11.5	perpendicular c-axis
Dielectric Loss Index	0.000030	0.000030	parallel C-axis
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
	0.000086	0.000086	perpendicular C-axis
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	

Descriptive Properties	Value	Comments
Flatness (µm/10mm), max	0.3	
Growth Techniques	Czochralski	
Orientation	(0001), (1-102), (11-20)	
Orientation Accuracy (°), Max	0.5	
Parallelness (°), max	0.3	

Polishing Descriptive Properties	one side or both sides epi-polished Value	Comments
Production Method	Czochralski, HEM, Verneuil	
Roughness of surface (angstroms), max	10	
Scratches	none	
Standard Size (mm)	10 x 10 x 1 or 0.5	
State	monocrystalline	
Structure	hexagonal	
Surface Quality	with light microscope without defects	
Tolerance of Length (mm)	± 0.02	
Tolerance of Thickness (mm)	± 0.02	

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