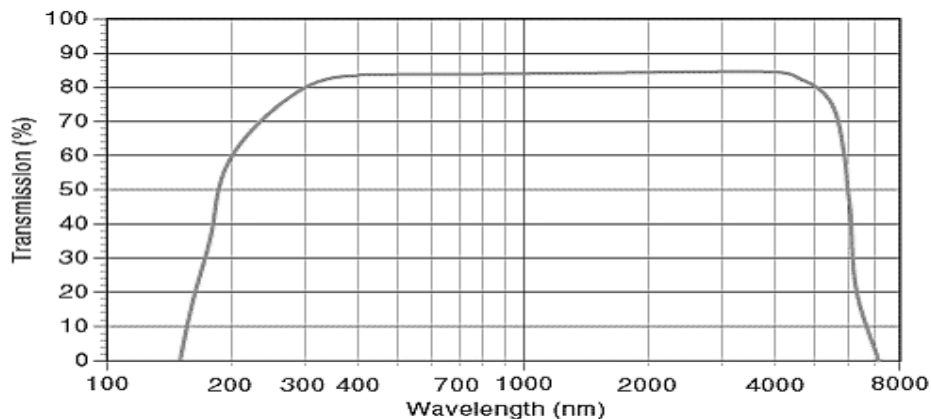


PROPERTIES OF SYNTHETIC SAPPHIRE (AT APPROX. 25°C)

	Units	Value
General		
Chemical Formula		Al ₂ O ₃
Optical		
Index of refraction (at 589.3nm)		No: 1.768 (c-axis) Ne: 1.760 (c-axis)
Birefringence		(No-Ne) 0.008
Mechanical		
Density	g/cm ³	3.97
Compressive Strength	PSI	300,000
Young Modulus	kg/cm ²	79 x 10 ⁶
Flexural Strength	PSI	100,000
Tensile Strength	PSI	58,000
Poisson's Ratio		0.28 (depending on orientation)
Hardness	mohs	9
Electrical		
Dielectric Strength	v/cm	480,000
Dielectric Constant (0-1Mhz)		11.5 parallel to C-axis 9.3 perpendicular to C-axis
Volume Resistivity	ohm-cm	>10 ¹⁴
Thermal		
Maximum Temperature (continuous)	°C	2000
Coefficient of Expansion	°C	4.3 x 10 ⁻⁶ /°C (perpendicular to C-axis) 5.4 x 10 ⁻⁶ /°C (parallel to C-axis)
Conductivity	W/mk	46
Specific Heat (0°-100°C)	cal/g°C	0.16

Transmission of Synthetic Sapphire



This data is representative based on composite data from several sources and is not meant to be absolute.