

**Saphir
für VIS und IR-Bereich**

**Sapphire
for VIS and IR-range**

Formula	Al ₂ O ₃			
Growth method	Czochralski technique Brigdeman technique			
Max. sizes, (mm)	Ø150			
Transmission range, (µm) (Thickness 10 mm)	0.17 - 5.0			
Structure	hexagonal			
Density (g/cm ³)	3.98			
Melting point (°C)	2030			
Hardness (Mohs)	9			
Thermal expansion coefficient (10 ⁻⁶ /K)	vertical c-axis: 3.24 - 5.66			
Thermal conductivity (W m ⁻¹ K ⁻¹)	vertical c-axis: 23.1 parallel c-axis: 25.2			
Specific heat capacity (J kg ⁻¹ K ⁻¹)	761			
Solubility in water (g/100 cm ³)	98 x 10 ⁻⁶			
Solubility in acids	insoluble			
Solubility in organic solvents	undeclared			
Wavelength (µm)	1.0	2.0	3.0	4.0
Refractive index n _o	1.7545	1.7374	1.7015	1.6748
n _e	1.7460	1.7299	1.6920	1.6679
Absorption coefficient (cm ⁻¹)	0.20 at 0.2 µm 0.02 at 0.4 µm 0.46 at 5.0 µm			

Transmission spectrum:

