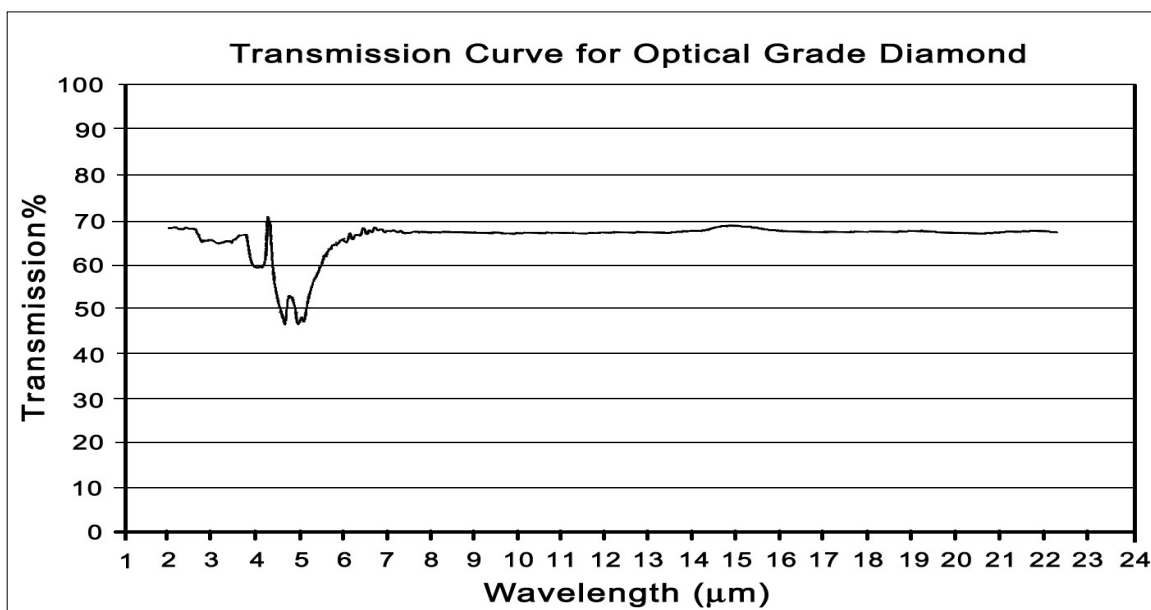




Optical Properties	Value
Refractive Index	2.417
Optical Dispersion	0.044
Optical Absorption	$< 0.04 \text{ cm}^{-1}$ (10.6 μm)



Mechanical Properties	Value
Strength, Compression	$>110\text{GPa}$
Strength, Fracture	1000MPa
Strength, Tensile	0.5-1.4GPa
Atom Density	$1.77 \times 10^{23} / \text{cm}^3$
Young's Modulus	900-1100GPa
Poisson's Ratio	0.069
Hardness (Knoop)	5,700kg/mm ²
Density	3.515gm/cm ³
Coeff. of Friction	0.035-0.30

Electronic Properties	Value
Sound Velocity (20°C)	17,500 m/s
Debye Temperature (0-800°C)	1860°K
Electron Mobility (25°C)	480cm ² /Vs
Dielectric Constant 45MHz-20GHz	5.6
Hole Mobility	1,600 cm ² /Vs
Band gap	5.45 eV
Loss Tangent	$\tan d = 2 \times 10^{-5}$ at 100 GHz

Our extensive knowledge of diamond and years of practical application have allowed us to tailor fit our materials to your particular needs.

Electrical Properties	Value
Electrical Resistivity	$>10^{14}$ ohm-cm
Dielectric Strength	10^7 V/cm

Thermal Properties	Value
Heat Capacity (25 °C)	0.510 J/g-K
Thermal Conductivity (25 °C)	ASTM Flash Method
High Grade	1800 W/mK
Medium Grade	1100 W/mK
Low Grade	700 W/mK
Graphitization in inert atmosphere (or vacuum) @ 1500 °C	
Oxidation @ 600 °C	

