

Quartz (SiO₂)

Custom sizes and specifications are available

CRYSTALLOGRAPHIC

Syngony	Hexagonal
Symmetry Class	P ₃ 2 ₁
Lattice Constants, Angstrom	a=4.9138 c=5.4052

OPTICAL

Refractive Index n_o at n_{0,436}	1.5538
Refractive Index n_e at n_{0,436}	1.5632
Thermal Coefficient of Refractive Index in air at 340 nm for +20/+100 deg C	
n_o	-5.01 x 10 ⁻⁶
n_e	-3.93 x 10 ⁻⁶
Transmission Range, microns	0.15-3.3

THERMAL

Thermal Linear Expansion, deg C ⁻¹ for 0/+20 deg C	13.24 x 10 ⁻⁶
Thermal Conductivity, W/(m•deg C) at 25 deg C	
n_o	6.82
n_e	11.43
Specific Heat Capacity, J/(kg•deg C)	0.741 x 10 ³
Melting Point, deg C	1470

MECHANICAL

Density, g/cm ³ at 20 deg C	2.649
Mohs Hardness	7
Vickers Microhardness, Pa	981 x 10 ⁷
Young Modulus (E), Pa	
n_o	8.7 x 10 ¹⁰
n_e	10.5 x 10 ¹⁰

CHEMICAL

Molecular Weight	60.06
Solubility in water, gram/100 cm ³	insoluble

Refr. Index n vs. Wavelength λ

WAVELENGTH, MICRONS	REFRACTIVE INDEX	
	n_o	n_e
0.2001	1.6493	1.6623
0.2503	1.6003	1.6114
0.3034	1.5770	1.5872
0.4047	1.5572	1.5667
0.5086	1.5482	1.5575
0.6438	1.5423	1.5513
1.0000	1.5350	1.5438
1.2000	1.5323	1.5410
1.4000	1.5297	1.5383
1.6000	1.5270	1.5355
1.8000	1.5241	1.5324
2.5000	1.5116	1.5195
3.0000	1.4996	1.5070

