

# Silicon (Si)

Custom sizes and specifications are available

## CRYSTALLOGRAPHIC

Syngony	Cubic
Symmetry Class	m3m Fd3m
Lattice Constants, Angstrom	$a = 5.43089$

## OPTICAL

Refractive Index at $n_{3,0}$	3.436
Refractive Index at $n_{5,0}$	3.426
Thermal Coefficient of Refractive Index at 25 deg C	$1.50 \times 10^{-4}$
Transmission Range, Microns	1.2-10, 50-100

## THERMAL

Thermal Linear Expansion, deg C <sup>-1</sup> for 25 deg C	$2.55 \times 10^{-6}$
Thermal Conductivity, W/(m * deg C) at 27 deg C	159
Specific Heat Capacity, J/(kg * deg C)	$0.712 \times 10^3$
Melting Point, deg C	1412

## MECHANICAL

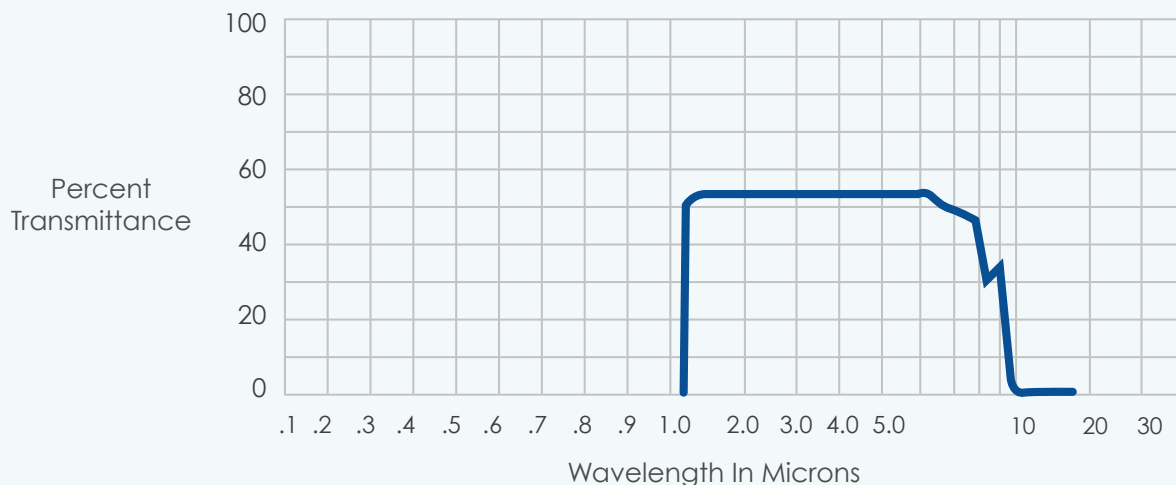
Density, g/cm <sup>3</sup> at 20 deg C	2.329
Mohs Hardness	7
Young Modulus E, Pa	$1.89 \times 10^{10}$
Shear Modulus (G), Pa	$7.99 \times 10^{10}$
Poisson Ratio	0.266

## CHEMICAL

Molecular Weight	28.09
Solubility	insoluble
in water, gram/100cm <sup>3</sup>	

Refr. Index n vs. Wavelength $\lambda$	
WAVELENGTH, MICRONS	REFRACTIVE INDEX
1.5	3.484
2.0	3.456
3.0	3.436
4.0	3.429
5.0	3.426
6.0	3.424
7.0	3.423
8.0	3.422
9.0	3.422

Transmittance  $\tau$  ( $\lambda$ ) vs. Wavelength  $\lambda$



**ISP Optics Corp:**  
 2603 Challenger Tech Court, Suite 100  
 Orlando, FL 32826  
 Tel: +800-909-4207  
[www.ispoptics.com](http://www.ispoptics.com)

**ISP Optics Latvia:**  
 24a Ganibu Dambis, korp 13  
 Riga, LV-1005, Latvia  
 T: +371 67 323 779  
[sales@ispoptics.eu](mailto:sales@ispoptics.eu)



A LightPath COMPANY