

## Mateck Quartz Crystalline (SiO<sub>2</sub>)

Category : Ceramic , Oxide , Silicon Oxide

Material Notes:

Optical crystals

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Mateck-Quartz-Crystalline-SiO2.php](http://www.lookpolymers.com/polymer_Mateck-Quartz-Crystalline-SiO2.php)

Physical Properties	Metric	English	Comments
Density	2.649 g/cc @Temperature 20.0 °C	0.09570 lb/in <sup>3</sup> @Temperature 68.0 °F	
Solubility	0.00 ppm	0.00 ppm	
a Lattice Constant	4.9138 Å...	4.9138 Å...	
c Lattice Constant	5.4052 Å...	5.4052 Å...	
Molecular Weight	60.06 g/mol	60.06 g/mol	

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	9810	9810	MPa
Hardness, Mohs	7.0	7.0	
Modulus of Elasticity	87.0 GPa	12600 ksi	no
	105 GPa	15200 ksi	ne

Thermal Properties	Metric	English	Comments
CTE, linear	13.24 µm/m-°C @Temperature 0.000 - 20.0 °C	7.356 µin/in-°F @Temperature 32.0 - 68.0 °F	
Specific Heat Capacity	0.741 J/g-°C	0.177 BTU/lb-°F	
Thermal Conductivity	6.82 W/m-K @Temperature 25.0 °C	47.3 BTU-in/hr-ft <sup>2</sup> - °F @Temperature 77.0 °F	
	11.43 W/m-K @Temperature 25.0 °C	79.32 BTU-in/hr-ft <sup>2</sup> - °F @Temperature 77.0 °F	
Melting Point	1470 °C	2680 °F	

Optical Properties	Metric	English	Comments
Refractive Index	1.5538	1.5538	at n0.436
	1.5632	1.5632	at n0.436
	1.4996	1.4996	
	@Wavelength 3000 nm	@Wavelength 3000 nm	
	1.507	1.507	
	@Wavelength 3000 nm	@Wavelength 3000 nm	
	1.535	1.535	
	@Wavelength 1000 nm	@Wavelength 1000 nm	
	1.5438	1.5438	
@Wavelength 1000 nm	@Wavelength 1000 nm		
1.6493	1.6493		
@Wavelength 200.1 nm	@Wavelength 200.1 nm		
1.6623	1.6623		
@Wavelength 200.1 nm	@Wavelength 200.1 nm		
IR Transmittance	10 %	10 %	Internal Transmittance
	@Wavelength 4100 nm	@Wavelength 4100 nm	
	80 %	80 %	Internal Transmittance
@Wavelength 3900 nm	@Wavelength 3900 nm		
98 %	98 %	Internal Transmittance	
@Wavelength 3000 nm	@Wavelength 3000 nm		
UV Transmittance	98 %	98 %	Internal Transmittance
	@Wavelength 200 nm	@Wavelength 200 nm	

Descriptive Properties	Value	Comments
Symmetry Class	P321	
Syngony	hexagonal	
Thermal Coefficient of Refractive Index	-3.93E-06	ne at 340 nm for 20/100Å°C
	-5.01E-06	no at 340 nm for 20/100Å°C
Transmission Range (microns)	0.15 - 3.3	

## **Contact Songhan Plastic Technology Co.,Ltd.**

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