Saint-Gobain VitreosilÂ® Clear Fused Quartz Tubing

Category : Ceramic , Glass , Oxide , Silicon Oxide

Material Notes:

Electrically fused quartz is recognized for its combination of purity, chemical inertness, physical stability, thermal shock resistance, high electrical resistivity, and high operating temperatures.General properties of Fused Silica and Fused quartz: A very wide transmission range from UV to near IR; extremely high optical transmission, excellent resistance to high power laser energy, excellent homogeneity, high temperature resistance, very low thermal expansion (resistance to thermal shock), and chemical inertness. General uses for optical quartz are microlithography optical systems, optical fibers, photomasks, laser optics, LCD displays, light guides, optical, IR , and UV windows, spectrophotometer cells, slides, optical pyrometers, and lamp bodies/components.Information provided by Saint-Gobain Quartz PLC.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Saint-Gobain-Vitreosil-Clear-Fused-Quartz-Tubing.php

Physical Properties	Metric	English	Comments
Density	2.21 g/cc	0.0798 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Knoop	820	820	
Vickers Microhardness	8000 - 10000	8000 - 10000	MPa Vickers DPH
Hardness, Mohs	6.0 - 7.0	6.0 - 7.0	
Tensile Strength, Ultimate	70.0 MPa	10200 psi	Safety factor of 10-20X is necessary in practice
Modulus of Elasticity	74.0 GPa	10700 ksi	
Flexural Strength	50.0 MPa	7250 psi	Bending Strength
Compressive Strength	2000 MPa	290000 psi	
Poissons Ratio	0.17	0.17	
Shear Modulus	32.0 GPa	4640 ksi	
Shear Strength	70.0 MPa	10200 psi	Safety factor of 10-20X is necessary in practice

Thermal Properties	Metric	English	Comments
CTE, linear	0.540 Âµm/m-Â°C @Temperature 0.000 - 1000 Â°C	0.300 Âµin/in-Â°F @Temperature 32.0 - 1830 Â°F	average
Specific Heat Capacity	0.750 J/g-Â°C	0.179 BTU/lb-Â°F	
	2.00 W/m-K	13.9 BTU-in/hr-ftÂ²-	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	Â°C	Â°F	
Maximum Service Temperature, Air	1050 Â°C	1920 Â°F	Normal Conditions
	1350 Â°C	2460 Â°F	Extended periods if cycles remain above 300Â°C
	1350 Â°C	2460 Â°F	
	1650 Â°C	3000 Â°F	Quick Immersion
Softening Point	1583 Â°C	2881 Â°F	Varies with thermal history
Annealing Point	1190 Â°C	2170 Â°F	Varies with thermal history
Strain Point	1108 Â°C	2026 Â°F	Varies with thermal history

Optical Properties	Metric	English	Comments
Refractive Index	1.457 @Wavelength 632.8 nm	1.457 @Wavelength 632.8 nm	n_{He-Ne}; Temperature Coefficient = 10.0 ppm/K
	1.4667 @Wavelength 435.83 nm	1.4667 @Wavelength 435.83 nm	n_g; Temperature Coefficient = 10.6 ppm/K
Transmission, Visible	90 %	90 %	Typical
UV Transmittance	75 % @Wavelength 220 - 250 nm	75 % @Wavelength 220 - 250 nm	

Component Elements Properties	Metric	English	Comments
SiO2	>= 99.9 %	>= 99.9 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	2.00e+10 ohm-cm @Temperature 800 Â°C	2.00e+10 ohm-cm @Temperature 1470 Â°F	
Dielectric Constant	3.78 @Frequency 100 - 2.50e+10 Hz	3.78 @Frequency 100 - 2.50e+10 Hz	
Dissipation Factor	0.000060 @Frequency 1e+9 Hz	0.000060 @Frequency 1e+9 Hz	
	0.00075	0.00075	

Electrical Properties	@Frequency 1000 Hz Metric	@Frequency 1000 Hz English	Comments

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