



INTERNATIONAL CERAMIC ENGINEERING

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Engineering Answers in Advanced Ceramics

Fused Quartz Property Data Sheet

<i>Properties</i>	<i>Measurements</i>	
<i>Physical Properties</i>	<i>Metric</i>	<i>English</i>
<i>Density</i>	2.2 g/cc	0.0795 lb/in ³
<i>Water Absorption</i>	0%	0%
<i>Mechanical Properties</i>		
<i>Hardness, Mohs</i>	5.5 – 6.5	5.5 – 6.5
<i>Modulus of Elasticity</i>	70 Gpa	10200 ksi
<i>Poisson's Ratio</i>	0.17	0.17
<i>Electrical Properties</i>		
<i>Dielectric Constant</i>	3.7 – 6	3.7 – 6
<i>Thermal Properties</i>		
<i>CTE, linear 20°C</i>	0.4 μm/m-°C	0.222 μin/in-°F
<i>CTE, linear 250°C</i>	0.7 μm/m-°C	0.389 μin/in-°F
<i>CTE, linear 500°C</i>	0.6 μm/m-°C	0.333 μin/in-°F
<i>CTE, linear 1000°C</i>	0.45 μm/m-°C	0.25μin/in-°F
<i>Heat Capacity</i>	0.7 J/g-°C	0.167 BTU/lb-°F
<i>Thermal Conductivity</i>	1.4 W/m-K	9.72 BTU-in/hr-ft ² -°F
<i>Optical Properties</i>		
<i>Refractive Index</i>	1.46	1.46
<i>Descriptive Properties</i>		
<i>Color</i>	Clear	

*The information set forth herein is offered by comparison only, and is not to be construed as absolute engineering data or constituting a warranty or representation for which we assume legal responsibility.

Fused quartz and fused silica products have a unique combination of thermal, optical and mechanical properties making them ideal for use in processes and conditions where other materials are not suitable. Their very high purity ensures minimum contamination in process applications, and their very low coefficient of thermal expansion allows them to withstand rapid heating and cooling with virtually no risk of breakage due to thermal shock. Fused quartz and fused silica products are also inert to most elements and compounds, including virtually all acids (with the exception of hydrofluoric and phosphoric), regardless of concentration and temperature, alkalis and some metallic oxides. Their very high electrical resistivity over a wide range of temperatures, together with their low thermal conductivity allow them to be used as an electrical and thermal insulating material in extremely arduous conditions.