



http://www.stemmerich.com

4728 Gravois Ave.  
St. Louis, MO 63116  
314-832-7726

SALES 800-325-9528  
FAX 314-832-7799

## Fused Silica

**DESCRIPTION:** Fused Silica offers the same thermal, physical and mechanical properties which are typical of all fused silica. This material is ideal for optical reference flats, test plates, structural members and high temperature view ports where fused silica properties such as low CTE are desired. It is available in substrate and optical (higher homogeneity) grades.

**APPLICATIONS:** Fused silica can be used where resistance to radiation darkening is required, such as in space or as long-term passive energy collectors.

**SHEET SIZES:** Up to about 18" x 25" with a wide variety of **AVAILABLE THICKNESSES** (per quotation).

### PROPERTIES:

**Refractive Index**  $n_d (\lambda = 589 \text{ nm}) = 1.4584$

**Dispersion**  $v = 67.8$

**Transmission (estimated at 2 mm thick)** @ 185 nm 88.2% @ 200 nm 89.4% @ 230 nm 91.1%  
@ 310 nm 92% @ 390 nm 92.7% 400-1240 nm 92%+  
Transmittance at varying levels from 1250 nm to 4400 nm

**Bubble Inclusion Class No. 0 upon request** (Max. cross-section of any single bubble or inclusion = 0.004")  
(Total cross-section of inclusions/100cm<sup>3</sup> = 0.03 mm<sup>2</sup>)

**Homogeneity** Substrate Grade: Not specified  
Optical Grade F:  $5 \times 10^{-6}$  (higher grades available on request)

**Thermal** CTE (0 - 200°C):  $5.7 \times 10^{-7}/^\circ\text{C}$   
Thermal Conductivity (25°C): 1.38 W/m°C  
Specific Heat (25°C): 0.177 cal/gm°C  
Thermal Diffusivity (25°C):  $8.4 \times 10^{-3} \text{ cm}^2/\text{sec}$ .

**Electrical** Dielectric Constant (25°C, 1 KHz): 3.79 Dielectric Loss Factor (25°C, 1 KHz): 0.00002

### Physical

Density	Softening Point	Strain Point	Annealing Point	Elastic (Young's) Modulus
2.202 g/cm <sup>3</sup>	1585°C	990°C	1075°C	7.3 x 104 M Pa @25°C