

FUSED SILICA (7980)

Precision Glass and Optics
3600 W. Moore Avenue, Santa Ana, CA 92704
714.540.0126 Fax 714.540.1482 info@pgo.com

Description:

Corning's Fused Silica offers the same thermal, physical and mechanical properties which are typical of all fused silica, including being colorless and having excellent transmission in the UV. 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.

Available Thicknesses: Wide variety - per quotation

Sheet Sizes: Up to about 18" x 25", depending on variables

Properties:

Refractive Index: $n_d(\lambda = 587.7 \text{ nm}) = 1.45846$
(approx.)

Dispersion: $v_d = 67.79$

Transmittance: (estimated at 2 mm thick)

@185 nm 88.2% @230 nm 91.1% @390 nm 92.7%

@200 nm 89.4% @310 nm 92% 400-1240 nm 92%+

Transmittance at varying levels from 1250 nm to 4400 nm

Thermal:

CTE (0-200°C)	$5.7 \times 10^{-7}/^{\circ}\text{C}$
Thermal Conductivity (25°C)	1.30 W/m°C
Specific Heat (25°C)	0.770 J/gm°C
Thermal Diffusivity (25°C)	$7.5 \times 10^{-3} \text{ cm}^2/\text{sec.}$
Softening point	1585°C
Annealing point	1042°C
Strain point	893°C

Bubble Inclusion Class No. 0 upon request:

(Max. cross-section of any single bubble or inclusion = 0.004")

(Total cross-section of inclusions /100 cm³ = 0.03 mm²)

Physical:

Density	2.201 gm/cm ³
Elastic (Young's) modulus	72.7 GPa @ 25°C

Electrical:

Dielectric Constant (25°C, 1 KHz)	~3.79
Dielectric Loss Factor (25°C, 1 KHz)	~0.00002

Applications:

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

Flatness, parallelism, cutting tolerances, roughness, cosmetic defects and visual inspection all conform to the specifications to be agreed upon by Precision Glass & Optics and the customer.

Homogeneity:

Substrate Grade	Not Specified
Optical Grade F	5×10^{-6} (higher grades available upon request)