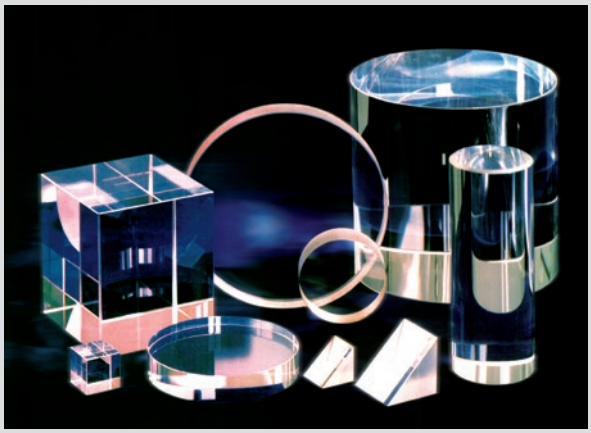
Heraeus

Spectrosil® 2000

Spectrosil® synthetic fused silica is manufactured using a patented, environmentally friendly process resulting in a glass of exceptional purity and excellent visual quality. It is a very homogeneous synthetic fused silica glass for deep UV optical applications.

Spectrosil® 2000 is chlorine-free, free of bubbles and inclusions and due to its ultra-high purity, has exceptional optical transmission in the deep ultraviolet and visible, with a useful range from below 180 nm through to 2000 nm.



Spectrosil® Grade	2000
■ **Refractive Index Homogeneity**[1)]	≤ 10 ppm achievable (must be specified if needed)
■ **Striae** ISO 10110-4	Class 5 in Functional Direction
■ **Birefringence / Residual Strain**[1)] (Typical values)	≤ 5 nm/cm
■ **Bubbles**	
Bubble class (DIN 58927)	0
Maximum number of inclusions[2)]	0
■ **Fluorescence**[3)] (254 nm excitations)	Free

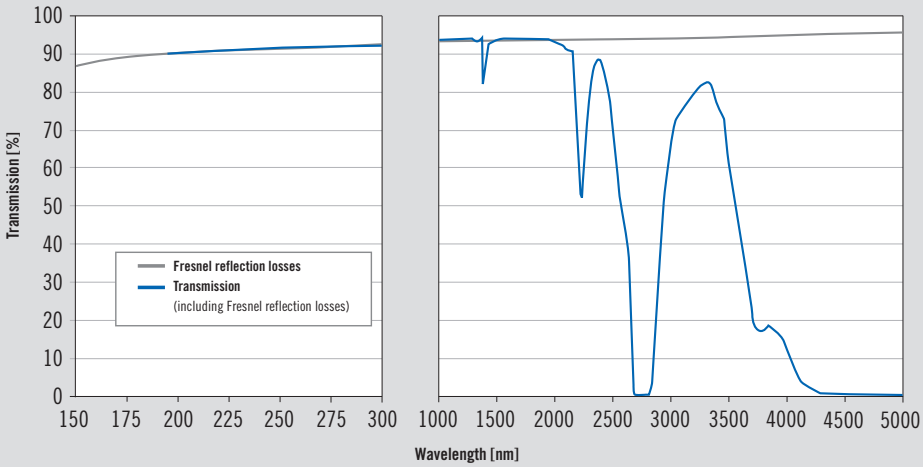
1) Stress induced birefringence and optical homogeneity are valid for 80% of the diameter of an ingot or for 90% diameter of a machined component.
2) Bubbles and Inclusions with ø ≤ 80 µm are not counted. Inclusions free down to 10 µm upon request.
3) Excitation by Hg-Lamp @ λ = 254 nm and UQ 5-filter; Lamp-power: 8W; Detection: adapted eye

Transmission – Typical Internal Transmission (10 mm path length)

	λ = 193.4 nm	**λ = 248 nm**
Spectrosil® 2000	> 98.5 %	> 99.5 %

Typical Transmission Spectrum

Sample thickness: 10 mm



Typical Chemical Analysis

Typical trace elements	in ppb	Al	Ca	Cr	Cu	Fe	K	Li	Mg	Na	Ti	V	in ppm	OH
Spectrosil® 2000		< 10	< 15	< 1	< 3	< 5	< 10	< 1	< 5	< 10	< 5	< 5		< 1350
		(below limits of detection)												

Technical Properties

Other Properties

Abbe number:	67.8
Density:	2.2 g/cm³
Hardness: (Mohs scale)	5.5 ... 6.5

Thermal Properties

Strain temperature*:	1025 °C
Annealing temperature*:	1120 °C
Softening temperature*:	1600 °C
Coefficient of thermal expansion: (Average, K^{-1} 0 ... 600 °C)	0.54 x 10^{-6}

*Note that these values may vary, depending on the thermal history of the glass.

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