

Spectrosil® 1000

Application:

- Semiconductor industry

Characteristics:

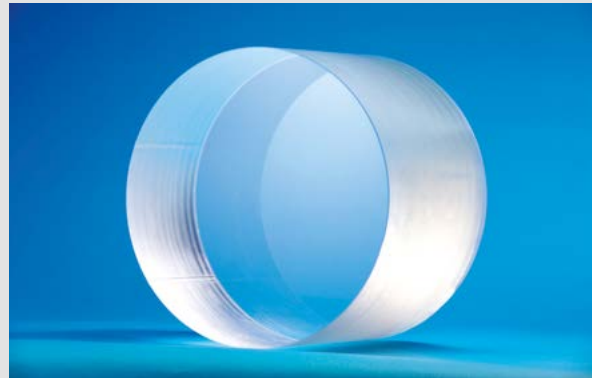
- Highest chemical purity
- Free of bubbles and inclusions
- Superior transmission in UV and IR
- Attractive performance/cost ratio

Spectrosil® 1000 synthetic fused silica is manufactured using an environmentally friendly process resulting in a glass of exceptional purity and excellent visual quality.

Spectrosil® 1000 has been designed for the highest demanding semiconductor applications.

Spectrosil® 1000 is chlorine-free, free of bubbles and inclusions, and provides an ultra-high purity which makes it one of the cleanest materials available.

Quartz components made from Spectrosil® 1000 eliminate the risk of contamination in plasma etch applications and sensitive deposition processes such as ALD.



In addition the superior transmission characteristics make it the ideal material for use in modern UV and IR assisted processes.

Sizes for 300 and 450 mm semi-conductor tools available.

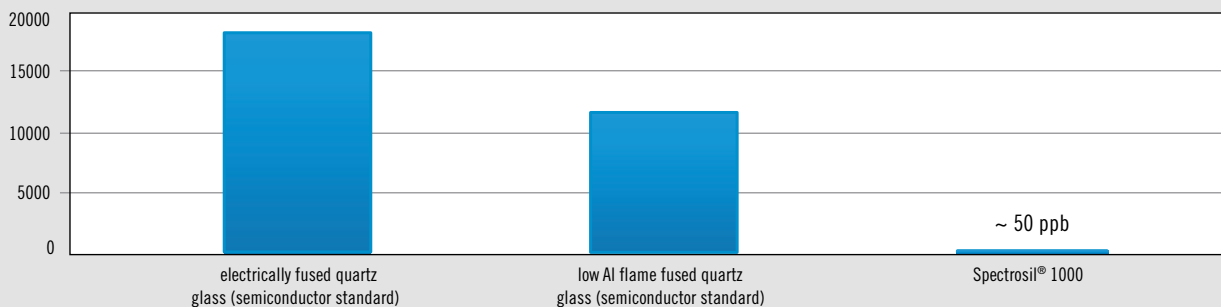
Max diameter of round ingots:

- up to 380 mm – direct fused ingots
- 420 – 700* mm – reflow ingots

*Larger sizes available on request

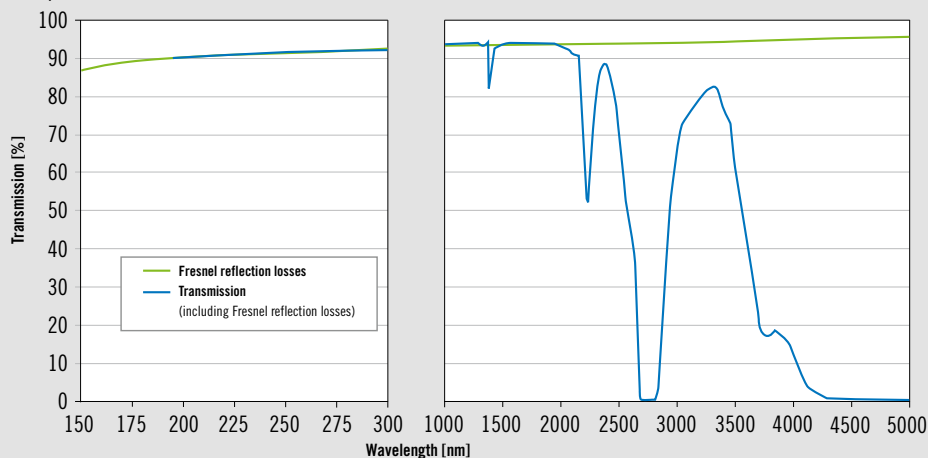
Comparison of typical level of metal impurities measured in high quality quartz glass types

Sum of Al, Ca, Cu, Fe, Na, K, Li, Mg, Ti in ppb.



Typical Transmission Spectrum

Sample thickness: 10 mm



Visual Properties

Bubbles

Bubble class (DIN 58927) 0

Maximum number of inclusions¹⁾ 0

¹⁾ Bubbles and Inclusion with $\varnothing \leq 80 \mu\text{m}$ are not counted.

Typical Chemical Analysis

Typical trace elements	in ppb	Al	Ca	Cr	Cu	Fe	K	Li	Mg	Na	Ti	V	in ppm	OH
Spectrosil® 1000		< 10	< 15	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 1350
(below limits of detection)														

Technical Properties

Other Properties

Abbe number:	67.8
Density:	2.2 g/cm ³
Hardness:	5.5 ... 6.5
(Mohs scale)	

Thermal Properties

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

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

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