

Nerasil®

High-Performance Black Fused Silica

Nerasil is a black fused silica that can be machined just like transparent fused silica. Its special optical properties make it an excellent choice for all applications where a high degree of absorption is required. Even at only 1 mm thickness, the transmission in the visual up to 1000 nm is less than 0.5%. With increased thickness the performance can be improved. Under irradiation with 250 nm a luminescence at around 530 nm can be observed.

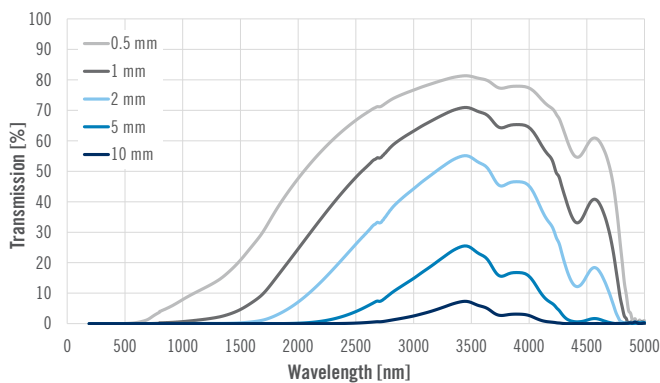
Possible applications

- Mirror substrates, as Nerasil suppresses unwanted reflections
- Ferrules for optical elements to suppress stray light
- Back sides of cuvettes to eliminate signals from the walls



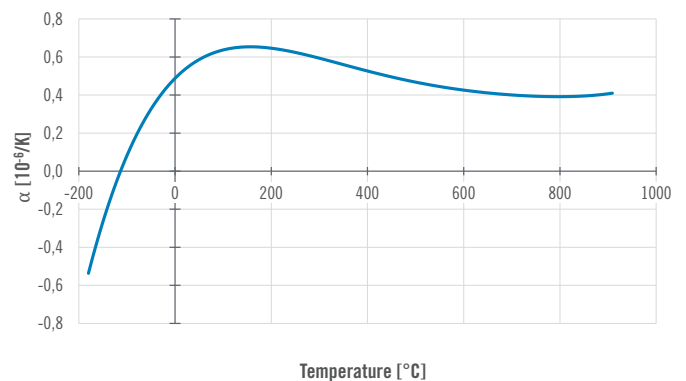
Optical Properties

Typical Transmission (polished surface)



Physical Properties

Thermal Expansion Coefficient α



Chemical Properties

OH Content	< 50 ppm
SiO ₂ Content	> 99.2%

Physical Properties

Density	2.21 g/cm ³
Vickers Hardness	792 HV 2 15
Young's Modulus	(72.2 ± 0.7) kN/mm ²
Shear Modulus	(31.0 ± 0.3) kN/mm ²
Poisson's Ratio	0.164
Attenuation	0.1 × 10 ⁻³
Sound Velocity (Longitudinal)	5910 m/s
Sound Velocity (Transversal)	5720 m/s

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