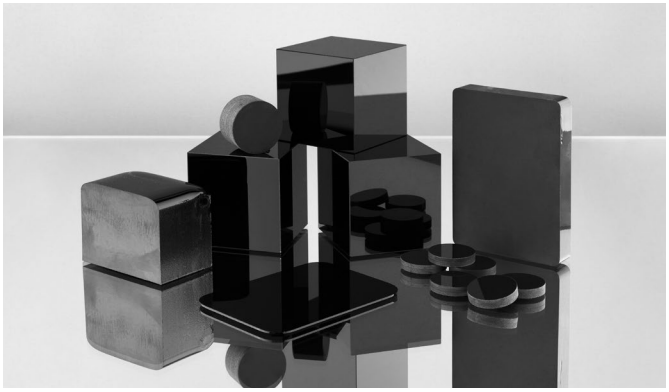
Nerasil®

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.



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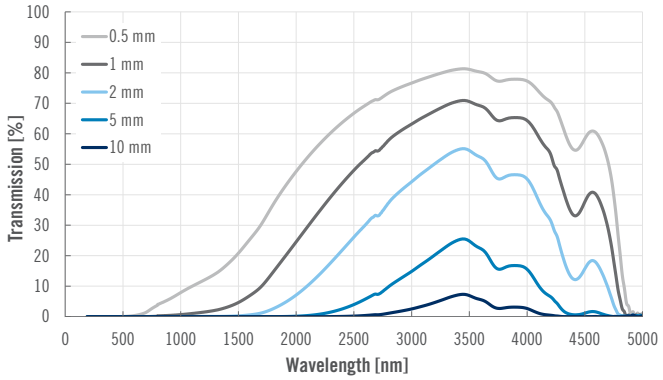
Possible applications

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

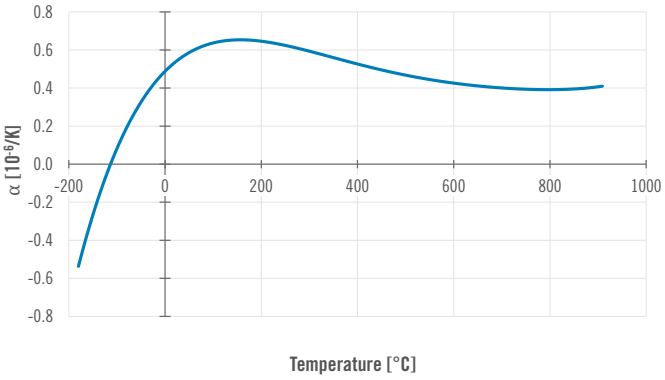
Optical Properties

Typical Transmission (polished surface)

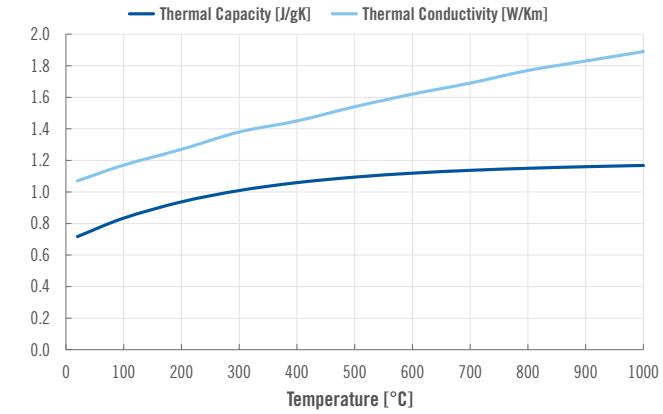


Physical Properties

Thermal Expansion Coefficient α



Thermal Properties



Physical Properties

Density	2.2 g/cm³
Vickers Hardness	792 HV 2 15
Young's Modulus (dynamic)	72.2 kN/mm²
Shear Modulus	31.0 kN/mm²
Poisson's Ratio	0.164
Sound Velocity (Longitudinal)	5910 m/s
Sound Velocity (Transversal)	5720 m/s

Chemical Properties

OH Content	< 50 ppm
SiO_2 Content (weight)	> 99.2%

CONTACT

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