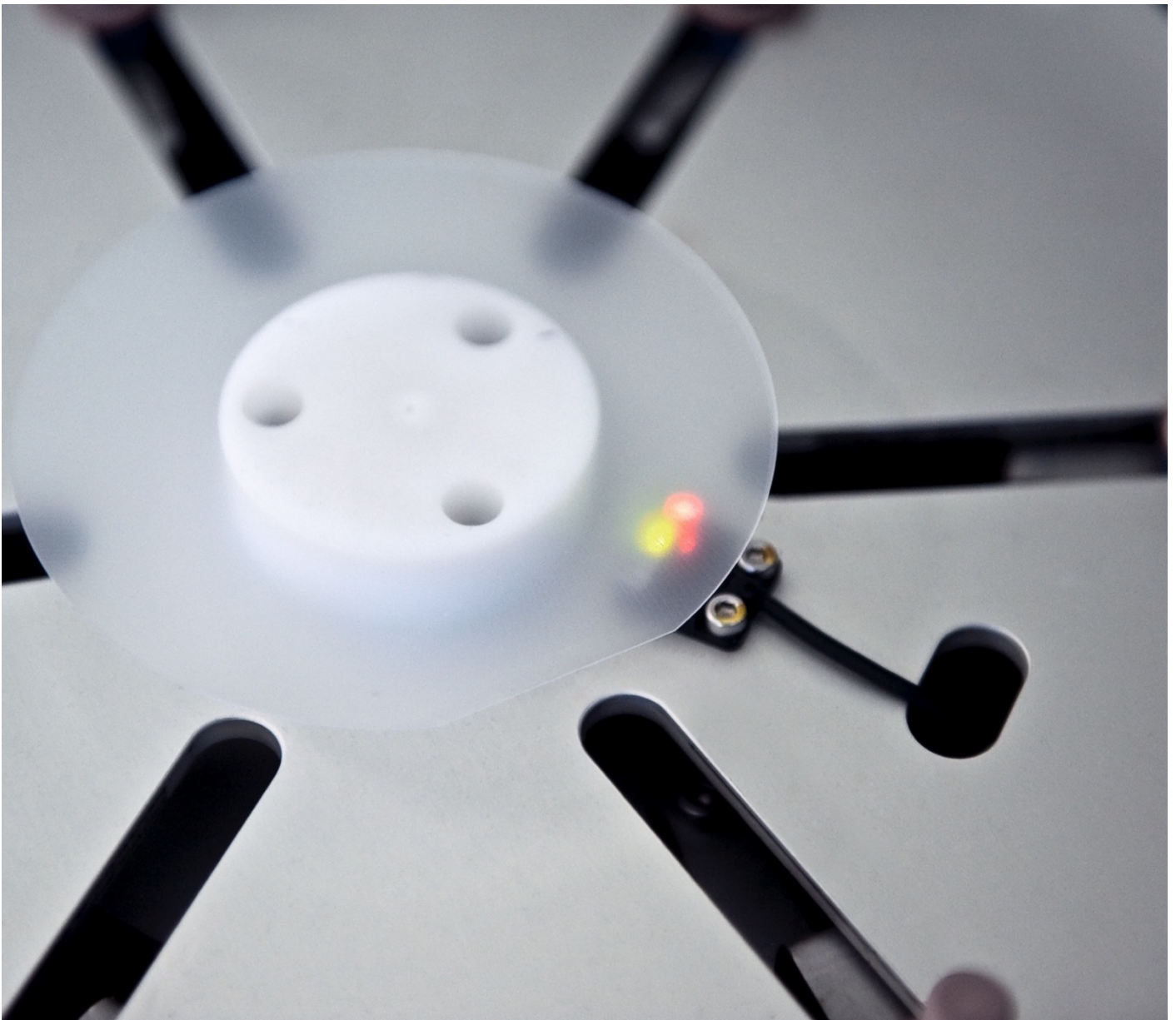


MATERIAL DATASHEET

FUSED SILICA WAFER



FUSED SILICA WAFER

High Purity amorphous SiO₂

very low trace metal content
very good chemical purity

virtually bubble and inclusion free

transmission > 90% @ 200..2000 nm

used in semiconductor, optical and other applications



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Impurities

< 1 ppm metallic impurities

OH content 800..1000 ppm

Mechanical Properties

Density [g/cm ³]	2.20
Knoop Hardness N/mm ²	5,100
Modulus of elasticity (at 25°C) N/mm ²	73,000
Poisson's Ratio	0.16
Compressive strength (approx.) N/mm ²	1,140
Tensile strength (approx.) N/mm ²	54
Shear Modulus (N/mm ²)	31,000

Thermal Properties

Thermal Data	
Softening temperature °C	1585
Annealing Temperature °C	1042
Strain Temperature °C	839

Heat Conductivity [W/m*K] @ 25 °C	1.38
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Mean thermal expansion coefficient [K ⁻¹]	
-100 ... 200 °C	4.8 x 10 ⁻⁷
5... 35 °C	5.2 x 10 ⁻⁷
0 ... 200 °C	5.7 x 10 ⁻⁷

Mean specific heat [J/kg K]	770
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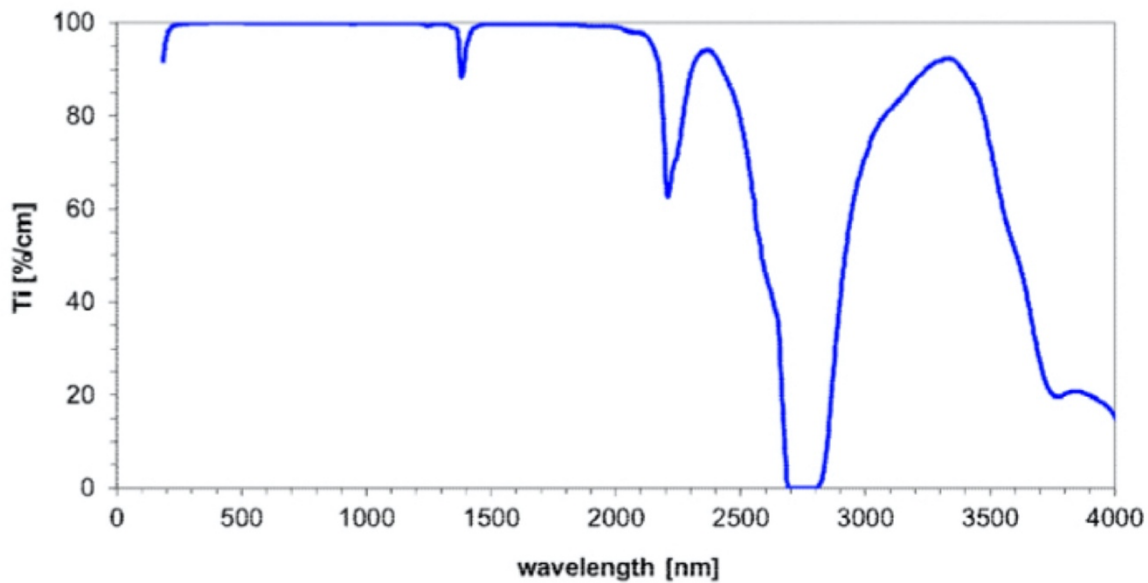
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Optical Properties

Refractive Index n_d	1.46
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Optical transmission (5 mm sample thickness)



Internal transmittance only – no reflection losses considered (up to 4% per side)

Thinner wafers (< 1 mm) will show higher transmission.

Absorption at about 1400 nm will virtually disappear which will lead to a transmission of > 90% from about 200 to 2000 nm wavelength.

Electrical Properties

Dielectric constant (ϵ)	
20 °C 0 ... 10 ⁶ Hz	3.8



Disclaimer:

The above data has been taken from the original raw material specification of the raw material producer. Completeness and validity cannot be guaranteed.

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