

SCHOTT RESISTAN®

The Multi-Talented Material Family for Extreme Conditions

Material:
701 - 6

MS1005581-00

Product information

RESISTAN® is a family of high performance ceramics featuring outstanding technical properties suitable for a wide range of applications.

Optical Characteristics

Appearance

Appearance	Translucent
Colour	Grey

Transmission

T (t_{sample} = 3.6 mm)

T (λ, 600 nm)	[%]	0
T (λ, 700 nm)		10
T (λ, 1000 nm)		65
T (λ, 1600 nm)		80

Refractive Index

n _g (λ, 435.8 nm)	n/a
n _{F'} (λ, 480.0 nm)	n/a
n _F (λ, 486.1 nm)	n/a
n _e (λ, 546.1 nm)	n/a
n _d (λ, 587.6 nm)	n/a
n _{C'} (λ, 643.8 nm)	n/a
n _C (λ, 656.3 nm)	n/a

Abbé Number

v _e (λ, 546.1 nm)	n/a
v _d (λ, 587.6 nm)	n/a

Mechanical Characteristics

Density ρ	[g/cm ³]	2.51
Young's Modulus E	[10 ³ MPa]	87
Poisson's Ratio μ		0.26
Knoop Hardness	HK 0.1/20	575
Bending Strength σ _{bb}	[MPa]	105

Chemical Resistance

Acid	S	1
Alkali	A	1
Hydrolytic	HGB	1

Thermal Characteristics

Heat Capacity c _p (20–100°C)	[J/(g·K)]	0.85
Thermal Conductivity λ (90°C)	[W/(m·K)]	1.7
Maximum Temperature Gradient	[K]	680
Thermal Shock Resistance	[°C]	820

Linear Expansion Coefficient

α (-50°C, 100°C)	[10 ⁻⁶ /K]	on request
α (0°C, 50°C)		on request
α (20°C, 300°C)		0.64
α (300°C, 700°C)		1.17

Temperature/Time Load Capacity

		Hom.	Inhom.
Short Heating (1 h)	[°C]	910	700
Continuous Heating (5000 h)		700	660

Electrical Characteristics

log ρ (250°C)	[Ω·cm]	7.0
log ρ (350°C)		5.5
t _{k100}	[°C]	197
ε _r (1 MHz, 25°C)		6.3
tan δ (1 MHz, 25°C)		0.004

Acoustical Characteristics

v _{long.}	[m/s]	6520
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Remarks

All technical data are to be understood as typical averages.

SCHOTT RESISTAN[®]

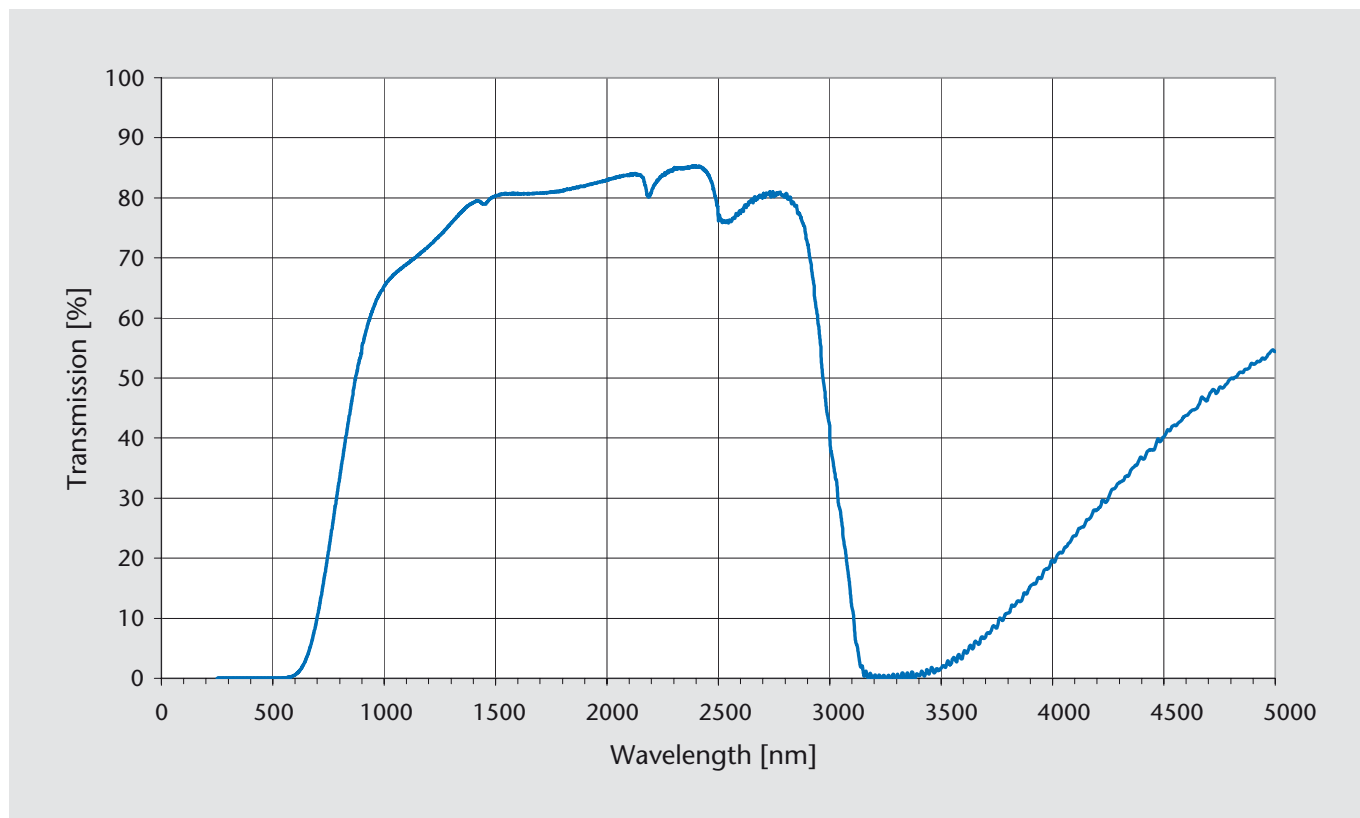
Body-Tinted Translucent Ceramic

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Transmission

The transmission values are measured for a polished sample of a specific thickness. A typical transmission graph with sample thickness of approximately 4 mm is shown below.



For more information please contact:

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SCHOTT
glass made of ideas