

## Material Data Sheet

MS 1 00 62 81 - 01

## SCHOTT Nextrema™ Transparent / Non Transparent Ceramics

Material: 724 - 3

**Optical Characteristics**

Appearance		
Appearance	Transparent	
Colour	Slightly amber hue	
Transmission <sup>1)</sup>		
$\lambda$ [nm]	T (t <sub>sample</sub> = 4mm)	
400	[%]	68
600		87
700		90
1600		88
Refractive Index <sup>1)</sup>		
$n_g$	(435.8 nm)	1.5566
$n_F$	(480.0 nm)	1.5518
$n_F$	(486.1 nm)	1.5513
$n_e$	(546.1 nm)	1.5468
$n_d$	(587.6 nm)	1.5445
$n_C$	(643.8 nm)	1.5420
$n_C$	(656.3 nm)	1.5415
Abbé Value <sup>1)</sup>		
$v_e$	(546.1 nm)	55.64
$v_d$	(587.6 nm)	55.89

**Mechanical Characteristics**

Density $\rho$	[g/cm <sup>3</sup> ]	2.54
Young Modulus E	[10 <sup>3</sup> MPa]	93
Poisson Ratio $\mu$	-	0.25
Knoop Hardness	HK 0.1 / 20	570
Bending Strength $\sigma_{bB}$	[MPa]	135

**Chemical Resistance**

Acid	S	2
Alkali	A	1
Hydrolytic	HGB	1

<sup>1)</sup> The values are typical averages. In case the material must fulfil optical requirements, individual analysis of each batch is possible

**All technical data presented on this sheet are to be understood as typical averages**

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**Thermal Characteristics**

Heat Capacity $c_p$ (20-100°C)	[J/(g·K)]	0.8	
Thermal Conductivity $\lambda$ (90°C)	[W/(m·K)]	1.6	
Max. Temp. Gradient (MTG)	[K]	800	
Thermal Shock (TSR)	[°C]	820	
Linear Expansion Coefficient			
$\alpha$ (-50, 100°C)	[10 <sup>-6</sup> /K]	-0.56	
$\alpha$ (0, 50°C)		-0.54	
$\alpha$ (20, 300°C)		-0.28	
$\alpha$ (300, 700°C)		0.13	
Temp. Time Load Capacity (TTLC)		Hom.	Inhom.
Short Heating (1h)	[°C]	925	750
Continuous Heating (5000h)		710	560

**Electrical Characteristics**

$\log \rho$ (250°C)	[ $\Omega \cdot \text{cm}$ ]	6.6
$\log \rho$ (350°C)		5.3
$t_{k100}$	[°C]	175
$\epsilon$ (1MHz, 25°C)	-	7.8
$\tan \delta$ (1MHz, 25°C)	-	0.019

**Acoustical Characteristics**

$v_{\text{long}}$	[m/s]	6600
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**Remarks**

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# Material Data Sheet

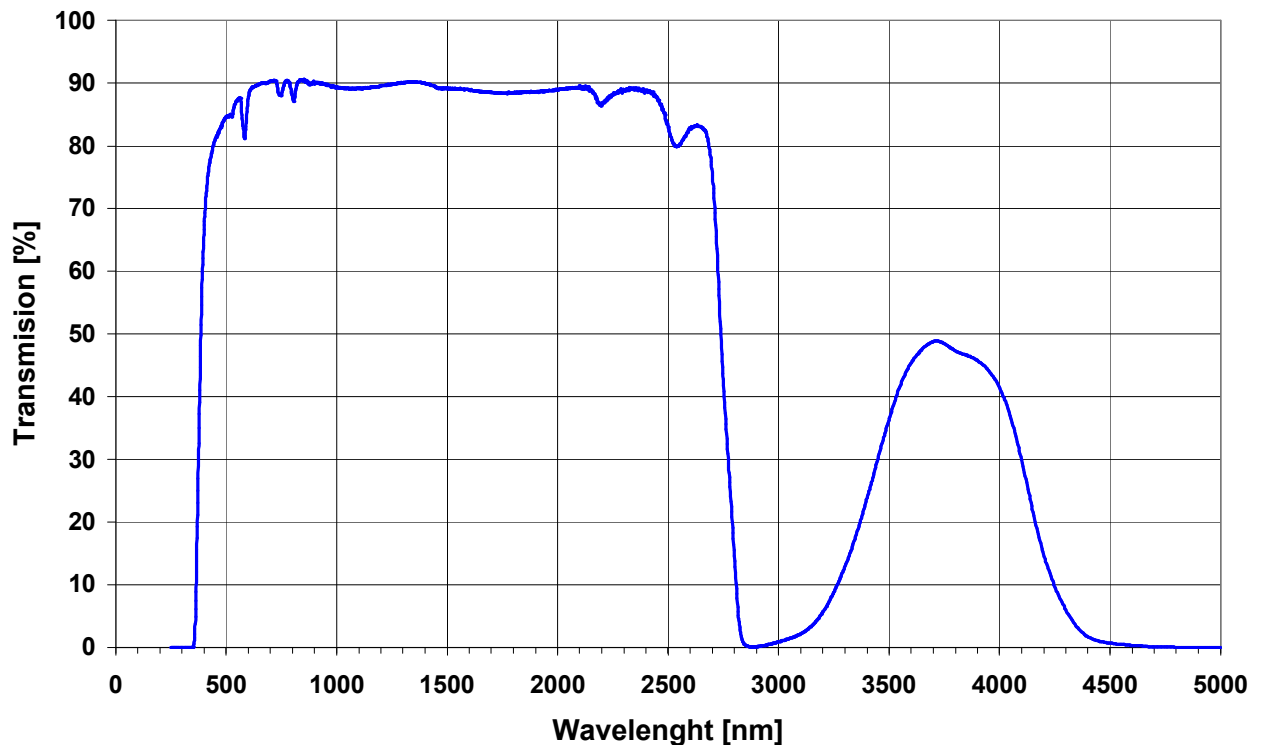
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### Transmission

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.



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