

## NG9

Optical properties	
Reflection factor	
$P_d = 0,921$	
Spectral values guaranteed	
$\tau_i$ (405 nm)	= 0,03 ± 0,01
$\tau_i$ (546 nm)	= 0,04 ± 0,02
$\tau_i$ (694 nm)	= 0,08 ± 0,02
Refractive indices	
$n_d$ (587,6 nm) = 1,51	
Sellmeier coefficients	
on request	
Internal quality	
Bubble class	2

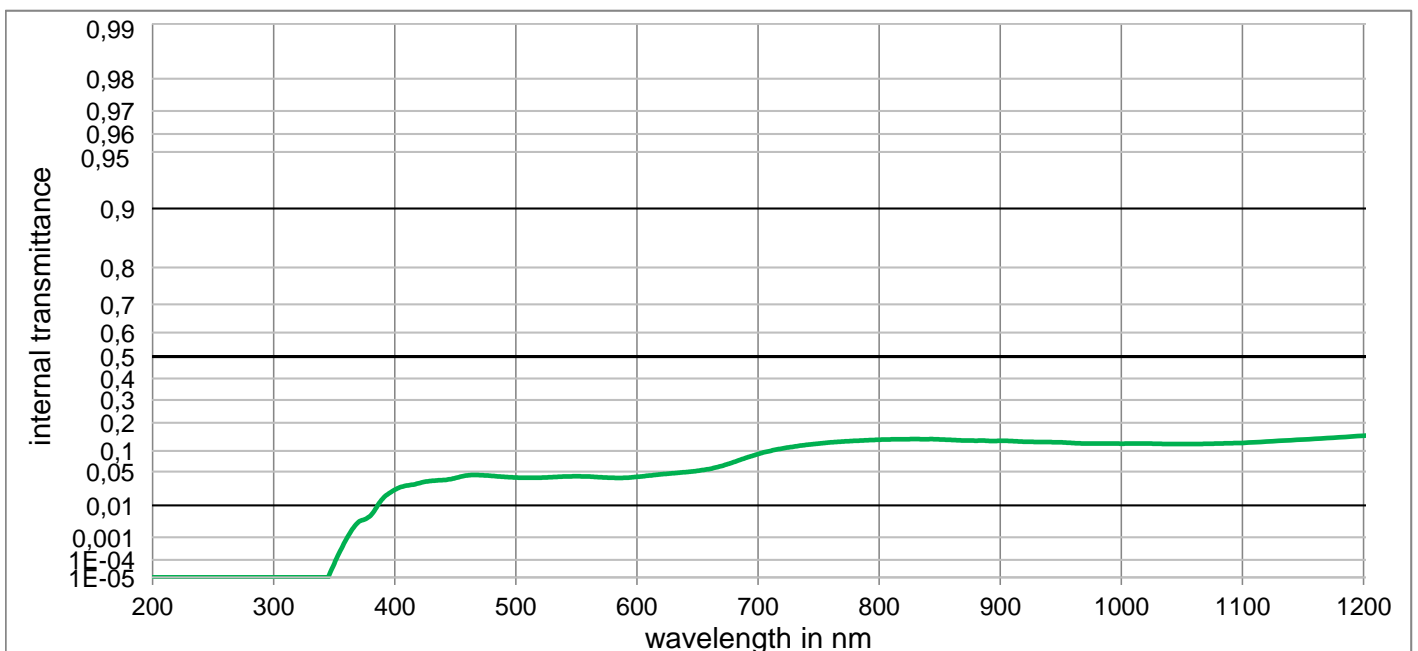
Mechanical properties	
Reference thickness	
$d = 1,00$ mm	
Density	
$\rho = 2,44$ g/cm <sup>3</sup>	
Knoop hardness	
HK[0.1/20] = 420	

Thermal properties	
Transformation temperature	
$T_g = 469$ °C	
Thermal expansion in $10^{-6}/K$	
$\alpha$ (-30°C/+70°C)	= 6,5
$\alpha$ (20°C/300°C)	= 7,0

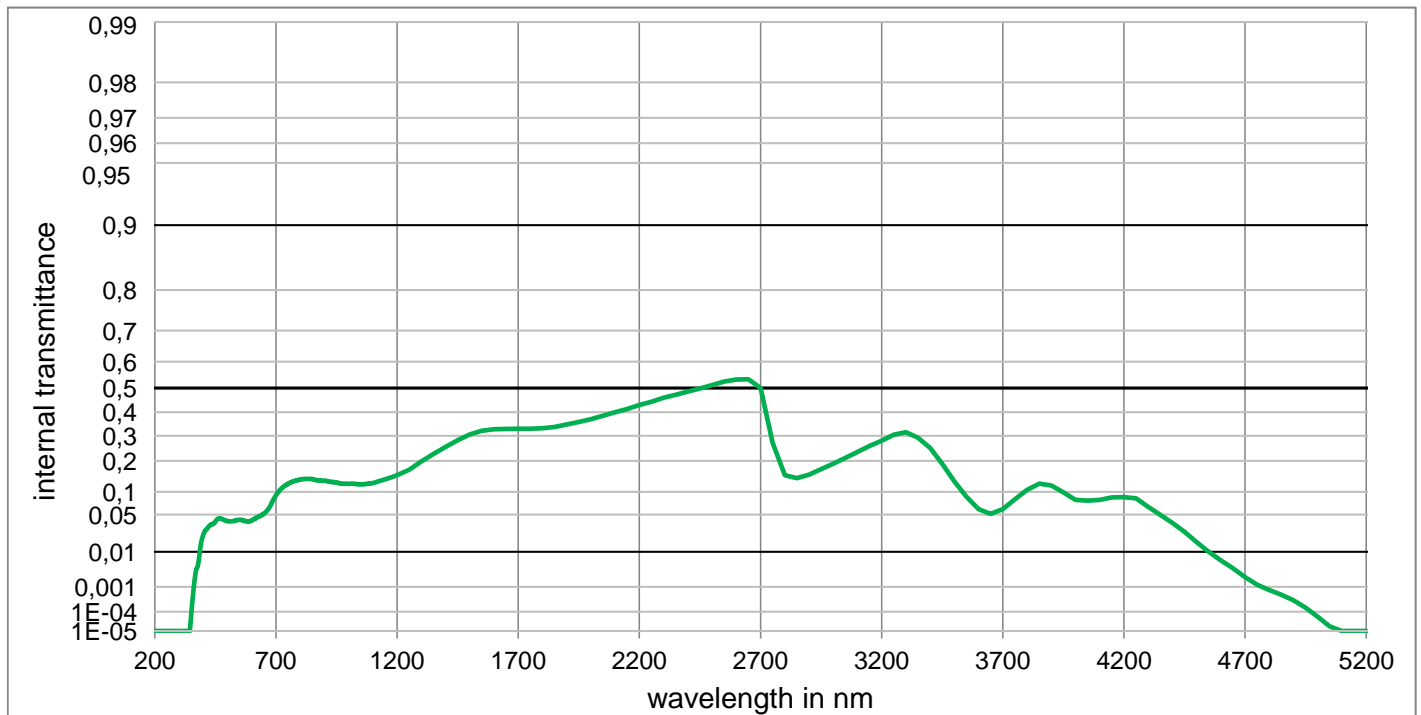
Chemical properties	
Chemical resistance	
FR class	= 1
SR class	= 3,2
AR class	= 2

Colorimetric properties				
		1 mm	2 mm	3 mm
Illuminant D65	x			
	y			
	Y			
	$\lambda_d$			
	$P_e$			
Illuminant A	x			
	y			
	Y			
	$\lambda_d$			
	$P_e$			

Notes	
Ionically colored glass	
Neutral density filter	
DIN 58131	
Disclaimer	
All data without tolerances are to be understood to be reference values	



## NG9



**Internal transmittance  $\tau_i$  at reference thickness**  
 The internal transmittance values, tabulated and graphically represented, are reference values only

$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$	$\lambda$ /nm	$\tau_i$
200	< 1,0E-05	500	3,959E-02	800	1,359E-01	1100	1,250E-01	2200	4,300E-01	3700	6,000E-02
210	< 1,0E-05	510	3,908E-02	810	1,369E-01	1110	1,273E-01	2250	4,442E-01	3750	8,100E-02
220	< 1,0E-05	520	3,933E-02	820	1,376E-01	1120	1,295E-01	2300	4,600E-01	3800	1,055E-01
230	< 1,0E-05	530	4,021E-02	830	1,381E-01	1130	1,318E-01	2350	4,731E-01	3850	1,231E-01
240	< 1,0E-05	540	4,120E-02	840	1,377E-01	1140	1,340E-01	2400	4,857E-01	3900	1,181E-01
250	< 1,0E-05	550	4,158E-02	850	1,368E-01	1150	1,364E-01	2450	4,982E-01	3950	9,860E-02
260	< 1,0E-05	560	4,120E-02	860	1,350E-01	1160	1,389E-01	2500	5,120E-01	4000	8,000E-02
270	< 1,0E-05	570	3,995E-02	870	1,330E-01	1170	1,414E-01	2550	5,259E-01	4050	7,810E-02
280	< 1,0E-05	580	3,908E-02	880	1,325E-01	1180	1,440E-01	2600	5,340E-01	4100	8,000E-02
290	< 1,0E-05	590	3,908E-02	890	1,319E-01	1190	1,469E-01	2650	5,347E-01	4150	8,590E-02
300	< 1,0E-05	600	4,067E-02	900	1,320E-01	1200	1,501E-01	2700	5,000E-01	4200	8,650E-02
310	< 1,0E-05	610	4,276E-02	910	1,310E-01	1250	1,686E-01	2750	2,710E-01	4250	8,356E-02
320	< 1,000E-05	620	4,500E-02	920	1,290E-01	1300	1,980E-01	2800	1,500E-01	4300	6,457E-02
330	< 1,000E-05	630	4,700E-02	930	1,280E-01	1350	2,268E-01	2850	1,404E-01	4350	4,966E-02
340	< 1,000E-05	640	4,900E-02	940	1,280E-01	1400	2,538E-01	2900	1,514E-01	4400	3,698E-02
350	6,412E-05	650	5,159E-02	950	1,270E-01	1450	2,814E-01	2950	1,700E-01	4450	2,590E-02
360	8,472E-04	660	5,537E-02	960	1,246E-01	1500	3,060E-01	3000	1,900E-01	4500	1,637E-02
370	3,404E-03	670	6,155E-02	970	1,229E-01	1550	3,217E-01	3050	2,112E-01	4550	1,000E-02
380	5,284E-03	680	7,039E-02	980	1,231E-01	1600	3,273E-01	3100	2,347E-01	4600	6,223E-03
390	1,464E-02	690	8,100E-02	990	1,231E-01	1650	3,292E-01	3150	2,582E-01	4650	3,784E-03
400	2,301E-02	700	9,104E-02	1000	1,226E-01	1700	3,300E-01	3200	2,800E-01	4700	2,089E-03
410	2,795E-02	710	1,000E-01	1010	1,231E-01	1750	3,300E-01	3250	3,040E-01	4750	1,186E-03
420	3,108E-02	720	1,074E-01	1020	1,232E-01	1800	3,317E-01	3300	3,149E-01	4800	7,727E-04
430	3,435E-02	730	1,134E-01	1030	1,221E-01	1850	3,368E-01	3350	2,923E-01	4850	5,176E-04
440	3,555E-02	740	1,186E-01	1040	1,214E-01	1900	3,474E-01	3400	2,500E-01	4900	3,148E-04
450	3,872E-02	750	1,228E-01	1050	1,211E-01	1950	3,581E-01	3450	1,900E-01	4950	1,493E-04
460	4,308E-02	760	1,268E-01	1060	1,213E-01	2000	3,700E-01	3500	1,300E-01	5000	5,754E-05
470	4,356E-02	770	1,297E-01	1070	1,220E-01	2050	3,845E-01	3550	8,770E-02	5050	1,820E-05
480	4,231E-02	780	1,320E-01	1080	1,229E-01	2100	4,000E-01	3600	6,000E-02	5100	< 1,000E-05
490	4,069E-02	790	1,340E-01	1090	1,240E-01	2150	4,140E-01	3650	5,110E-02	5150	< 1,000E-05