

Specification		PCE - BK					
Physical and chemical properties		D 0888					
1.	Optical properties						
1.1	Refractive indices (20°C)						
	Pretreatment of samples	n_g	1.7237				
	[x] Condition as supplied	$n_{F'}$	1.7145				
	[x] annealed at 40°C/h for bifocals *± 0.0003	n_F	1.7135				
		n_e	1.7052 ± 0.001*				
		n_d	1.7010				
		n_D	1.7008				
		$n_{C'}$	1.6965				
		n_C	1.6957				
1.1.1	Abbe value	n_e	39.2 ± 0.6				
		n_d	39.4				
1.2	Transmittance data						
1.2.1	Spectral transmittance $t(I)$						
1.2.1.1	$t(I)$ - curve						
	Plot of spectral transmittance $t(I)$ for $d = 2.0$ mm ($I = 300$ nm - 1500 nm)		see annex				
1.2.1.2	$t(I)$ - individual values in % ($d = 2.0$ mm)						
	$t(I)_{max}$ for the I - range 280 - 315 nm		< 0.001				
	$t(I)_{max}$ for the I - range 315 - 350 nm		55				
	t_{380}		82.5				
	$t(I)_{min}$ for the I - range 450 - 650 nm		◇				
	$t(I)_{min}$ for the I - range 500 - 650 nm		◇				
1.2.1.3	Edge wavelength ($d = 2.0$ mm)						
	Edge wavelength I_C ($t = 0.46$) in nm		347				
1.2.2	Luminous transmittance t_v						
1.2.2.1	Luminous transmittance t_{vD65} in % at nominal thickness		87.3* ± 0.5				
	$d = 2.0$ mm * nominal transmittance						
	Luminous transmittance as a function of thickness						
	Thickness in mm	1.4	2.0	3.0	4.0	5.0	6.0
	t_{vD65} in %	87.4	87.3	87.3	87.2	87.1	87.0
	t_{vA} in %	87.4	87.4	87.4	87.3	87.2	87.1
	t_{vC} in %	87.4	87.3	87.3	87.2	87.1	87.0

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1.2.2.2	Shade N / Filter category		
	<i>N</i> for mean thickness <i>d</i> = mm (<i>t</i> _{VD65} = %)		◇
	<i>N</i> for mean thickness <i>d</i> = mm (<i>t</i> _{VD65} = %)		◇
	filter category for nominal transmittance <i>t</i> _{VD65} = %		◇
1.2.3	Special transmittance values in % (<i>d</i> = 2.0 mm)		
1.2.3.1	UV - transmittance		
		<i>t</i> _{UVA}	42.0
		<i>t</i> _{SUV}	◇
		<i>t</i> _{SUVA}	◇
		<i>t</i> _{SUVB}	◇
1.2.3.2	IR - transmittance	<i>t</i> _{SIR}	88
1.2.3.3	Solar blue - light transmittance	<i>t</i> _{sb}	◇
1.3	Colour		
1.3.1	Visual evaluation		◇
1.3.2	Colorimetry		
	Chromaticity coordinates	<i>x</i> ₁₀	0.315
		<i>y</i> ₁₀	0.333
	Chromaticity coordinates (colour locus) are referred to the Standard Illuminant D ₆₅ according to CIE 10°-observer for the nominal transmittance <i>t</i> _{VD65} = 87.3 %		
	(refer to 1.2.2.1)		
1.3.3	Signal recognition		
	Relative visual attenuation coefficient <i>Q</i>	<i>Q</i> _{blue}	1.00
	for signal lights referred to the	<i>Q</i> _{green}	1.00
	nominal transmittance <i>t</i> _{VD65} = 87.3 %	<i>Q</i> _{yellow}	1.00
	(refer to 1.2.2.1)	<i>Q</i> _{red}	1.00
1.3.4	Yellowness index (<i>d</i> = 10 mm)		
		<i>Y</i> _i	2.8

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2.	Thermal properties		
2.1	Viscosities and corresponding temperatures		
	Designation	Viscosity log h in dPas	Temperatur J in °C
	Strain point	14.5	567
	Annealing point	13.0	590
	Softening point	7.6	714
	Forming temperature	6.0	772
	Forming temperature	5.0	816
	Forming temperature	4.0	870
2.2	Transformation temperature T_g in °C		589
2.3	Coefficient of mean linear thermal expansion $a_{(20^{\circ}\text{C}-300^{\circ}\text{C})}$ in 10^{-6} K^{-1} (Static measurement)		8.6
2.4	Fuseability Stress-free fusing with lower segments from SCHOTT DESAG, listed in the margin is possible with a maximum birefringence of 70 nm/cm, measured 0.5 mm from the fusing area in the major blank.		BS-775 BS-781 BS-786
2.5	Mean specific heat capacity $c_{p(20^{\circ}\text{C}-100^{\circ}\text{C})}$ in J/(g · K)		◇
3.	Mechanical properties		
3.1	Density r in g/cm³		3.20
3.2	Stress optical coefficient C in $1.02 \times 10^{-12} \text{ m}^2/\text{N}$		2.35
3.3	Breaking strength A higher mechanical strength can be realized only by thermal toughening.		
3.3.1	Chemical toughening		not possible
3.3.2	Thermal toughening Recommended minimum thickness d in mm for toughened safety glass lenses without corrective effect as per ball drop test (DIN EN 168)		2.5
3.4	Young's modulus E in kN/mm²		105
3.5	Poisson's ratio m		0.262
3.6	Torsion modulus G in kN/mm²		42
3.7	Knoop hardness HK_{100}		540

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4. Chemical properties			
4.1 Hydrolytic resistance acc. to DIN ISO 719			
		Hydrolytic class	HGB 2
Equivalent of alkali (Na ₂ O) per gram of glass grains in µg/g			42
4.2 Acid resistance acc. to DIN 12 116			
		Acid class	4
Half surface weight loss after 6 hours in mg/dm ²			> 250
4.3 Alkali resistance acc. to DIN ISO 695			
		Class	A 1
Surface weight loss after 3 hours in mg/dm ²			24
5. Electrical properties		disregard	
6. Other properties		disregard	
7. Annex (diagrams, curves)			

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