

ガラスレンズ用プレス品硝種
Glass Lens Pressed Blanks

ガラス研磨レンズ用硝種
Glass Polished Lens

推奨硝種
Recommended Glass Type

TAFD75-W

102-234 $n_d = 2.10200$ $\nu_d = 23.39$ (23.385) $n_F - n_C = 0.047124$
 $n_e = 2.11309$ $\nu_e = 23.20$ (23.203) $n_{F'} - n_{C'} = 0.047972$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	2.04141
$n_{1128.64}$	1128.64	2.05293
n_t	1013.98	2.05767
n_s	852.11	2.06712
$n_{A'}$	768.195	2.07429
n_r	706.519	2.08127
n_C	656.273	2.08854
$n_{C'}$	643.847	2.09063
n_{633}	632.8	2.09260
n_D	589.294	2.10159
n_d	587.562	2.10200
n_e	546.074	2.11309
n_F	486.133	2.13566
$n_{F'}$	479.991	2.13860
n_g	435.834	2.16489
n_h	404.656	2.19147
n_i	365.015	2.24270

分散式の定数 Constants of dispersion formula	
A_0	4.1779854
A_1	$-1.8122172 \times 10^{-2}$
A_2	7.2323156×10^{-2}
A_3	4.7642103×10^{-3}
A_4	$-2.5150885 \times 10^{-4}$
A_5	4.7040631×10^{-5}

部分分散 Partial dispersions	
$n_C - n_t$	0.030869
$n_d - n_C$	0.013457
$n_F - n_d$	0.033667
$n_g - n_F$	0.029229
$n_{C'} - n_t$	0.032956
$n_e - n_{C'}$	0.022464
$n_{F'} - n_e$	0.025508
$n_g - n_{F'}$	0.026294

部分分散比 Partial dispersion rates	
$P_{C,t}$	0.6551
$P_{d,C}$	0.2856
$P_{e,d}$	0.2354
$P_{F,e}$	0.4790
$P_{g,F}$	0.6203
$P_{h,g}$	0.5639
$P_{i,h}$	1.0872
$P'_{C,t}$	0.6870
$P'_{d,C'}$	0.2370
$P'_{e,d'}$	0.2313
$P'_{F',e}$	0.5317
$P'_{g,F'}$	0.5481
$P'_{h,g'}$	0.5539
$P'_{i,h'}$	1.0680

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	-0.0001
$\Delta P_{C,A'}$	-0.0029
$\Delta P_{g,d}$	0.0162
$\Delta P_{g,F}$	0.0140
$\Delta P_{i,g}$	0.1172

光弾性定数 Photoelastic Constant	
B (10^{-12} /Pa)	0.80

比重 Specific Gravity	
d	5.07

化学的性質 Chemical Properties	
D_W	1
D_A	1
T_{Blue}	1
D_{NaOH}	1
D_{STPP}	1
D_0	1
D_H	

熱的性質 Thermal Properties	
T_g (°C)	728
T_s (°C)	771
$T_{10^{14.5}}$ (°C)	702
$T_{10^{13}}$ (°C)	727
$T_{10^{7.6}}$ (°C)	811
$\alpha_{-30/+70^\circ C}$ ($10^{-7}/^\circ C$)	72
$\alpha_{100/300^\circ C}$ ($10^{-7}/^\circ C$)	88
λ [W/(m·K)]	1.030
C_p [kJ/(kg·K)]	0.484

機械的性質 Mechanical Properties	
H_K	750 (7)
F_A	45
E (GPa)	140
G (GPa)	53.8
μ	0.300
σ_b (MPa)	142

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.953	0.886	0.785
2400	0.965	0.916	0.838
2200	0.989	0.974	0.948
2000	0.995	0.987	0.974
1800	0.998	0.994	0.989
1600	0.999	0.999	0.998
1550	0.999	0.999	0.998
1500	0.999	0.999	0.997
1400	0.999	0.999	0.999
1300	0.999	0.999	0.999
1200	0.999	0.999	0.999
1100	0.999	0.999	0.999
1060	0.999	0.999	0.999
1050	0.999	0.999	0.999
1000	0.999	0.999	0.999
950	0.999	0.999	0.999
900	0.999	0.999	0.999
850	0.999	0.999	0.999
830	0.999	0.999	0.999
800	0.999	0.999	0.999
780	0.999	0.999	0.999
750	0.999	0.999	0.999
700	0.999	0.998	0.996
650	0.998	0.994	0.988
600	0.993	0.983	0.966
550	0.987	0.968	0.938
500	0.995	0.987	0.974
480	0.993	0.983	0.966
460	0.991	0.978	0.956
440	0.987	0.968	0.938
420	0.977	0.943	0.889
400	0.935	0.845	0.713
390	0.859	0.684	0.468
380	0.682	0.384	0.148
370	0.397	0.099	0.010
360	0.026		
350			
340			
330			
320			
310			
300			
290			
280			

屈折率の温度係数 dn/dT ($\times 10^{-6}/^\circ C$) Temperature Coefficient of Refractive Index												アッペ数の温度係数 $d\nu/dT$ ($\times 10^{-3}/^\circ C$) Temperature Coefficient of Abbe-number			
	(°C)	dn/dT										$d\nu/dT$			
		n_h	n_g	$n_{F'}$	n_F	n_e	n_d	n_{633}	$n_{C'}$	n_C	n_r	ν_e	ν_d		
		404.66	435.84	479.99	486.13	546.07	587.56	632.80	643.85	656.27	706.52	546.07	587.56		
dn/dT & $d\nu/dT$ (rel.)	-40 / -20	12.9	10.6	8.3	8.1	6.3	5.5	4.8	4.7	4.6	4.1	-1.6	-1.7		
	-20 / 0	13.3	10.9	8.6	8.3	6.5	5.6	4.9	4.8	4.6	4.1	-1.7	-1.7		
	0 / 20	13.8	11.2	8.8	8.6	6.6	5.7	5.0	4.9	4.7	4.2	-1.8	-1.8		
	20 / 40	14.3	11.7	9.1	8.9	6.9	5.9	5.2	5.0	4.9	4.3	-1.8	-1.9		
	40 / 60	14.9	12.1	9.5	9.2	7.1	6.2	5.4	5.2	5.0	4.4	-1.9	-1.9		
	60 / 80	15.4	12.6	9.9	9.6	7.4	6.4	5.6	5.4	5.2	4.6	-2.0	-2.0		
	80 / 100	16.0	13.0	10.2	9.9	7.7	6.6	5.8	5.6	5.4	4.8	-2.0	-2.1		
	100 / 120	16.6	13.5	10.6	10.3	7.9	6.9	5.9	5.8	5.6	4.9	-2.1	-2.1		
	120 / 140	17.2	13.9	10.9	10.6	8.2	7.1	6.2	6.0	5.8	5.1	-2.2	-2.2		
	140 / 150	17.6	14.3	11.2	10.9	8.4	7.2	6.3	6.1	5.9	5.2	-2.2	-2.2		
dn/dT & $d\nu/dT$ (abs.)	-40 / -20	9.9	7.6	5.4	5.2	3.5	2.7	2.0	1.9	1.7	1.3	-1.7	-1.7		
	-20 / 0	10.8	8.3	6.1	5.8	4.0	3.2	2.5	2.3	2.2	1.7	-1.7	-1.7		
	0 / 20	11.6	9.0	6.7	6.4	4.5	3.6	2.9	2.8	2.6	2.1	-1.8	-1.8		
	20 / 40	12.4	9.7	7.3	7.0	5.0	4.1	3.4	3.2	3.0	2.5	-1.9	-1.9		
	40 / 60	13.2	10.4	7.8	7.6	5.5	4.5	3.8	3.6	3.4	2.9	-1.9	-1.9		
	60 / 80	14.0	11.1	8.4	8.1	5.9	4.9	4.1	4.0	3.8	3.2	-2.0	-2.0		
	80 / 100	14.7	11.7	8.9	8.6	6.4	5.3	4.5	4.3	4.1	3.5	-2.1	-2.1		
	100 / 120	15.4	12.3	9.4	9.1	6.8	5.7	4.8	4.6	4.5	3.8	-2.1	-2.1		
	120 / 140	16.1	12.9	9.9	9.5	7.1	6.0	5.1	4.9	4.7	4.1	-2.2	-2.2		
	140 / 150	16.6	13.3	10.2	9.9	7.4	6.3	5.3	5.2	4.9	4.3	-2.2	-2.3		

線膨張係数 α ($\times 10^{-7}/^\circ C$) Coefficient of Thermal Expansion	
(°C)	α
-40 / -30	66
-30 / -20	67
-20 / -10	68
-10 / 0	69
0 / 10	70
10 / 20	71
20 / 30	72
30 / 40	73
40 / 50	74
50 / 60	75
60 / 70	76
70 / 80	77
80 / 90	77
90 / 100	78
100 / 110	79
110 / 120	79
120 / 130	80
130 / 140	80
140 / 150	81

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	(430)/375
着色度 (内部透過率) Coloration of Internal Transmittance	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	406/375

CCI Color Contribution Index	
CCI (G)	4.95
CCI (R)	5.33

冷却速度による屈折率の変化 Difference of refractive indices by cooling rate	
β_C	
β_d	
β_F	
β_g	

備考 Remarks						
硝種対照表 Glass Cross Reference Index						
	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Glass_Type	TAFD75-W					
Code	102-234					
Excel File Name : HOYA20250701M.xlsm						