

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

TAFD40-W

001-255

$n_d = 2.00069$ $\nu_d = 25.46$ (25.458)
 $n_e = 2.00996$ $\nu_e = 25.26$ (25.258)

$n_F - n_C = 0.039307$
 $n_{F'} - n_{C'} = 0.039985$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.94888
$n_{1128.64}$	1128.64	1.95909
n_t	1013.98	1.96321
n_s	852.11	1.97130
$n_{A'}$	768.195	1.97739
n_r	706.519	1.98329
n_C	656.273	1.98941
$n_{C'}$	643.847	1.99116
n_{633}	632.8	1.99282
n_D	589.294	2.00035
n_d	587.562	2.00069
n_e	546.074	2.00996
n_F	486.133	2.02872
$n_{F'}$	479.991	2.03115
n_g	435.834	2.05284
n_h	404.656	2.07460
n_i	365.015	2.11617

部分分散 Partial dispersions	
$n_C - n_t$	0.026205
$n_d - n_C$	0.011283
$n_F - n_d$	0.028024
$n_g - n_F$	0.024120
$n_{C'} - n_t$	0.027958
$n_e - n_{C'}$	0.018794
$n_{F'} - n_e$	0.021191
$n_g - n_{F'}$	0.021689

比重 Specific Gravity	
d	4.73

内部透過率 Internal Transmittance				
λ (nm)	τ_{2mm}	τ_{5mm}	τ_{10mm}	
2500	0.951	0.884	0.781	
2400	0.974	0.936	0.876	
2200	0.998	0.995	0.991	
2000	0.999	0.999	0.999	
1800	0.999	0.999	0.999	
1600	0.999	0.999	0.999	
1550	0.999	0.997	0.995	
1500	0.999	0.997	0.993	
1400	0.999	0.999	0.998	
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	0.998	
800	0.999	0.999	0.998	
780	0.999	0.998	0.998	
750	0.999	0.998	0.996	
700	0.999	0.997	0.995	
650	0.998	0.996	0.992	
600	0.996	0.990	0.979	
550	0.992	0.980	0.960	
500	0.997	0.992	0.984	
480	0.996	0.990	0.979	
460	0.994	0.986	0.972	
440	0.992	0.980	0.960	
420	0.986	0.965	0.932	
400	0.965	0.914	0.836	
390	0.930	0.835	0.697	
380	0.840	0.646	0.418	
370	0.624	0.308	0.095	
360	0.285	0.044		
350				
340				
330				
320				
310				
300				
290				
280				

部分分散比 Partial dispersion rates			
$P_{C,t}$	0.6667	$P'_{C,t}$	0.6992
$P_{d,C}$	0.2870	$P'_{d,C}$	0.2383
$P_{e,d}$	0.2357	$P'_{e,d}$	0.2317
$P_{F,e}$	0.4773	$P'_{F,e}$	0.5300
$P_{g,F}$	0.6136	$P'_{g,F}$	0.5424
$P_{h,g}$	0.5537	$P'_{h,g}$	0.5443
$P_{i,h}$	1.0575	$P'_{i,h}$	

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

熱的性質 Thermal Properties	
T_g (°C)	688
T_s (°C)	736
$T_{10^{14.5}}$ (°C)	670
$T_{10^{13}}$ (°C)	684
$T_{10^{7.6}}$ (°C)	771
$\alpha_{-30/+70°C}$ ($10^{-7}/°C$)	72
$\alpha_{100/300°C}$ ($10^{-7}/°C$)	87
λ [W/(m·K)]	0.932
C_p [kJ/(kg·K)]	0.479

分散式の定数 Constants of dispersion formula	
A_0	3.8106232
A_1	$-1.6351565 \times 10^{-2}$
A_2	5.8801097×10^{-2}
A_3	3.4919026×10^{-3}
A_4	$-1.6948110 \times 10^{-4}$
A_5	3.2569333×10^{-5}

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	0.0018
$\Delta P_{C,A'}$	-0.0020
$\Delta P_{g,d}$	0.0128
$\Delta P_{g,F}$	0.0111
$\Delta P_{i,g}$	

機械的性質 Mechanical Properties	
H_K	600 (6)
F_A	80
E (GPa)	121
G (GPa)	47.0
μ	0.298
σ_b (MPa)	107

光弾性定数 Photoelastic Constant	
B ($10^{-12}/Pa$)	1.25

	(°C)	屈折率の温度係数 dn/dT ($\times 10^{-6}/°C$) Temperature Coefficient of Refractive Index										アッペ数の温度係数 $d\nu/dT$ ($\times 10^{-3}/°C$) Temperature Coefficient of Abbe-number					
		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	10.1	7.7	5.7	5.5	4.1	3.5	3.0	2.9	2.8	2.5	-1.7	-1.7				
	-20 / 0	10.5	8.0	5.9	5.7	4.2	3.6	3.1	3.0	2.8	2.5	-1.8	-1.8				
	0 / 20	11.0	8.3	6.2	5.9	4.4	3.7	3.2	3.0	2.9	2.6	-1.9	-1.9				
	20 / 40	11.4	8.7	6.4	6.2	4.5	3.8	3.2	3.1	3.0	2.6	-1.9	-1.9				
	40 / 60	11.9	9.0	6.6	6.4	4.7	3.9	3.3	3.2	3.1	2.7	-2.0	-2.0				
	60 / 80	12.3	9.3	6.8	6.6	4.8	4.0	3.4	3.3	3.1	2.7	-2.1	-2.1				
	80 / 100	12.7	9.6	7.0	6.7	4.9	4.1	3.4	3.3	3.2	2.7	-2.2	-2.2				
	100 / 120	13.0	9.8	7.1	6.8	4.9	4.1	3.4	3.3	3.1	2.7	-2.3	-2.3				
	120 / 140	13.3	10.0	7.2	6.9	4.9	4.1	3.4	3.2	3.1	2.6	-2.3	-2.3				
	140 / 150	13.5	10.1	7.2	7.0	4.9	4.0	3.3	3.2	3.0	2.6	-2.4	-2.4				
dn/dT & $d\nu/dT$ (abs.)	-40 / -20	7.3	4.9	3.0	2.8	1.4	0.8	0.3	0.2	0.1	-0.2	-1.7	-1.7				
	-20 / 0	8.1	5.6	3.6	3.4	1.9	1.3	0.8	0.7	0.6	0.2	-1.8	-1.8				
	0 / 20	8.9	6.3	4.1	3.9	2.4	1.7	1.2	1.1	0.9	0.6	-1.9	-1.9				
	20 / 40	9.6	6.9	4.6	4.4	2.8	2.1	1.5	1.4	1.3	0.9	-2.0	-2.0				
	40 / 60	10.3	7.4	5.0	4.8	3.1	2.4	1.8	1.7	1.6	1.2	-2.0	-2.0				
	60 / 80	10.8	7.9	5.4	5.2	3.4	2.6	2.0	1.9	1.8	1.4	-2.1	-2.1				
	80 / 100	11.4	8.3	5.7	5.5	3.6	2.8	2.2	2.1	2.0	1.5	-2.2	-2.2				
	100 / 120	11.9	8.7	6.0	5.7	3.8	3.0	2.3	2.2	2.1	1.6	-2.3	-2.3				
	120 / 140	12.3	9.0	6.2	5.9	3.9	3.1	2.4	2.3	2.1	1.7	-2.3	-2.3				
	140 / 150	12.6	9.1	6.3	6.0	4.0	3.1	2.4	2.3	2.1	1.6	-2.4	-2.4				

線膨張係数 α ($\times 10^{-7}/°C$) Coefficient of Thermal Expansion	
(°C)	α
-40 / -30	70
-30 / -20	70
-20 / -10	71
-10 / 0	71
0 / 10	72
10 / 20	72
20 / 30	72
30 / 40	73
40 / 50	73
50 / 60	73
60 / 70	73
70 / 80	74
80 / 90	75
90 / 100	76
100 / 110	77
110 / 120	78
120 / 130	80
130 / 140	81
140 / 150	84

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	(410)/370
着色度 Coloration of Internal Transmittance (内部透過率)	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	398/368

CCI Color Contribution Index	
CCI (G)	3.02
CCI (R)	3.19

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	TAFD40-W			J-LASFH17HS		H-ZLaF90
Code	001-255			001-255		001-254
Excel File Name : HOYA20250701M.xlsm						