

NBFD32

730-322

$n_d = 1.73037$ $\nu_d = 32.23$ (32.233)
 $n_e = 1.73573$ $\nu_e = 32.00$ (32.005)

$n_F - n_C = 0.022659$
 $n_{F'} - n_{C'} = 0.022988$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.69732
$n_{1128.64}$	1128.64	1.70487
n_t	1013.98	1.70764
n_s	852.11	1.71281
$n_{A'}$	768.195	1.71655
n_r	706.519	1.72011
n_C	656.273	1.72375
$n_{C'}$	643.847	1.72479
n_{633}	632.8	1.72576
n_D	589.294	1.73017
n_d	587.562	1.73037
n_e	546.074	1.73573
n_F	486.133	1.74641
$n_{F'}$	479.991	1.74778
n_g	435.834	1.75978
n_h	404.656	1.77149
n_i	365.015	1.79298

部分分散 Partial dispersions	
$n_C - n_t$	0.016114
$n_d - n_C$	0.006620
$n_F - n_d$	0.016039
$n_g - n_F$	0.013367
$n_{C'} - n_t$	0.017150
$n_e - n_{C'}$	0.010947
$n_{F'} - n_e$	0.012041
$n_g - n_{F'}$	0.012002

比重 Specific Gravity	
d	3.18

内部透過率 Internal Transmittance				
λ (nm)	τ 2mm	τ 5mm	τ 10mm	
2500	0.976	0.940	0.884	
2400	0.981	0.954	0.909	
2200	0.989	0.972	0.944	
2000	0.994	0.986	0.972	
1800	0.996	0.991	0.982	
1600	0.999	0.996	0.992	
1550	0.999	0.997	0.994	
1500	0.999	0.997	0.994	
1400	0.999	0.998	0.995	
1300	0.999	0.999	0.997	
1200	0.999	0.999	0.998	
1100	0.999	0.999	0.998	
1060	0.999	0.999	0.998	
1050	0.999	0.999	0.998	
1000	0.999	0.999	0.997	
950	0.999	0.999	0.998	
900	0.999	0.999	0.998	
850	0.999	0.999	0.998	
830	0.999	0.999	0.999	
800	0.999	0.999	0.998	
780	0.999	0.999	0.998	
750	0.999	0.999	0.997	
700	0.999	0.998	0.997	
650	0.999	0.998	0.997	
600	0.998	0.996	0.991	
550	0.997	0.992	0.985	
500	0.999	0.997	0.993	
480	0.998	0.996	0.991	
460	0.998	0.994	0.989	
440	0.997	0.992	0.985	
420	0.996	0.990	0.980	
400	0.993	0.983	0.966	
390	0.990	0.975	0.951	
380	0.984	0.960	0.922	
370	0.970	0.928	0.860	
360	0.922	0.816	0.665	
350	0.788	0.552	0.304	
340	0.485	0.164	0.027	
330	0.046			
320				
310				
300				
290				
280				

部分分散比 Partial dispersion rates			
$P_{C,t}$	0.7112	$P'_{C,t}$	0.7460
$P_{d,C}$	0.2922	$P'_{d,C}$	0.2429
$P_{e,d}$	0.2367	$P'_{e,d}$	0.2333
$P_{F,e}$	0.4712	$P'_{F,e}$	0.5238
$P_{g,F}$	0.5899	$P'_{g,F}$	0.5221
$P_{h,g}$	0.5168	$P'_{h,g}$	0.5094
$P_{i,h}$	0.9485	$P'_{i,h}$	0.9349

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)	560
T_s (°C)	608
$T_{10^{14.5}}$ (°C)	536
$T_{10^{13}}$ (°C)	556
$T_{10^{7.6}}$ (°C)	667
$\alpha_{-30/+70}$ ($10^{-7}/^{\circ}C$)	82
$\alpha_{100/300}$ ($10^{-7}/^{\circ}C$)	111
λ [W/(m·K)]	1.070
C_p [kJ/(kg·K)]	0.748

分散式の定数 Constants of dispersion formula	
A_0	2.8989349
A_1	$-1.3348892 \times 10^{-2}$
A_2	3.0163481×10^{-2}
A_3	1.6257886×10^{-3}
A_4	$-7.6966547 \times 10^{-5}$
A_5	1.0143236×10^{-5}

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	0.0147
$\Delta P_{C,A'}$	0.0018
$\Delta P_{g,d}$	-0.0006
$\Delta P_{g,F}$	-0.0004
$\Delta P_{i,g}$	0.0096

機械的性質 Mechanical Properties	
H_K	605 (6)
F_A	150
E (GPa)	101
G (GPa)	40.6
μ	0.245
σ_b (MPa)	85

光弾性定数 Photoelastic Constant	
B ($10^{-12}/Pa$)	3.05

	(°C)	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					
		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				
dn/dT & $d\nu/dT$ (rel.)	-40 / -20	6.4	5.4	4.5	4.4	3.6	3.3	3.0	3.0	2.9	2.7	-1.9	-1.9				
	-20 / 0	6.5	5.4	4.4	4.3	3.6	3.2	3.0	2.9	2.8	2.6	-2.0	-2.0				
	0 / 20	6.6	5.5	4.5	4.4	3.6	3.2	2.9	2.9	2.8	2.6	-2.1	-2.1				
	20 / 40	6.8	5.6	4.5	4.4	3.6	3.2	2.9	2.8	2.8	2.6	-2.2	-2.2				
	40 / 60	6.9	5.7	4.6	4.4	3.6	3.2	2.9	2.8	2.8	2.5	-2.2	-2.2				
	60 / 80	7.1	5.8	4.6	4.5	3.6	3.2	2.9	2.8	2.7	2.5	-2.4	-2.4				
	80 / 100	7.2	5.9	4.7	4.6	3.6	3.2	2.9	2.8	2.7	2.5	-2.4	-2.4				
	100 / 120	7.4	6.0	4.7	4.6	3.6	3.2	2.8	2.8	2.7	2.4	-2.5	-2.5				
	120 / 140	7.5	6.1	4.8	4.6	3.6	3.2	2.8	2.7	2.6	2.4	-2.6	-2.6				
	140 / 150	7.6	6.1	4.8	4.6	3.6	3.1	2.8	2.7	2.6	2.3	-2.7	-2.7				
dn/dT & $d\nu/dT$ (abs.)	-40 / -20	4.0	3.0	2.1	2.0	1.3	1.0	0.7	0.7	0.6	0.4	-1.9	-1.9				
	-20 / 0	4.4	3.3	2.4	2.3	1.6	1.2	1.0	0.9	0.9	0.7	-2.0	-2.0				
	0 / 20	4.8	3.7	2.7	2.6	1.8	1.5	1.2	1.1	1.1	0.9	-2.1	-2.1				
	20 / 40	5.2	4.0	3.0	2.9	2.1	1.7	1.4	1.3	1.3	1.1	-2.2	-2.2				
	40 / 60	5.5	4.3	3.2	3.1	2.3	1.9	1.6	1.5	1.4	1.2	-2.3	-2.3				
	60 / 80	5.9	4.6	3.4	3.3	2.4	2.0	1.7	1.6	1.6	1.3	-2.4	-2.4				
	80 / 100	6.1	4.8	3.6	3.5	2.6	2.2	1.8	1.7	1.7	1.4	-2.5	-2.5				
	100 / 120	6.4	5.0	3.8	3.6	2.7	2.2	1.9	1.8	1.8	1.5	-2.5	-2.5				
	120 / 140	6.6	5.2	3.9	3.8	2.8	2.3	2.0	1.9	1.8	1.5	-2.6	-2.6				
	140 / 150	6.8	5.3	4.0	3.8	2.8	2.3	2.0	1.9	1.8	1.6	-2.7	-2.7				

線膨張係数 α ($\times 10^{-7}/^{\circ}C$) Coefficient of Thermal Expansion	
(°C)	α
-40 / -30	74
-30 / -20	76
-20 / -10	77
-10 / 0	78
0 / 10	80
10 / 20	81
20 / 30	83
30 / 40	85
40 / 50	86
50 / 60	88
60 / 70	89
70 / 80	90
80 / 90	91
90 / 100	91
100 / 110	92
110 / 120	92
120 / 130	91
130 / 140	90
140 / 150	89

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	385/340
着色度 (内部透過率) Coloration of Internal Transmittance	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	365/341

CCI Color Contribution Index	
CCI (G)	0.69
CCI (R)	0.72

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	NBFD32		(S-NBH53V)			
Code	730-322		(738-323)			

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