

E-FDS3-W

104-170 $n_d = 2.10420$ $\nu_d = 17.02$ (17.018) $n_F - n_C = 0.064883$
 $n_e = 2.11935$ $\nu_e = 16.88$ (16.876) $n_{F'} - n_{C'} = 0.066328$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	2.02712
$n_{1128.64}$	1128.64	2.04059
n_t	1013.98	2.04640
n_s	852.11	2.05829
$n_{A'}$	768.195	2.06750
n_r	706.519	2.07659
n_C	656.273	2.08618
$n_{C'}$	643.847	2.08895
n_{633}	632.8	2.09157
n_D	589.294	2.10365
n_d	587.562	2.10420
n_e	546.074	2.11935
n_F	486.133	2.15106
$n_{F'}$	479.991	2.15527
n_g	435.834	2.19408
n_h	404.656	2.23521
n_i	365.015	2.31952

分散式の定数 Constants of dispersion formula	
A_0	4.1120387
A_1	$-1.8227670 \times 10^{-2}$
A_2	8.9852105×10^{-2}
A_3	7.8714400×10^{-3}
A_4	$-5.2228008 \times 10^{-4}$
A_5	1.1773061×10^{-4}

部分分散 Partial dispersions	
$n_C - n_t$	0.039773
$n_d - n_C$	0.018024
$n_F - n_d$	0.046859
$n_g - n_F$	0.043022
$n_{C'} - n_t$	0.042544
$n_e - n_{C'}$	0.030402
$n_{F'} - n_e$	0.035926
$n_g - n_{F'}$	0.038806

部分分散比 Partial dispersion rates			
$P_{C,t}$	0.6130	$P'_{C,t}$	0.6414
$P_{d,C}$	0.2778	$P'_{d,C}$	0.2300
$P_{e,d}$	0.2335	$P'_{e,d}$	0.2284
$P_{F,e}$	0.4887	$P'_{F,e}$	0.5416
$P_{g,F}$	0.6631	$P'_{g,F}$	0.5851
$P_{h,g}$	0.6339	$P'_{h,g}$	
$P_{i,h}$	1.2995	$P'_{i,h}$	

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	-0.0124
$\Delta P_{C,A'}$	-0.0097
$\Delta P_{g,d}$	0.0523
$\Delta P_{g,F}$	0.0454
$\Delta P_{i,g}$	

光弾性定数 Photoelastic Constant	
B ($10^{-12}/\text{Pa}$)	1.21

比重 Specific Gravity	
d	5.63

化学的性質 Chemical Properties	
D_W	1
D_A	1
T_{Blue}	1
D_{NaOH}	2
D_{STPP}	2
D_0	1
D_H	

熱的性質 Thermal Properties	
T_g (°C)	561
T_s (°C)	596
$T_{10^{14.5}}$ (°C)	529
$T_{10^{13}}$ (°C)	552
$T_{10^{7.6}}$ (°C)	626
α -30/+70°C ($10^{-7}/^\circ\text{C}$)	68
α 100/300°C ($10^{-7}/^\circ\text{C}$)	82
λ [W/(m·K)]	0.719
C_p [kJ/(kg·K)]	0.378

機械的性質 Mechanical Properties	
H_K	410 (4)
F_A	250
E (GPa)	88
G (GPa)	34.9
μ	0.263
σ_b (MPa)	53

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.961	0.906	0.820
2400	0.970	0.927	0.860
2200	0.985	0.964	0.929
2000	0.992	0.979	0.959
1800	0.995	0.986	0.973
1600	0.997	0.993	0.986
1550	0.997	0.993	0.986
1500	0.996	0.991	0.981
1400	0.998	0.996	0.992
1300	0.998	0.996	0.993
1200	0.998	0.996	0.992
1100	0.998	0.995	0.991
1060	0.998	0.995	0.990
1050	0.998	0.995	0.990
1000	0.998	0.994	0.988
950	0.997	0.994	0.987
900	0.997	0.993	0.986
850	0.997	0.993	0.985
830	0.997	0.992	0.985
800	0.997	0.993	0.986
780	0.997	0.993	0.986
750	0.997	0.993	0.986
700	0.998	0.994	0.988
650	0.996	0.991	0.982
600	0.988	0.971	0.943
550	0.930	0.833	0.694
500	0.992	0.981	0.962
480	0.988	0.971	0.943
460	0.978	0.946	0.895
440	0.930	0.833	0.694
420	0.672	0.370	0.137
400	0.179		
390			
380			
370			
360			
350			
340			
330			
320			
310			
300			
290			
280			

屈折率の温度係数 dn/dT ($\times 10^{-6}/^\circ\text{C}$)		アッペ数の温度係数 $d\nu/dT$ ($\times 10^{-3}/^\circ\text{C}$)													
Temperature Coefficient of Refractive Index		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		
dn/dT & $d\nu/dT$ (rel.)	-40 / -20	27.2	20.3	14.9	14.4	10.8	9.2	8.0	7.8	7.5	6.7	-1.7	-1.7		
	-20 / 0	28.5	21.3	15.6	15.1	11.3	9.7	8.5	8.2	7.9	7.1	-1.7	-1.7		
	0 / 20	29.7	22.2	16.4	15.8	11.8	10.2	8.9	8.6	8.4	7.5	-1.8	-1.8		
	20 / 40	31.0	23.2	17.1	16.5	12.4	10.7	9.3	9.0	8.8	7.8	-1.9	-1.9		
	40 / 60	32.2	24.1	17.8	17.2	12.9	11.1	9.7	9.4	9.1	8.2	-1.9	-1.9		
	60 / 80	33.4	25.0	18.4	17.8	13.4	11.5	10.1	9.8	9.5	8.5	-2.0	-2.0		
	80 / 100	34.5	25.8	19.0	18.4	13.8	11.9	10.4	10.1	9.8	8.7	-2.0	-2.0		
	100 / 120	35.6	26.6	19.6	18.9	14.2	12.2	10.6	10.3	10.0	8.9	-2.1	-2.1		
	120 / 140	36.6	27.3	20.1	19.4	14.5	12.4	10.8	10.5	10.2	9.1	-2.2	-2.2		
	140 / 150	37.3	27.8	20.4	19.6	14.7	12.6	10.9	10.6	10.3	9.2	-2.2	-2.2		
dn/dT & $d\nu/dT$ (abs.)	-40 / -20	24.2	17.3	12.0	11.4	7.9	6.4	5.2	5.0	4.7	3.9	-1.7	-1.7		
	-20 / 0	25.9	18.7	13.1	12.6	8.8	7.3	6.0	5.8	5.5	4.7	-1.7	-1.7		
	0 / 20	27.5	20.0	14.2	13.6	9.7	8.1	6.8	6.5	6.3	5.4	-1.8	-1.8		
	20 / 40	29.0	21.2	15.2	14.6	10.5	8.8	7.5	7.2	7.0	6.0	-1.9	-1.9		
	40 / 60	30.5	22.4	16.1	15.5	11.3	9.5	8.1	7.8	7.5	6.6	-1.9	-1.9		
	60 / 80	31.9	23.5	17.0	16.3	11.9	10.1	8.6	8.4	8.1	7.1	-2.0	-2.0		
	80 / 100	33.1	24.5	17.7	17.1	12.5	10.6	9.1	8.8	8.5	7.5	-2.0	-2.0		
	100 / 120	34.3	25.4	18.4	17.7	13.0	11.0	9.5	9.2	8.9	7.8	-2.1	-2.1		
	120 / 140	35.5	26.2	19.0	18.3	13.4	11.4	9.8	9.5	9.2	8.1	-2.2	-2.2		
	140 / 150	36.2	26.7	19.4	18.7	13.7	11.6	10.0	9.7	9.3	8.2	-2.2	-2.2		

線膨張係数 α ($\times 10^{-7}/^\circ\text{C}$)	
Coefficient of Thermal Expansion	
(°C)	α
-40 / -30	62
-30 / -20	64
-20 / -10	65
-10 / 0	66
0 / 10	67
10 / 20	68
20 / 30	69
30 / 40	69
40 / 50	70
50 / 60	70
60 / 70	70
70 / 80	71
80 / 90	71
90 / 100	71
100 / 110	72
110 / 120	72
120 / 130	73
130 / 140	74
140 / 150	75

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	(465)/415
着色度 (内部透過率) Coloration of Internal Transmittance	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	447/414

CCI Color Contribution Index	
CCI (G)	26.18
CCI (R)	26.58

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	E-FDS3-W					
Code	104-170					

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