

FCD500

554-718 $n_d = 1.55397$ $\nu_d = 71.76$ (71.758) $n_F - n_C = 0.007720$
 $n_e = 1.55581$ $\nu_e = 71.39$ (71.395) $n_{F'} - n_{C'} = 0.007785$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.54005
$n_{1128.64}$	1128.64	1.54405
n_t	1013.98	1.54532
n_s	852.11	1.54749
$n_{A'}$	768.195	1.54895
n_r	706.519	1.55029
n_C	656.273	1.55162
$n_{C'}$	643.847	1.55199
n_{633}	632.8	1.55234
n_D	589.294	1.55390
n_d	587.562	1.55397
n_e	546.074	1.55581
n_F	486.133	1.55934
$n_{F'}$	479.991	1.55978
n_g	435.834	1.56350
n_h	404.656	1.56693
n_i	365.015	1.57275

分散式の定数 Constants of dispersion formula	
A_0	2.3872008
A_1	$-8.2934919 \times 10^{-3}$
A_2	8.9478008×10^{-3}
A_3	7.5284851×10^{-4}
A_4	$-8.4935706 \times 10^{-5}$
A_5	4.3458587×10^{-6}

部分分散 Partial dispersions	
$n_C - n_t$	0.006300
$n_d - n_C$	0.002347
$n_F - n_d$	0.005373
$n_g - n_F$	0.004163
$n_{C'} - n_t$	0.006673
$n_e - n_{C'}$	0.003818
$n_{F'} - n_e$	0.003967
$n_g - n_{F'}$	0.003725

部分分散比 Partial dispersion rates			
$P_{C,t}$	0.8161	$P'_{C',t}$	0.8572
$P_{d,C}$	0.3040	$P'_{d,C'}$	0.2536
$P_{e,d}$	0.2389	$P'_{e,d}$	0.2369
$P_{F,e}$	0.4571	$P'_{F',e}$	0.5096
$P_{g,F}$	0.5392	$P'_{g,F'}$	0.4785
$P_{h,g}$	0.4437	$P'_{h,g}$	0.4399
$P_{i,h}$	0.7541	$P'_{i,h}$	0.7478

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	-0.0650
$\Delta P_{C,A'}$	-0.0184
$\Delta P_{g,d}$	0.0268
$\Delta P_{g,F}$	0.0200
$\Delta P_{i,g}$	0.0917

光弾性定数 Photoelastic Constant	
B ($10^{-12}/\text{Pa}$)	0.78

比重 Specific Gravity	
d	3.66

化学的性質 Chemical Properties	
D_W	1
D_A	3
T_{Blue}	1
D_{NaOH}	2
D_{STPP}	3
D_0	2
D_H	1

熱的性質 Thermal Properties	
T_g ($^{\circ}\text{C}$)	397
T_s ($^{\circ}\text{C}$)	442
$T_{10^{14.5}}$ ($^{\circ}\text{C}$)	380
$T_{10^{13}}$ ($^{\circ}\text{C}$)	394
$T_{10^{7.6}}$ ($^{\circ}\text{C}$)	503
α $-30/+70^{\circ}\text{C}$ ($10^{-7}/^{\circ}\text{C}$)	124
α $100/300^{\circ}\text{C}$ ($10^{-7}/^{\circ}\text{C}$)	153
λ [$\text{W}/(\text{m}\cdot\text{K})$]	0.697
C_p [$\text{kJ}/(\text{kg}\cdot\text{K})$]	0.563

機械的性質 Mechanical Properties	
H_K	380 (4)
F_A	430
E (GPa)	80
G (GPa)	31.0
μ	0.290
σ_b (MPa)	55

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500			
2400			
2200			
2000			
1800			
1600			
1550	0.999	0.999	0.997
1500	0.999	0.998	0.997
1400	0.999	0.999	0.997
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	0.999	0.998
650	0.999	0.999	0.999
600	0.999	0.999	0.997
550	0.999	0.998	0.996
500	0.999	0.999	0.999
480	0.999	0.999	0.997
460	0.999	0.998	0.997
440	0.999	0.998	0.996
420	0.999	0.998	0.995
400	0.999	0.997	0.994
390	0.998	0.995	0.991
380	0.997	0.991	0.983
370	0.992	0.981	0.962
360	0.983	0.958	0.918
350	0.963	0.910	0.828
340	0.923	0.817	0.668
330	0.851	0.667	0.445
320	0.740	0.471	0.222
310	0.597	0.276	0.076
300	0.445	0.132	0.017
290	0.309	0.053	0.003
280	0.209	0.020	

屈折率の温度係数 $d n/dT$ ($\times 10^{-6}/^{\circ}\text{C}$)						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)	$d n/dT$										$d \nu/dT$	
		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
$d n/dT$ & $d \nu/dT$ (rel.)	-40 / -20	-4.3	-4.4	-4.6	-4.6	-4.8	-4.8	-4.9	-4.9	-5.0	-5.0	-3.9	-3.9
	-20 / 0	-4.8	-5.0	-5.1	-5.2	-5.3	-5.4	-5.5	-5.5	-5.5	-5.6	-3.9	-4.1
	0 / 20	-5.2	-5.4	-5.6	-5.6	-5.8	-5.8	-5.9	-5.9	-5.9	-6.0	-4.0	-4.1
	20 / 40	-5.5	-5.7	-5.8	-5.9	-6.0	-6.1	-6.2	-6.2	-6.2	-6.3	-4.2	-4.2
	40 / 60	-5.6	-5.8	-6.0	-6.0	-6.2	-6.3	-6.4	-6.4	-6.4	-6.5	-4.1	-4.2
	60 / 80	-5.7	-5.8	-6.0	-6.1	-6.2	-6.3	-6.4	-6.4	-6.4	-6.5	-4.4	-4.4
	80 / 100	-5.6	-5.8	-6.0	-6.0	-6.2	-6.3	-6.3	-6.4	-6.4	-6.5	-4.4	-4.4
	100 / 120	-5.4	-5.6	-5.8	-5.8	-6.0	-6.1	-6.2	-6.2	-6.2	-6.3	-4.6	-4.6
	120 / 140	-5.1	-5.3	-5.5	-5.5	-5.7	-5.8	-5.9	-6.0	-6.0	-6.0	-4.7	-4.7
	140 / 150	-4.8	-5.0	-5.3	-5.3	-5.5	-5.6	-5.7	-5.7	-5.7	-5.8	-4.6	-4.7
$d n/dT$ & $d \nu/dT$ (abs.)	-40 / -20	-6.4	-6.6	-6.7	-6.7	-6.9	-7.0	-7.0	-7.0	-7.1	-7.1	-3.8	-3.8
	-20 / 0	-6.7	-6.8	-7.0	-7.0	-7.1	-7.2	-7.3	-7.3	-7.3	-7.4	-3.9	-3.9
	0 / 20	-6.8	-7.0	-7.1	-7.2	-7.3	-7.4	-7.5	-7.5	-7.5	-7.5	-4.0	-4.1
	20 / 40	-6.9	-7.0	-7.2	-7.2	-7.4	-7.5	-7.5	-7.6	-7.6	-7.6	-4.1	-4.2
	40 / 60	-6.9	-7.0	-7.2	-7.2	-7.4	-7.5	-7.5	-7.6	-7.6	-7.6	-4.2	-4.3
	60 / 80	-6.8	-6.9	-7.1	-7.1	-7.3	-7.4	-7.5	-7.5	-7.5	-7.6	-4.3	-4.4
	80 / 100	-6.6	-6.7	-6.9	-6.9	-7.1	-7.2	-7.3	-7.3	-7.3	-7.4	-4.4	-4.5
	100 / 120	-6.3	-6.5	-6.7	-6.7	-6.9	-7.0	-7.0	-7.1	-7.1	-7.1	-4.5	-4.6
	120 / 140	-5.9	-6.1	-6.3	-6.3	-6.5	-6.6	-6.7	-6.7	-6.7	-6.8	-4.6	-4.7
	140 / 150	-5.6	-5.8	-6.0	-6.0	-6.2	-6.3	-6.4	-6.4	-6.4	-6.5	-4.7	-4.7

線膨張係数 α ($\times 10^{-7}/^{\circ}\text{C}$)	
Coefficient of Thermal Expansion	
$(^{\circ}\text{C})$	α
-40 / -30	110
-30 / -20	115
-20 / -10	119
-10 / 0	122
0 / 10	124
10 / 20	126
20 / 30	127
30 / 40	128
40 / 50	128
50 / 60	128
60 / 70	128
70 / 80	128
80 / 90	128
90 / 100	128
100 / 110	129
110 / 120	129
120 / 130	130
130 / 140	132
140 / 150	134

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	355/310
着色度 (内部透過率) Coloration of Internal Transmittance	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	348/307

CCI Color Contribution Index	
CCI (G)	0.15
CCI (R)	0.11

冷却速度による屈折率の変化 Difference of refractive indices by cooling rate	
β_C	55
β_d	55
β_F	55
β_g	55

備考 Remarks						
硝種対照表 Glass Cross Reference Index						
	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Glass_Type	FCD500		(S-FPM5)		(K-PSK500)	
Code	554-718		(552-708)		(552-720)	
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