

S-FPM 5

Code(d) **552708**

Code(e) **554703**

Refractive Index n_d	1.55200	Abbe Number ν_d	70.70	Dispersion n_F-n_C	0.007808
	1.552000				
Refractive Index n_e	1.553863	Abbe Number ν_e	70.33	Dispersion n_F-n_C'	0.007875

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.53066
n_{1970}	1.97009	1.53441
n_{1530}	1.52958	1.53845
n_{1129}	1.12864	1.54208
n_t	1.01398	1.54330
n_s	0.85211	1.54545
$n_{A'}$	0.76819	1.54692
n_f	0.70652	1.54828
n_C	0.65627	1.54963
$n_{C'}$	0.64385	1.55000
$n_{\text{He-Ne}}$	0.6328	1.55036
n_D	0.58929	1.55193
n_d	0.58756	1.55200
n_e	0.54607	1.55386
n_F	0.48613	1.55743
$n_{F'}$	0.47999	1.55788
$n_{\text{He-Cd}}$	0.44157	1.56111
n_g	0.435835	1.56167
n_h	0.404656	1.56517
n_i	0.365015	1.57111

Constants of Dispersion Formula	
A_1	8.39899764E-01
A_2	5.37721312E-01
A_3	9.53247759E-01
B_1	3.76448295E-03
B_2	1.48022622E-02
B_3	1.45675550E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	52.1
Phosphate Resistance PR	4.0

Mechanical Properties	
Young's Modulus E (GPa)	76.9
Rigidity Modulus G (GPa)	29.7
Poisson's Ratio σ	0.296
Knoop Hardness Hk(Class)	410 4
Abrasion Aa	413

Partial Dispersions	
n_C-n_t	0.006321
$n_C-n_{A'}$	0.002702
n_d-n_C	0.002375
n_e-n_C	0.004238
n_g-n_d	0.009666
n_g-n_F	0.004233
n_h-n_g	0.003502
n_i-n_g	0.009440
n_C-n_t	0.006699
$n_e-n_{C'}$	0.003860
$n_{F'}-n_e$	0.004015
$n_i-n_{F'}$	0.013228

Relative Partial Dispersions	
$\theta_{C,t}$	0.8096
$\theta_{C,A'}$	0.3461
$\theta_{d,C}$	0.3042
$\theta_{e,C}$	0.5428
$\theta_{g,d}$	1.2380
$\theta_{g,F}$	0.5421
$\theta_{h,g}$	0.4485
$\theta_{i,g}$	1.2090
$\theta'_{C,t}$	0.8507
$\theta'_{e,C}$	0.4902
$\theta'_{F,e}$	0.5098
$\theta'_{i,F'}$	1.6797

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	-0.0688
$\Delta \theta_{C,A'}$	-0.0155
$\Delta \theta_{g,d}$	0.0201
$\Delta \theta_{g,F}$	0.0150
$\Delta \theta_{i,g}$	0.0760

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	474
Yield Point At (°C)	503
Softening Point SP (°C)	-
Expansion Coefficients (-30~+70°C)	109
α (10^{-7}K^{-1}) (+100~+300°C)	129
Thermal Conductivity λ W/(m·K)	0.765

Coloring			
λ_{80}	345	λ_5	
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	335	$\lambda_{0.05}$	282

CCI		
B	G	R
0.00	0.14	0.12

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	0.04
290	0.10
300	0.20
310	0.35
320	0.56
330	0.73
340	0.86
350	0.929
360	0.967
370	0.984
380	0.992
390	0.995
400	0.996
420	0.995
440	0.995
460	0.996
480	0.998
500	0.998
550	0.999
600	0.999
650	0.998
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.999
1600	0.998
1800	0.998
2000	0.997
2200	0.994
2400	0.993

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative (10^{-6}K^{-1})						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-2.5	-2.3	-2.2	-2.2	-2.1	-1.8	-1.5
-20~ 0	-2.8	-2.5	-2.5	-2.4	-2.3	-2.0	-1.8
0~20	-3.0	-2.7	-2.7	-2.6	-2.5	-2.2	-1.9
20~40	-3.2	-2.9	-2.8	-2.7	-2.6	-2.3	-2.1
40~60	-3.3	-3.0	-2.9	-2.8	-2.7	-2.4	-2.1
60~80	-3.3	-3.0	-3.0	-2.9	-2.7	-2.4	-2.1

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	1.29
Specific Gravity d	3.74
Remarks	

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.