

S-FPL55

Code(d) **439948**

Code(e) **440942**

Refractive Index n_d	1.43875 1.438750	Abbe Number ν_d	94.66	Dispersion n_F-n_C	0.004635
Refractive Index n_e	1.439857	Abbe Number ν_e	94.23	Dispersion n_F-n_C'	0.004668

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.42492
n_{1970}	1.97009	1.42747
n_{1530}	1.52958	1.43023
n_{1129}	1.12864	1.43264
n_t	1.01398	1.43343
n_s	0.85211	1.43478
$n_{A'}$	0.76819	1.43569
n_r	0.70652	1.43651
n_C	0.65627	1.43733
$n_{C'}$	0.64385	1.43755
$n_{\text{He-Ne}}$	0.6328	1.43777
n_D	0.58929	1.43871
n_d	0.58756	1.43875
n_e	0.54607	1.43986
n_F	0.48613	1.44196
$n_{F'}$	0.47999	1.44222
$n_{\text{He-Cd}}$	0.44157	1.44411
n_g	0.435835	1.44444
n_h	0.404656	1.44647
n_i	0.365015	1.44988

Constants of Dispersion Formula	
A_1	8.39067682E-01
A_2	2.14083503E-01
A_3	1.47914677E+00
B_1	7.95286639E-03
B_2	-2.32581717E-03
B_3	3.40043700E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	52.1
Phosphate Resistance PR	4.1

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	698
Rigidity Modulus G (10^9N/m^2)	268
Poisson's Ratio σ	0.302
Knoop Hardness Hk[Class]	340 3
Abrasion Aa	470
Photoelastic Constant β nm/(cm · 10^5Pa)	0.59

Partial Dispersions	
n_C-n_t	0.003898
$n_C-n_{A'}$	0.001639
n_d-n_C	0.001422
n_e-n_C	0.002529
n_g-n_d	0.005688
n_g-n_F	0.002475
n_h-n_g	0.002031
n_i-n_g	0.005445
n_C-n_t	0.004125
$n_e-n_{C'}$	0.002302
n_F-n_e	0.002366
$n_i-n_{F'}$	0.007660

Relative Partial Dispersions	
$\theta_{C,t}$	0.8410
$\theta_{C,A'}$	0.3536
$\theta_{d,C}$	0.3068
$\theta_{e,C}$	0.5456
$\theta_{g,d}$	1.2272
$\theta_{g,F}$	0.5340
$\theta_{h,g}$	0.4382
$\theta_{i,g}$	1.1748
$\theta'_{C,t}$	0.8837
$\theta'_{e,C'}$	0.4931
$\theta'_{F,e}$	0.5069
$\theta'_{i,F'}$	1.6410

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.1498
$\Delta\theta_{C,A'}$	-0.0371
$\Delta\theta_{g,d}$	0.0590
$\Delta\theta_{g,F}$	0.0457
$\Delta\theta_{i,g}$	0.2424

Thermal Properties	
Strain Point StP (°C)	
Annealing Point AP (°C)	
Transformation Temperature Tg (°C)	435
Yield Point At (°C)	460
Softening Point SP (°C)	
Expansion Coefficients (-30~+70°C)	136
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	166
Thermal Conductivity λ W/(m·K)	0.876

Coloring			
λ_{80}	335	λ_5	290
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	329	$\lambda_{0.05}$	285

CCI		
B	G	R
0.00	0.13	0.08

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	0.02
290	0.08
300	0.22
310	0.43
320	0.65
330	0.81
340	0.907
350	0.957
360	0.979
370	0.989
380	0.995
390	0.996
400	0.996
420	0.995
440	0.995
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.997
700	0.997
800	0.997
900	0.996
1000	0.995
1200	0.996
1400	0.997
1600	0.997
1800	0.997
2000	0.997
2200	0.996
2400	0.997

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-5.4	-5.2	-5.2	-5.2	-5.1	-5.0	-4.9
-20~ 0	-5.8	-5.7	-5.7	-5.6	-5.6	-5.4	-5.3
0~20	-6.1	-6.0	-6.0	-6.0	-5.9	-5.8	-5.6
20~40	-6.4	-6.3	-6.3	-6.3	-6.2	-6.0	-5.9
40~60	-6.7	-6.5	-6.5	-6.5	-6.4	-6.3	-6.1
60~80	-6.9	-6.8	-6.8	-6.7	-6.6	-6.5	-6.4

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.59
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.