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		
λ(μm)		
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_{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_{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 (GPa)	69.8	
Rigidity Modulus G (GPa)	26.8	
Poisson's Ratio σ	0.302	
Knoop Hardness Hk[Class]	330	3
Abrasion Aa	470	

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 Δθfrom "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 (℃)		-
Annealing Point AP (℃)		-
Transformation Temperature Tg (℃)		435
Yield Point At (℃)		460
Softening Point SP (℃)		-
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	136
	(+100~+300℃)	166
Thermal Conductivity λ W/(m·K)		0.876

Coloring			
λ_{80}	330	λ_5	
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	324	$\lambda_{0.05}$	275

CCI		
B	G	R
0.00	0.04	0.04

Internal Transmittance	
λ(nm)	τ 10mm
280	0.10
290	0.22
300	0.39
310	0.59
320	0.76
330	0.87
340	0.941
350	0.972
360	0.987
370	0.994
380	0.997
390	0.998
400	0.998
420	0.998
440	0.998
460	0.998
480	0.999
500	0.999
550	0.999
600	0.999
650	0.999
700	0.999
800	0.998
900	0.997
1000	0.997
1200	0.998
1400	0.998
1600	0.998
1800	0.997
2000	0.997
2200	0.996
2400	0.996

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}$$K^{-1}$)						
	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	
Photoelastic Constant β nm/(cm·10^5Pa)	0.59
Specific Gravity d	3.59
Remarks	

OHARA 24-01

※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.