

S-LAL14

Code(d) **697555**

Code(e) **700553**

Refractive Index n_d	1.69680	Abbe Number ν_d	55.53	Dispersion n_F-n_C	0.012548
	1.696797				
Refractive Index n_e	1.699788	Abbe Number ν_e	55.31	Dispersion n_F-n_C'	0.012653

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.65820
n_{1970}	1.97009	1.66578
n_{1530}	1.52958	1.67369
n_{1129}	1.12864	1.68039
n_t	1.01398	1.68252
n_s	0.85211	1.68615
$n_{A'}$	0.76819	1.68858
n_f	0.70652	1.69079
n_C	0.65627	1.69297
$n_{C'}$	0.64385	1.69358
$n_{\text{He-Ne}}$	0.6328	1.69415
n_D	0.58929	1.69669
n_d	0.58756	1.69680
n_e	0.54607	1.69979
n_F	0.48613	1.70552
$n_{F'}$	0.47999	1.70624
$n_{\text{He-Cd}}$	0.44157	1.71144
n_g	0.435835	1.71234
n_h	0.404656	1.71800
n_i	0.365015	1.72767

Constants of Dispersion Formula	
A_1	1.23720970E+00
A_2	5.89722623E-01
A_3	1.31921880E+00
B_1	1.53551320E-02
B_2	-3.07896250E-04
B_3	9.37202947E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1~2
Acid Resistance(Surface) Group SR	52.2
Phosphate Resistance PR	3.0

Mechanical Properties	
Young's Modulus E (GPa)	111.8
Rigidity Modulus G (GPa)	43.5
Poisson's Ratio σ	0.284
Knoop Hardness Hk[Class]	660 * 7
Abrasion Aa	83

Partial Dispersions	
n_C-n_t	0.010452
$n_C-n_{A'}$	0.004389
n_d-n_C	0.003823
n_e-n_C	0.006814
n_g-n_d	0.015543
n_g-n_F	0.006818
n_h-n_g	0.005665
n_i-n_g	0.015333
n_C-n_t	0.011061
$n_e-n_{C'}$	0.006205
$n_{F'}-n_e$	0.006448
$n_i-n_{F'}$	0.021437

Relative Partial Dispersions	
$\theta_{C,t}$	0.8330
$\theta_{C,A'}$	0.3498
$\theta_{d,C}$	0.3047
$\theta_{e,C}$	0.5430
$\theta_{g,d}$	1.2387
$\theta_{g,F}$	0.5434
$\theta_{h,g}$	0.4515
$\theta_{i,g}$	1.2219
$\theta'_{C,t}$	0.8742
$\theta'_{e,C}$	0.4904
$\theta'_{F,e}$	0.5096
$\theta'_{i,F'}$	1.6942

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0258
$\Delta \theta_{C,A'}$	0.0066
$\Delta \theta_{g,d}$	-0.0107
$\Delta \theta_{g,F}$	-0.0082
$\Delta \theta_{i,g}$	-0.0381

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	650
Yield Point At (°C)	668
Softening Point SP (°C)	700
Expansion Coefficients (-30~+70°C)	57
α (10^{-7}K^{-1}) (+100~+300°C)	71
Thermal Conductivity λ W/(m·K)	0.908

Coloring			
λ_{80}	365	λ_5	285
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	349	$\lambda_{0.05}$	285

CCI		
B	G	R
0.00	0.32	0.29

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	0.03
290	0.07
300	0.15
310	0.27
320	0.41
330	0.56
340	0.70
350	0.81
360	0.88
370	0.931
380	0.959
390	0.974
400	0.982
420	0.990
440	0.993
460	0.995
480	0.997
500	0.998
550	0.998
600	0.997
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.991
1600	0.992
1800	0.982
2000	0.954
2200	0.86
2400	0.59

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	3.5	3.7	3.8	3.9	4.0	4.2	4.7
-20~ 0	3.4	3.7	3.8	3.9	4.0	4.3	4.7
0~20	3.4	3.7	3.8	4.0	4.1	4.4	4.8
20~40	3.4	3.8	3.9	4.1	4.2	4.6	4.9
40~60	3.5	4.0	4.0	4.2	4.3	4.8	5.1
60~80	3.7	4.2	4.2	4.4	4.5	5.0	5.4

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁹ Pa)	1.86
Specific Gravity d	3.70
Remarks	

OHARA 23-05

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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.