

S-BSL 7

Code(d) **516641**

Code(e) **518639**

Refractive Index n_d	1.51633	Abbe Number ν_d	64.14	Dispersion n_F-n_C	0.008050
Refractive Index n_e	1.516330	Abbe Number ν_e	63.93	Dispersion n_F-n_C'	0.008107

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.48899
n_{1970}	1.97009	1.49462
n_{1530}	1.52958	1.50050
n_{1129}	1.12864	1.50536
n_t	1.01398	1.50686
n_s	0.85211	1.50935
$n_{A'}$	0.76819	1.51097
n_r	0.70652	1.51243
n_C	0.65627	1.51386
$n_{C'}$	0.64385	1.51425
$n_{\text{He-Ne}}$	0.6328	1.51462
n_D	0.58929	1.51626
n_d	0.58756	1.51633
n_e	0.54607	1.51825
n_F	0.48613	1.52191
$n_{F'}$	0.47999	1.52236
$n_{\text{He-Cd}}$	0.44157	1.52564
n_g	0.435835	1.52621
n_h	0.404656	1.52977
n_i	0.365015	1.53578

Constants of Dispersion Formula	
A_1	1.15150190E+00
A_2	1.18583612E-01
A_3	1.26301359E+00
B_1	1.05984130E-02
B_2	-1.18225190E-02
B_3	1.29617662E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1~2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	80.0
Rigidity Modulus G (GPa)	33.2
Poisson's Ratio σ	0.205
Knoop Hardness Hk(Class)	570 6
Abrasion Aa	94

Partial Dispersions	
n_C-n_t	0.006993
$n_C-n_{A'}$	0.002882
n_d-n_C	0.002475
n_e-n_C	0.004396
n_g-n_d	0.009884
n_g-n_F	0.004309
n_h-n_g	0.003554
n_i-n_g	0.009571
n_C-n_t	0.007389
$n_e-n_{C'}$	0.004000
$n_{F'}-n_e$	0.004107
$n_i-n_{F'}$	0.013427

Relative Partial Dispersions	
$\theta_{C,t}$	0.8687
$\theta_{C,A'}$	0.3580
$\theta_{d,C}$	0.3075
$\theta_{e,C}$	0.5461
$\theta_{g,d}$	1.2278
$\theta_{g,F}$	0.5353
$\theta_{h,g}$	0.4415
$\theta_{i,g}$	1.1889
$\theta'_{C,t}$	0.9114
$\theta'_{e,C}$	0.4934
$\theta'_{F,e}$	0.5066
$\theta'_{i,F'}$	1.6562

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0211
$\Delta \theta_{C,A'}$	0.0044
$\Delta \theta_{g,d}$	-0.0037
$\Delta \theta_{g,F}$	-0.0024
$\Delta \theta_{i,g}$	0.0010

Thermal Properties	
Strain Point StP (°C)	532
Annealing Point AP (°C)	563
Transformation Temperature Tg (°C)	576
Yield Point At (°C)	625
Softening Point SP (°C)	718
Expansion Coefficients (-30~+70°C)	72
α (10^{-7}K^{-1}) (+100~+300°C)	86
Thermal Conductivity λ W/(m·K)	1.13

Coloring			
λ_{80}	320	λ_5	280
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	315	$\lambda_{0.05}$	278

CCI		
B	G	R
0.00	0.06	0.04

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	0.06
290	0.25
300	0.52
310	0.74
320	0.87
330	0.936
340	0.969
350	0.984
360	0.991
370	0.994
380	0.995
390	0.997
400	0.998
420	0.998
440	0.997
460	0.997
480	0.997
500	0.998
550	0.999
600	0.999
650	0.998
700	0.999
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.973
1600	0.989
1800	0.968
2000	0.933
2200	0.82
2400	0.77

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	2.1	2.3	2.3	2.4	2.5	2.7	3.0
-20~ 0	2.1	2.4	2.4	2.5	2.6	2.8	3.1
0~20	2.2	2.5	2.5	2.6	2.7	3.0	3.2
20~40	2.2	2.6	2.6	2.7	2.8	3.1	3.3
40~60	2.3	2.6	2.7	2.8	2.9	3.2	3.5
60~80	2.4	2.7	2.7	2.9	3.0	3.3	3.6

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.79
Specific Gravity d	2.52
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.