

S-BSL 7

Code(d) **516641**

Code(e) **518639**

Refractive Index n_d	1.51633 1.516330	Abbe Number v_d	64.1 64.14	Dispersion n_F-n_C	0.00805 0.008050
Refractive Index n_e	1.518251	Abbe Number v_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

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

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 /°C) (+100~+300°C)	86
Thermal Conductivity k (W/m·K)	1.13

Coloring			
λ_{80}	33	λ_5	29
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	0.08
300	0.31
310	0.58
320	0.77
330	0.88
340	0.940
350	0.968
360	0.984
370	0.991
380	0.991
390	0.996
400	0.997
420	0.996
440	0.995
460	0.995
480	0.996
500	0.996
550	0.998
600	0.997
650	0.997
700	0.998
800	0.998
900	0.997
1000	0.996
1200	0.995
1400	0.982
1600	0.991
1800	0.980
2000	0.961
2200	0.89
2400	0.85

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

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	800
Rigidity Modulus G (10 ⁸ N/m ²)	332
Poisson's Ratio σ	0.205
Knoop Hardness Hk[Class]	570 6
Abrasion Aa	94
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.79

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.52
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 ⁻⁶ /°C)						
	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