

L-BSL 7

Code(d) **516641**

Code(e) **518638**

Refractive Index n_d	1.51633 1.516330	Abbe Number ν_d	64.1 64.06	Dispersion n_F-n_C	0.00806 0.008060
Refractive Index n_e	1.518253	Abbe Number ν_e	63.87	Dispersion $n_F-n_{C'}$	0.008114

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.48810
n_{1970}	1.97009	1.49404
n_{1530}	1.52958	1.50020
n_{1129}	1.12864	1.50523
n_t	1.01398	1.50677
n_s	0.85211	1.50930
$n_{A'}$	0.76819	1.51094
n_r	0.70652	1.51241
n_C	0.65627	1.51385
$n_{C'}$	0.64385	1.51424
$n_{\text{He-Ne}}$	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	1.52620
n_h	0.404656	1.52975
n_i	0.365015	1.53574

Partial Dispersions	
n_C-n_t	0.007081
$n_C-n_{A'}$	0.002904
n_d-n_C	0.002484
n_e-n_C	0.004407
n_g-n_d	0.009874
n_g-n_F	0.004298
n_h-n_g	0.003544
n_i-n_g	0.009541
n_C-n_t	0.007479
$n_e-n_{C'}$	0.004009
$n_{F'}-n_e$	0.004105
$n_i-n_{F'}$	0.013387

Relative Partial Dispersions	
$\theta_{C,t}$	0.8785
$\theta_{C,A'}$	0.3603
$\theta_{d,C}$	0.3082
$\theta_{e,C}$	0.5468
$\theta_{g,d}$	1.2251
$\theta_{g,F}$	0.5333
$\theta_{h,g}$	0.4397
$\theta_{i,g}$	1.1837
$\theta'_{C,t}$	0.9217
$\theta'_{e,C'}$	0.4941
$\theta'_{F',e}$	0.5059
$\theta'_{i,F}$	1.6499

Thermal Properties	
Strain Point StP (°C)	464
Annealing Point AP (°C)	488
Transformation Temperature Tg (°C)	498
Yield Point At (°C)	549
Softening Point SP (°C)	630
Expansion Coefficients (-30~+70°C)	58
α (10 ⁻⁷ /°C) (+100~+300°C)	71
Thermal Conductivity k (W/m·K)	1.169

Coloring			
λ_{80}	330	λ_5	295
λ_{70}			

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0312
$\Delta \theta_{C,A'}$	0.0068
$\Delta \theta_{g,d}$	-0.0066
$\Delta \theta_{g,F}$	-0.0045
$\Delta \theta_{i,g}$	-0.0049

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	793
Rigidity Modulus G (10 ⁸ N/m ²)	327
Poisson's Ratio σ	0.214
Knoop Hardness Hk(Class)	560 6
Abrasion Aa	69
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.93

Constants of Dispersion Formula	
A_1	9.17473918E-01
A_2	3.52687665E-01
A_3	1.05579788E+00
B_1	5.27701411E-03
B_2	1.70809497E-02
B_3	1.04302583E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.2

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.38
Remarks	

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	0.08
310	0.4
320	0.71
330	0.87
340	0.942
350	0.973
360	0.986
370	0.992
380	0.994
390	0.996
400	0.997
420	0.997
440	0.997
460	0.997
480	0.998
500	0.999
550	0.999
600	0.999
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.974
1600	0.994
1800	0.988
2000	0.974
2200	0.87
2400	0.8

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	4.0	4.3	4.3	4.4	4.5	4.7	4.9
-20~ 0	4.1	4.4	4.4	4.5	4.6	4.8	5.1
0~20	4.1	4.5	4.5	4.6	4.7	4.9	5.2
20~40	4.2	4.6	4.6	4.7	4.8	5.1	5.3
40~60	4.3	4.7	4.7	4.8	4.9	5.2	5.5
60~80	4.4	4.7	4.8	4.9	5.0	5.3	5.6