

L-BAL42

Code(d) **583594**

Code(e) **585591**

Refractive Index n_d	1.58313	Abbe Number ν_d	59.4	Dispersion n_F-n_C	0.00982
	1.583126		59.38		0.009820
Refractive Index n_e	1.585468	Abbe Number ν_e	59.13	Dispersion $n_F-n_{C'}$	0.009901

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.55402
n_{1970}	1.97009	1.55949
n_{1530}	1.52958	1.56533
n_{1129}	1.12864	1.57038
n_t	1.01398	1.57201
n_s	0.85211	1.57482
$n_{A'}$	0.76819	1.57671
n_r	0.70652	1.57843
n_C	0.65627	1.58013
$n_{C'}$	0.64385	1.58061
$n_{\text{He-Ne}}$	0.6328	1.58106
n_D	0.58929	1.58304
n_d	0.58756	1.58313
n_e	0.54607	1.58547
n_F	0.48613	1.58995
$n_{F'}$	0.47999	1.59051
$n_{\text{He-Cd}}$	0.44157	1.59457
n_g	0.435835	1.59528
n_h	0.404656	1.59969
n_i	0.365015	1.60719

Partial Dispersions	
n_C-n_t	0.008122
$n_C-n_{A'}$	0.003426
n_d-n_C	0.002992
n_e-n_C	0.005334
n_g-n_d	0.012153
n_g-n_F	0.005325
n_h-n_g	0.004412
n_i-n_g	0.011910
n_C-n_t	0.008599
$n_e-n_{C'}$	0.004857
$n_{F'}-n_e$	0.005044
$n_i-n_{F'}$	0.016677

Relative Partial Dispersions	
$\theta_{C,t}$	0.8271
$\theta_{C,A'}$	0.3489
$\theta_{d,C}$	0.3047
$\theta_{e,C}$	0.5432
$\theta_{g,d}$	1.2376
$\theta_{g,F}$	0.5423
$\theta_{h,g}$	0.4493
$\theta_{i,g}$	1.2128
$\theta'_{C,t}$	0.8685
$\theta'_{e,C'}$	0.4906
$\theta'_{F',e}$	0.5094
$\theta'_{i,F}$	1.6844

Thermal Properties	
Strain Point StP (°C)	467
Annealing Point AP (°C)	494
Transformation Temperature Tg (°C)	506
Yield Point At (°C)	538
Softening Point SP (°C)	607
Expansion Coefficients (-30~+70°C)	72
α (10 ⁻⁷ /°C) (+100~+300°C)	88
Thermal Conductivity k (W/m·K)	1.028

Coloring			
λ_{80}	340	λ_5	285
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	0.05
300	0.19
310	0.41
320	0.63
330	0.79
340	0.89
350	0.94
360	0.968
370	0.981
380	0.987
390	0.992
400	0.994
420	0.994
440	0.995
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.998
700	0.998
800	0.999
900	0.998
1000	
1200	
1400	
1600	
1800	
2000	
2200	
2400	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0018
$\Delta \theta_{C,A'}$	0.0010
$\Delta \theta_{g,d}$	-0.0038
$\Delta \theta_{g,F}$	-0.0031
$\Delta \theta_{i,g}$	-0.0150

Constants of Dispersion Formula	
A_1	1.39528097E+00
A_2	7.25519520E-02
A_3	1.66335848E+00
B_1	1.11862030E-02
B_2	-2.46748575E-02
B_3	1.67717958E+02

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	891
Rigidity Modulus G (10 ⁸ N/m ²)	357
Poisson's Ratio σ	0.247
Knoop Hardness Hk(Class)	590 6
Abrasion Aa	113
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2~1
Acid Resistance(Surface) Group SR	5.2
Phosphate Resistance PR	2.0

Other Properties	
Bubble Quality Group B	B
Specific Gravity d	3.05
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		3.2	3.2	3.3	3.4	3.8	4.1
-20~ 0		3.2	3.2	3.3	3.5	3.8	4.1
0~20		3.2	3.2	3.3	3.5	3.8	4.2
20~40		3.2	3.2	3.3	3.5	3.8	4.2
40~60		3.2	3.2	3.3	3.5	3.9	4.2
60~80		3.2	3.2	3.3	3.5	3.9	4.3