

S-LAL59

Code(d) **734515**

Code(e) **737512**

Refractive Index n_d	1.73400 1.733997	Abbe Number v_d	51.5 51.47	Dispersion n_F-n_C	0.01426 0.014261
Refractive Index n_e	1.737395	Abbe Number v_e	51.24	Dispersion $n_F'-n_C'$	0.014392

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.69393
n_{1970}	1.97009	1.70130
n_{1530}	1.52958	1.70911
n_{1129}	1.12864	1.71593
n_t	1.01398	1.71817
n_s	0.85211	1.72210
$n_{A'}$	0.76819	1.72477
n_r	0.70652	1.72723
n_C	0.65627	1.72968
$n_{C'}$	0.64385	1.73036
$n_{\text{He-Ne}}$	0.6328	1.73101
n_D	0.58929	1.73387
n_d	0.58756	1.73400
n_e	0.54607	1.73739
n_F	0.48613	1.74394
$n_{F'}$	0.47999	1.74476
$n_{\text{He-Cd}}$	0.44157	1.75072
n_g	0.435835	1.75176
n_h	0.404656	1.75829
n_i	0.365015	1.76950

Partial Dispersions	
n_C-n_t	0.011504
$n_C-n_{A'}$	0.004905
n_d-n_C	0.004318
n_e-n_C	0.007716
n_g-n_d	0.017767
n_g-n_F	0.007824
n_h-n_g	0.006531
n_i-n_g	0.017734
n_C-n_t	0.012190
$n_e-n_{C'}$	0.007030
$n_{F'-n_e}$	0.007362
$n_i-n_{F'}$	0.024741

Relative Partial Dispersions	
$\theta_{C,t}$	0.8067
$\theta_{C,A'}$	0.3439
$\theta_{d,C}$	0.3028
$\theta_{e,C}$	0.5411
$\theta_{g,d}$	1.2458
$\theta_{g,F}$	0.5486
$\theta_{h,g}$	0.4580
$\theta_{i,g}$	1.2435
$\theta'_{C,t}$	0.8470
$\theta'_{e,C'}$	0.4885
$\theta'_{F',e}$	0.5115
$\theta'_{i,F}$	1.7191

Thermal Properties	
Strain Point StP (°C)	591
Annealing Point AP (°C)	620
Transformation Temperature Tg (°C)	635
Yield Point At (°C)	663
Softening Point SP (°C)	696
Expansion Coefficients (-30~+70°C)	55
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	68
Thermal Conductivity k (W/m-K)	0.863

Coloring			
λ_{80}	37	λ_5	29
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	0.02
290	0.11
300	0.20
310	0.34
320	0.48
330	0.62
340	0.74
350	0.83
360	0.89
370	0.934
380	0.959
390	0.973
400	0.982
420	0.990
440	0.993
460	0.995
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	0.997
1200	0.997
1400	0.994
1600	0.994
1800	0.986
2000	0.964
2200	0.905
2400	0.65

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0185
$\Delta\theta_{C,A'}$	0.0056
$\Delta\theta_{g,d}$	-0.0120
$\Delta\theta_{g,F}$	-0.0096
$\Delta\theta_{i,g}$	-0.0505

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	1137
Rigidity Modulus G (10^8N/m^2)	440
Poisson's Ratio σ	0.293
Knoop Hardness Hk[Class]	700 7
Abrasion Aa	77
Photoelastic Constant β (nm/cm/ 10^5Pa)	1.87

Constants of Dispersion Formula	
A_1	1.13962742E+00
A_2	8.05227838E-01
A_3	1.29488061E+00
B_1	4.93294862E-03
B_2	2.02479960E-02
B_3	9.34746507E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	52.0
Phosphate Resistance PR	2.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.04
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20		5.0		5.2	5.4	5.8	6.3
-20~0		5.2		5.4	5.6	6.0	6.5
0~20		5.5		5.7	5.9	6.3	6.8
20~40		5.7		6.0	6.2	6.7	7.2
40~60		6.1		6.3	6.5	7.1	7.6
60~80		6.4		6.7	6.9	7.5	8.0