

L-LAL12

Code(d) **678549**

Code(e) **681546**

Refractive Index n_d	1.67790	Abbe Number v_d	54.9	Dispersion n_F-n_C	0.01235
	1.677900		54.89		0.012351
Refractive Index n_e	1.680844	Abbe Number v_e	54.64	Dispersion n_F-n_C'	0.012460

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.64243
n_{1970}	1.97009	1.64903
n_{1530}	1.52958	1.65602
n_{1129}	1.12864	1.66209
n_t	1.01398	1.66408
n_s	0.85211	1.66753
$n_{A'}$	0.76819	1.66987
n_r	0.70652	1.67202
n_C	0.65627	1.67415
$n_{C'}$	0.64385	1.67475
$n_{\text{He-Ne}}$	0.6328	1.67530
n_D	0.58929	1.67779
n_d	0.58756	1.67790
n_e	0.54607	1.68084
n_F	0.48613	1.68650
$n_{F'}$	0.47999	1.68721
$n_{\text{He-Cd}}$	0.44157	1.69235
n_g	0.435835	1.69324
n_h	0.404656	1.69885
n_i	0.365015	1.70845

Partial Dispersions	
n_C-n_t	0.010069
$n_C-n_{A'}$	0.004276
n_d-n_C	0.003750
n_e-n_C	0.006694
n_g-n_d	0.015342
n_g-n_F	0.006741
n_h-n_g	0.005610
n_i-n_g	0.015203
n_C-n_t	0.010665
$n_e-n_{C'}$	0.006098
$n_{F'-n_e}$	0.006362
$n_i-n_{F'}$	0.021239

Relative Partial Dispersions	
$\theta_{C,t}$	0.8152
$\theta_{C,A'}$	0.3462
$\theta_{d,C}$	0.3036
$\theta_{e,C}$	0.5420
$\theta_{g,d}$	1.2422
$\theta_{g,F}$	0.5458
$\theta_{h,g}$	0.4542
$\theta_{i,g}$	1.2309
$\theta'_{C,t}$	0.8559
$\theta'_{e,C'}$	0.4894
$\theta'_{F',e}$	0.5106
$\theta'_{i,F}$	1.7046

Thermal Properties	
Strain Point StP (°C)	528
Annealing Point AP (°C)	546
Transformation Temperature Tg (°C)	562
Yield Point At (°C)	600
Softening Point SP (°C)	633
Expansion Coefficients (-30~+70°C)	76
α (10 ⁻⁷ /°C) (+100~+300°C)	90
Thermal Conductivity k (W/m·K)	0.925

Coloring			
λ_{80}	37	λ_5	30
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	0.10
310	0.21
320	0.37
330	0.55
340	0.70
350	0.81
360	0.89
370	0.938
380	0.962
390	0.975
400	0.982
420	0.987
440	0.990
460	0.992
480	0.995
500	0.997
550	0.998
600	0.996
650	0.997
700	0.998
800	0.999
900	0.998
1000	0.998
1200	0.999
1400	0.997
1600	0.996
1800	0.989
2000	0.972
2200	0.922
2400	0.736

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0110
$\Delta\theta_{C,A'}$	0.0038
$\Delta\theta_{g,d}$	-0.0085
$\Delta\theta_{g,F}$	-0.0069
$\Delta\theta_{i,g}$	-0.0345

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	1096
Rigidity Modulus G (10 ⁸ N/m ²)	428
Poisson's Ratio σ	0.280
Knoop Hardness Hk[Class]	600 6
Abrasion Aa	112
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	1.80

Constants of Dispersion Formula	
A ₁	1.28516283E+00
A ₂	4.78333797E-01
A ₃	1.21605301E+00
B ₁	6.41062082E-03
B ₂	2.14815099E-02
B ₃	1.00243378E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	3 ~ 4
Acid Resistance(Surface) Group SR	53.2
Phosphate Resistance PR	4.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.48
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	2.0	2.4	2.4	2.6	2.7	3.1	3.4
-20~ 0	2.0	2.4	2.4	2.6	2.8	3.1	3.5
0~20	2.0	2.4	2.5	2.6	2.8	3.2	3.6
20~40	1.9	2.4	2.5	2.6	2.8	3.2	3.6
40~60	1.9	2.5	2.5	2.6	2.8	3.3	3.7
60~80	1.9	2.5	2.5	2.6	2.9	3.3	3.8