

S-LAL56

Code(d) **678507**

Code(e) **681505**

Refractive Index n_d	1.67790 1.677898	Abbe Number v_d	50.7 50.72	Dispersion n_F-n_C	0.01336 0.013365
Refractive Index n_e	1.681080	Abbe Number v_e	50.44	Dispersion $n_F'-n_C'$	0.013502

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.64400
n_{1970}	1.97009	1.64968
n_{1530}	1.52958	1.65585
n_{1129}	1.12864	1.66151
n_t	1.01398	1.66346
n_s	0.85211	1.66694
$n_{A'}$	0.76819	1.66937
n_r	0.70652	1.67162
n_C	0.65627	1.67388
$n_{C'}$	0.64385	1.67452
$n_{\text{He-Ne}}$	0.6328	1.67511
n_D	0.58929	1.67778
n_d	0.58756	1.67790
n_e	0.54607	1.68108
n_F	0.48613	1.68724
$n_{F'}$	0.47999	1.68802
$n_{\text{He-Cd}}$	0.44157	1.69368
n_g	0.435835	1.69467
n_h	0.404656	1.70092
n_i	0.365015	1.71174

Partial Dispersions	
n_C-n_t	0.010425
$n_C-n_{A'}$	0.004514
n_d-n_C	0.004018
n_e-n_C	0.007200
n_g-n_d	0.016774
n_g-n_F	0.007427
n_h-n_g	0.006246
n_i-n_g	0.017068
n_C-n_t	0.011061
$n_e-n_{C'}$	0.006564
$n_{F'-n_e}$	0.006938
$n_i-n_{F'}$	0.023722

Relative Partial Dispersions	
$\theta_{C,t}$	0.7800
$\theta_{C,A'}$	0.3377
$\theta_{d,C}$	0.3006
$\theta_{e,C}$	0.5387
$\theta_{g,d}$	1.2551
$\theta_{g,F}$	0.5557
$\theta_{h,g}$	0.4673
$\theta_{i,g}$	1.2771
$\theta'_{C,t}$	0.8192
$\theta'_{e,C'}$	0.4862
$\theta'_{F',e}$	0.5138
$\theta'_{i,F}$	1.7569

Thermal Properties	
Strain Point StP (°C)	615
Annealing Point AP (°C)	645
Transformation Temperature Tg (°C)	661
Yield Point At (°C)	693
Softening Point SP (°C)	761
Expansion Coefficients (-30~+70°C)	66
α (10 ⁻⁷ /°C) (+100~+300°C)	76
Thermal Conductivity k (W/m·K)	0.778

Coloring			
λ_{80}	38	λ_5	33
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	0.01
340	0.18
350	0.51
360	0.74
370	0.86
380	0.928
390	0.958
400	0.975
420	0.986
440	0.990
460	0.993
480	0.995
500	0.997
550	0.998
600	0.997
650	0.997
700	0.998
800	0.999
900	0.998
1000	0.998
1200	0.997
1400	0.993
1600	0.993
1800	0.986
2000	0.973
2200	0.928
2400	0.81

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0047
$\Delta\theta_{C,A'}$	0.0004
$\Delta\theta_{g,d}$	-0.0043
$\Delta\theta_{g,F}$	-0.0037
$\Delta\theta_{i,g}$	-0.0232

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	911
Rigidity Modulus G (10 ⁸ N/m ²)	356
Poisson's Ratio σ	0.280
Knoop Hardness Hk[Class]	540 5
Abrasion Aa	147
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	1.92

Constants of Dispersion Formula	
A ₁	1.54052000E+00
A ₂	2.17748704E-01
A ₃	1.30456122E+00
B ₁	8.26765101E-03
B ₂	3.28533726E-02
B ₃	1.24527479E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2 ~ 3
Acid Resistance(Surface) Group SR	51.0
Phosphate Resistance PR	2.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.85
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	2.8	3.2	3.2	3.3	3.6	4.0	4.4
-20~0	2.9	3.3	3.4	3.5	3.7	4.1	4.6
0~20	3.0	3.4	3.5	3.6	3.8	4.3	4.8
20~40	3.1	3.5	3.6	3.7	4.0	4.4	4.9
40~60	3.2	3.6	3.7	3.8	4.1	4.6	5.1
60~80	3.3	3.8	3.8	4.0	4.2	4.7	5.3