

S-LAL 7

Code(d) **652585**

Code(e) **654583**

Refractive Index n_d	1.65160	Abbe Number v_d	58.5	Dispersion n_F-n_C	0.01113
	1.651597		58.55		0.011129
Refractive Index n_e	1.654251	Abbe Number v_e	58.31	Dispersion n_F-n_C'	0.011221

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.61850
n_{1970}	1.97009	1.62479
n_{1530}	1.52958	1.63144
n_{1129}	1.12864	1.63715
n_t	1.01398	1.63900
n_s	0.85211	1.64218
$n_{A'}$	0.76819	1.64432
n_r	0.70652	1.64627
n_C	0.65627	1.64821
$n_{C'}$	0.64385	1.64875
$n_{\text{He-Ne}}$	0.6328	1.64925
n_D	0.58929	1.65150
n_d	0.58756	1.65160
n_e	0.54607	1.65425
n_F	0.48613	1.65934
$n_{F'}$	0.47999	1.65997
$n_{\text{He-Cd}}$	0.44157	1.66457
n_g	0.435835	1.66537
n_h	0.404656	1.67038
n_i	0.365015	1.67892

Partial Dispersions	
n_C-n_t	0.009204
$n_C-n_{A'}$	0.003884
n_d-n_C	0.003390
n_e-n_C	0.006044
n_g-n_d	0.013777
n_g-n_F	0.006038
n_h-n_g	0.005010
n_i-n_g	0.013542
n_C-n_t	0.009744
$n_e-n_{C'}$	0.005504
$n_{F'-n_e}$	0.005717
$n_i-n_{F'}$	0.018948

Relative Partial Dispersions	
$\theta_{C,t}$	0.8270
$\theta_{C,A'}$	0.3490
$\theta_{d,C}$	0.3046
$\theta_{e,C}$	0.5431
$\theta_{g,d}$	1.2379
$\theta_{g,F}$	0.5425
$\theta_{h,g}$	0.4502
$\theta_{i,g}$	1.2168
$\theta'_{C,t}$	0.8684
$\theta'_{e,C'}$	0.4905
$\theta'_{F',e}$	0.5095
$\theta'_{i,F}$	1.6886

Thermal Properties	
Strain Point StP (°C)	582
Annealing Point AP (°C)	603
Transformation Temperature Tg (°C)	617
Yield Point At (°C)	658
Softening Point SP (°C)	694
Expansion Coefficients (-30~+70°C)	67
α (10 ⁻⁷ /°C) (+100~+300°C)	81
Thermal Conductivity k (W/m·K)	0.825

Coloring			
λ_{80}	35	λ_5	28
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	0.09
290	0.22
300	0.38
310	0.55
320	0.69
330	0.80
340	0.88
350	0.929
360	0.957
370	0.974
380	0.984
390	0.990
400	0.992
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	0.998
1200	0.997
1400	0.991
1600	0.993
1800	0.984
2000	0.968
2200	0.903
2400	0.74

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0056
$\Delta\theta_{C,A'}$	0.0022
$\Delta\theta_{g,d}$	-0.0052
$\Delta\theta_{g,F}$	-0.0042
$\Delta\theta_{i,g}$	-0.0179

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	958
Rigidity Modulus G (10 ⁸ N/m ²)	377
Poisson's Ratio σ	0.271
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	136
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	1.72

Constants of Dispersion Formula	
A ₁	9.16121247E-01
A ₂	7.65948319E-01
A ₃	1.27745023E+00
B ₁	3.95889743E-03
B ₂	1.67547425E-02
B ₃	1.10762706E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	5
Weathering Resistance(Surface) Group W(S)	2 ~ 3
Acid Resistance(Surface) Group SR	53.0
Phosphate Resistance PR	4.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.73
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	1.5	1.8	1.8	1.9	2.0	2.3	2.6
-20~ 0	1.5	1.8	1.9	2.0	2.1	2.4	2.7
0~20	1.6	1.9	2.0	2.1	2.2	2.5	2.8
20~40	1.8	2.0	2.0	2.2	2.3	2.6	3.0
40~60	1.8	2.1	2.1	2.3	2.4	2.8	3.1
60~80	1.8	2.2	2.2	2.4	2.5	2.9	3.2