

S-LAM59

Code(d) **697485**

Code(e) **700482**

Refractive Index n_d	1.69700 1.697002	Abbe Number v_d	48.5 48.52	Dispersion n_F-n_C	0.01436 0.014366
Refractive Index n_e	1.700421	Abbe Number v_e	48.24	Dispersion n_F-n_C'	0.014521

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.66174
n_{1970}	1.97009	1.66748
n_{1530}	1.52958	1.67376
n_{1129}	1.12864	1.67959
n_t	1.01398	1.68163
n_s	0.85211	1.68530
$n_{A'}$	0.76819	1.68788
n_r	0.70652	1.69028
n_C	0.65627	1.69270
$n_{C'}$	0.64385	1.69338
$n_{\text{He-Ne}}$	0.6328	1.69401
n_D	0.58929	1.69688
n_d	0.58756	1.69700
n_e	0.54607	1.70042
n_F	0.48613	1.70706
$n_{F'}$	0.47999	1.70790
$n_{\text{He-Cd}}$	0.44157	1.71402
n_g	0.435835	1.71509
n_h	0.404656	1.72187
n_i	0.365015	1.73366

Partial Dispersions	
n_C-n_t	0.011071
$n_C-n_{A'}$	0.004818
n_d-n_C	0.004306
n_e-n_C	0.007725
n_g-n_d	0.018089
n_g-n_F	0.008029
n_h-n_g	0.006774
n_i-n_g	0.018569
n_C-n_t	0.011751
$n_e-n_{C'}$	0.007045
$n_{F'-n_e}$	0.007476
$n_i-n_{F'}$	0.025763

Relative Partial Dispersions	
$\theta_{C,t}$	0.7706
$\theta_{C,A'}$	0.3354
$\theta_{d,C}$	0.2997
$\theta_{e,C}$	0.5377
$\theta_{g,d}$	1.2592
$\theta_{g,F}$	0.5589
$\theta_{h,g}$	0.4715
$\theta_{i,g}$	1.2926
$\theta'_{C,t}$	0.8092
$\theta'_{e,C'}$	0.4852
$\theta'_{F',e}$	0.5148
$\theta'_{i,F}$	1.7742

Thermal Properties	
Strain Point StP (°C)	594
Annealing Point AP (°C)	623
Transformation Temperature Tg (°C)	634
Yield Point At (°C)	678
Softening Point SP (°C)	735
Expansion Coefficients (-30~+70°C)	71
α (10 ⁻⁷ /°C) (+100~+300°C)	83
Thermal Conductivity k (W/m·K)	0.847

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

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	0.14
350	0.47
360	0.73
370	0.86
380	0.923
390	0.954
400	0.969
420	0.982
440	0.986
460	0.989
480	0.992
500	0.995
550	0.997
600	0.996
650	0.995
700	0.997
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.996
1600	0.996
1800	0.991
2000	0.982
2200	0.952
2400	0.85

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0037
$\Delta\theta_{C,A'}$	0.0007
$\Delta\theta_{g,d}$	-0.0047
$\Delta\theta_{g,F}$	-0.0041
$\Delta\theta_{i,g}$	-0.0261

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	1006
Rigidity Modulus G (10 ⁸ N/m ²)	394
Poisson's Ratio σ	0.277
Knoop Hardness Hk[Class]	600 6
Abrasion Aa	142
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	1.69

Constants of Dispersion Formula	
A ₁	1.63056133E+00
A ₂	1.86994897E-01
A ₃	1.30014289E+00
B ₁	8.99690705E-03
B ₂	3.68011993E-02
B ₃	1.22239544E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	5.2
Phosphate Resistance PR	1.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.77
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		2.7	2.7	2.9	3.1	3.5	4.0
-20~0		2.8	2.8	3.0	3.2	3.7	4.2
0~20		2.9	2.9	3.1	3.3	3.8	4.3
20~40		3.0	3.0	3.2	3.4	3.9	4.5
40~60		3.1	3.1	3.3	3.5	4.1	4.6
60~80		3.1	3.2	3.4	3.6	4.2	4.8