

L-TIM28

Code(d) **689311**

Code(e) **694308**

Refractive Index n_d	1.68893 1.688931	Abbe Number ν_d	31.1 31.08	Dispersion n_F-n_C	0.02217 0.022168
Refractive Index n_e	1.694169	Abbe Number ν_e	30.84	Dispersion $n_F-n_{C'}$	0.022511

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.64569
n_{1970}	1.97009	1.65134
n_{1530}	1.52958	1.65780
n_{1129}	1.12864	1.66448
n_t	1.01398	1.66704
n_s	0.85211	1.67193
$n_{A'}$	0.76819	1.67552
n_r	0.70652	1.67896
n_C	0.65627	1.68249
$n_{C'}$	0.64385	1.68350
$n_{\text{He-Ne}}$	0.6328	1.68444
n_D	0.58929	1.68874
n_d	0.58756	1.68893
n_e	0.54607	1.69417
n_F	0.48613	1.70466
$n_{F'}$	0.47999	1.70601
$n_{\text{He-Cd}}$	0.44157	1.71611
n_g	0.435835	1.71793
n_h	0.404656	1.72970
n_i	0.365015	1.75177

Partial Dispersions	
n_C-n_t	0.015448
$n_C-n_{A'}$	0.006965
n_d-n_C	0.006441
n_e-n_C	0.011679
n_g-n_d	0.028996
n_g-n_F	0.013269
n_h-n_g	0.011773
n_i-n_g	0.033843
n_C-n_t	0.016453
$n_e-n_{C'}$	0.010674
$n_{F'}-n_e$	0.011837
$n_i-n_{F'}$	0.045764

Relative Partial Dispersions	
$\theta_{C,t}$	0.6969
$\theta_{C,A'}$	0.3142
$\theta_{d,C}$	0.2906
$\theta_{e,C}$	0.5268
$\theta_{g,d}$	1.3080
$\theta_{g,F}$	0.5986
$\theta_{h,g}$	0.5311
$\theta_{i,g}$	1.5267
$\theta'_{C,t}$	0.7309
$\theta'_{e,C'}$	0.4742
$\theta'_{F',e}$	0.5258
$\theta'_{i,F}$	2.0330

Thermal Properties	
Strain Point StP (°C)	453
Annealing Point AP (°C)	484
Transformation Temperature Tg (°C)	504
Yield Point At (°C)	539
Softening Point SP (°C)	582
Expansion Coefficients (-30~+70°C)	101
α (10 ⁻⁷ /°C) (+100~+300°C)	130
Thermal Conductivity k (W/m·K)	1.02

Coloring			
λ_{80}	400	λ_5	355
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.01
360	0.21
370	0.6
380	0.82
390	0.903
400	0.94
420	0.969
440	0.979
460	0.984
480	0.988
500	0.991
550	0.997
600	0.996
650	0.995
700	0.997
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.998
1600	0.995
1800	0.98
2000	0.962
2200	0.927
2400	0.89

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0044
$\Delta \theta_{C,A'}$	0.0007
$\Delta \theta_{g,d}$	0.0078
$\Delta \theta_{g,F}$	0.0074
$\Delta \theta_{i,g}$	0.0619

Constants of Dispersion Formula	
A_1	1.58039099E+00
A_2	1.78294323E-01
A_3	1.14876204E+00
B_1	1.25270147E-02
B_2	6.02807505E-02
B_3	1.16215055E+02

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	845
Rigidity Modulus G (10 ⁸ N/m ²)	337
Poisson's Ratio σ	0.254
Knoop Hardness Hk(Class)	530 5
Abrasion Aa	197
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2~1
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Other Properties	
Bubble Quality Group B	B
Specific Gravity d	2.88
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		-0.3	-0.2	0.1	0.4	1.3	2.3
-20~ 0		-0.3	-0.2	0.1	0.5	1.4	2.5
0~20		-0.3	-0.2	0.1	0.5	1.5	2.6
20~40		-0.3	-0.2	0.1	0.5	1.5	2.7
40~60		-0.3	-0.2	0.1	0.5	1.6	2.9
60~80		-0.3	-0.3	0.1	0.6	1.7	3.0