

S-TIM27

Code(d) **640345**

Code(e) **644342**

Refractive Index n_d	1.63980	Abbe Number v_d	34.5	Dispersion n_F-n_C	0.01856
	1.639799		34.46		0.018564
Refractive Index n_e	1.644189	Abbe Number v_e	34.20	Dispersion n_F-n_C	0.018835

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.60036
n_{1970}	1.97009	1.60608
n_{1530}	1.52958	1.61249
n_{1129}	1.12864	1.61878
n_t	1.01398	1.62108
n_s	0.85211	1.62537
$n_{A'}$	0.76819	1.62846
n_r	0.70652	1.63138
n_C	0.65627	1.63438
$n_{C'}$	0.64385	1.63522
$n_{\text{He-Ne}}$	0.6328	1.63602
n_D	0.58929	1.63964
n_d	0.58756	1.63980
n_e	0.54607	1.64419
n_F	0.48613	1.65294
$n_{F'}$	0.47999	1.65406
$n_{\text{He-Cd}}$	0.44157	1.66244
n_g	0.435835	1.66393
n_h	0.404656	1.67361
n_i	0.365015	

Partial Dispersions	
n_C-n_t	0.013292
$n_C-n_{A'}$	0.005916
n_d-n_C	0.005424
n_e-n_C	0.009814
n_g-n_d	0.024134
n_g-n_F	0.010994
n_h-n_g	0.009680
n_i-n_g	
n_C-n_t	0.014141
$n_e-n_{C'}$	0.008965
$n_{F'}-n_e$	0.009870
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7160
$\theta_{C,A'}$	0.3187
$\theta_{d,C}$	0.2922
$\theta_{e,C}$	0.5287
$\theta_{g,d}$	1.3000
$\theta_{g,F}$	0.5922
$\theta_{h,g}$	0.5214
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7508
$\theta'_{e,C'}$	0.4760
$\theta'_{F',e}$	0.5240
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	543
Annealing Point AP (°C)	572
Transformation Temperature Tg (°C)	594
Yield Point At (°C)	629
Softening Point SP (°C)	696
Expansion Coefficients (-30~+70°C)	80
α (10 ⁻⁷ /°C) (+100~+300°C)	99
Thermal Conductivity k (W/m·K)	1.035

Coloring			
λ_{80}	39	λ_5	36
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	0.05
370	0.41
380	0.73
390	0.87
400	0.935
420	0.973
440	0.983
460	0.987
480	0.990
500	0.992
550	0.997
600	0.997
650	0.996
700	0.997
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.995
1600	0.994
1800	0.984
2000	0.973
2200	0.936
2400	0.919

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0076
$\Delta\theta_{C,A'}$	0.0011
$\Delta\theta_{g,d}$	0.0069
$\Delta\theta_{g,F}$	0.0065
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	793
Rigidity Modulus G (10 ⁸ N/m ²)	321
Poisson's Ratio σ	0.236
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	141
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.83

Constants of Dispersion Formula	
A ₁	1.41680470E+00
A ₂	1.96785057E-01
A ₃	1.68001322E+00
B ₁	1.00732158E-02
B ₂	5.37616908E-02
B ₃	1.64672436E+02

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.76
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	1.2	1.9	1.9	2.2	2.5	3.2	4.0
-20~ 0	1.3	2.0	2.0	2.3	2.6	3.3	4.2
0~20	1.3	2.1	2.1	2.4	2.7	3.5	4.4
20~40	1.4	2.1	2.2	2.5	2.8	3.7	4.6
40~60	1.4	2.2	2.3	2.6	2.9	3.8	4.8
60~80	1.5	2.3	2.4	2.7	3.0	4.0	5.1