S-TIL27

Code(d) **575415**

Code(e) **578412**

Refractive Index	n_d	**1.57501**	Abbe Number	v_d	**41.5**	Dispersion	n_F-n_C	**0.01386**
		1.575006			41.50			0.013854
Refractive Index	n_e	1.578291	Abbe Number	v_e	41.22	Dispersion	n_F'-$n_{C'}$	0.014028

Refractive Indicies		
λ(μm)		
n_{2325}	2.32542	1.54162
n_{1970}	1.97009	1.54707
n_{1530}	1.52958	1.55304
n_{1129}	1.12864	1.55855
n_t	1.01398	1.56047
n_s	0.85211	1.56392
$n_{A'}$	0.76819	1.56635
n_r	0.70652	1.56861
n_C	0.65627	1.57090
$n_{C'}$	0.64385	1.57155
n_{He-Ne}	0.6328	1.57216
n_D	0.58929	1.57488
n_d	0.58756	1.57501
n_e	0.54607	1.57829
n_F	0.48613	1.58476
$n_{F'}$	0.47999	1.58558
n_{He-Cd}	0.44157	1.59167
n_g	0.435835	1.59275
n_h	0.404656	1.59966
n_i	0.365015	1.61218

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0117
$\Delta\theta_{C,A'}$	0.0024
$\Delta\theta_{g,d}$	0.0019
$\Delta\theta_{g,F}$	0.0024
$\Delta\theta_{i,g}$	0.0257

Constants of Dispersion Formula	
A_1	1.31433154E+00
A_2	1.12300168E-01
A_3	1.41390100E+00
B_1	9.50404477E-03
B_2	5.24112772E-02
B_3	1.48429972E+02

Other Properties	
Bubble Quality Group B	B
Specific Gravity d	2.58
Remarks	

Partial Dispersions	
n_C-n_t	0.010433
n_C-$n_{A'}$	0.004553
n_d-n_C	0.004104
n_e-n_C	0.007389
n_g-n_d	0.017739
n_g-n_F	0.007989
n_h-n_g	0.006918
n_i-n_g	0.019440
n_C-n_t	0.011080
n_e-$n_{C'}$	0.006742
n_F-n_e	0.007286
n_i-$n_{F'}$	0.026608

Thermal Properties		
Strain Point StP (℃)		511
Annealing Point AP (℃)		547
Transformation Temperature Tg (℃)		562
Yield Point At (℃)		599
Softening Point SP (℃)		700
Expansion Coefficients α (10^{-7}/℃)	(-30~+70℃)	74
	(+100~+300℃)	89
Thermal Conductivity k (W/m·K)		1.07

Mechanical Properties		
Young's Modulus E (10^8N/m^2)	749	
Rigidity Modulus G (10^8N/m^2)	308	
Poisson's Ratio σ	0.217	
Knoop Hardness Hk[Class]	540	5
Abrasion Aa	120	
Photoelastic Constant β (nm/cm/10^5Pa)		2.81

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

Relative Partial Dispersions	
$\theta_{C,t}$	0.7531
$\theta_{C,A'}$	0.3286
$\theta_{d,C}$	0.2962
$\theta_{e,C}$	0.5333
$\theta_{g,d}$	1.2804
$\theta_{g,F}$	0.5767
$\theta_{h,g}$	0.4994
$\theta_{i,g}$	1.4032
$\theta'_{C',t}$	0.7898
$\theta'_{e,C'}$	0.4806
$\theta'_{F',e}$	0.5194
$\theta'_{i,F}$	1.8968

Coloring			
λ_{80}	38	λ_5	35
λ_{70}			

Internal Transmittance	
λ(nm)	τ10mm
280	
290	
300	
310	
320	
330	
340	
350	0.05
360	0.44
370	0.78
380	0.913
390	0.961
400	0.979
420	0.990
440	0.993
460	0.994
480	0.995
500	0.996
550	0.998
600	0.998
650	0.998
700	0.998
800	0.999
900	0.999
1000	0.998
1200	0.998
1400	0.994
1600	0.993
1800	0.978
2000	0.955
2200	0.89
2400	0.87

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	dn/dt relative (10^{-6}/℃)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.4	2.9	3.0	3.1	3.3	3.9	4.5
-20~ 0	2.4	2.9	3.0	3.2	3.4	4.0	4.6
0~20	2.5	3.0	3.0	3.2	3.5	4.0	4.7
20~40	2.5	3.0	3.1	3.3	3.5	4.1	4.8
40~60	2.5	3.0	3.1	3.3	3.6	4.2	4.9
60~80	2.5	3.1	3.1	3.3	3.6	4.3	5.0