

S-TIH11

Code(d) **785257**

Code(e) **792255**

Refractive Index n_d	1.78472 1.784723	Abbe Number v_d	25.7 25.68	Dispersion n_F-n_C	0.03056 0.030554
Refractive Index n_e	1.791920	Abbe Number v_e	25.47	Dispersion n_F-n_C	0.031088

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.72998
n_{1970}	1.97009	1.73639
n_{1530}	1.52958	1.74397
n_{1129}	1.12864	1.75222
n_t	1.01398	1.75549
n_s	0.85211	1.76186
$n_{A'}$	0.76819	1.76662
n_r	0.70652	1.77121
n_C	0.65627	1.77596
$n_{C'}$	0.64385	1.77733
$n_{\text{He-Ne}}$	0.6328	1.77861
n_D	0.58929	1.78446
n_d	0.58756	1.78472
n_e	0.54607	1.79192
n_F	0.48613	1.80652
$n_{F'}$	0.47999	1.80841
$n_{\text{He-Cd}}$	0.44157	1.82275
n_g	0.435835	1.82534
n_h	0.404656	1.84239
n_i	0.365015	

Partial Dispersions	
n_C-n_t	0.020476
$n_C-n_{A'}$	0.009346
n_d-n_C	0.008758
n_e-n_C	0.015955
n_g-n_d	0.040621
n_g-n_F	0.018825
n_h-n_g	0.017044
n_i-n_g	
n_C-n_t	0.021836
$n_e-n_{C'}$	0.014595
$n_{F'-n_e}$	0.016493
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6702
$\theta_{C,A'}$	0.3059
$\theta_{d,C}$	0.2866
$\theta_{e,C}$	0.5222
$\theta_{g,d}$	1.3295
$\theta_{g,F}$	0.6161
$\theta_{h,g}$	0.5578
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7024
$\theta'_{e,C'}$	0.4695
$\theta'_{F',e}$	0.5305
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	569
Annealing Point AP (°C)	588
Transformation Temperature Tg (°C)	602
Yield Point At (°C)	633
Softening Point SP (°C)	686
Expansion Coefficients (-30~+70°C)	89
α (10 ⁻⁷ /°C) (+100~+300°C)	103
Thermal Conductivity k (W/m-K)	1.017

Coloring			
λ_{80}	43	λ_5	37
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.08
380	0.40
390	0.66
400	0.80
420	0.915
440	0.948
460	0.964
480	0.973
500	0.980
550	0.992
600	0.992
650	0.990
700	0.992
800	0.998
900	0.998
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.989
2000	0.982
2200	0.964
2400	0.942

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0030
$\Delta\theta_{C,A'}$	-0.0011
$\Delta\theta_{g,d}$	0.0181
$\Delta\theta_{g,F}$	0.0162
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	912
Rigidity Modulus G (10 ⁸ N/m ²)	363
Poisson's Ratio σ	0.255
Knoop Hardness Hk[Class]	550 6
Abrasion Aa	171
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.81

Constants of Dispersion Formula	
A ₁	1.72677471E+00
A ₂	3.24568628E-01
A ₃	2.65816809E+00
B ₁	1.29369958E-02
B ₂	6.18255245E-02
B ₃	2.21904637E+02

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.24
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	0.5	0.6	0.9	1.4	2.6	4.1
-20~0	-0.2	0.7	0.7	1.1	1.6	2.9	4.5
0~20	-0.1	0.8	0.9	1.3	1.9	3.2	4.9
20~40	0.0	1.0	1.1	1.5	2.1	3.5	5.3
40~60	0.0	1.1	1.2	1.7	2.3	3.8	5.7
60~80	0.1	1.3	1.4	1.9	2.5	4.1	6.1