

S-TIH10

Code(d) **728285**

Code(e) **734282**

Refractive Index n_d	1.72825 1.728250	Abbe Number v_d	28.5 28.46	Dispersion n_F-n_C	0.02559 0.025588
Refractive Index n_e	1.734286	Abbe Number v_e	28.23	Dispersion n_F-n_C'	0.026009

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.67934
n_{1970}	1.97009	1.68562
n_{1530}	1.52958	1.69286
n_{1129}	1.12864	1.70040
n_t	1.01398	1.70330
n_s	0.85211	1.70884
$n_{A'}$	0.76819	1.71292
n_r	0.70652	1.71683
n_C	0.65627	1.72086
$n_{C'}$	0.64385	1.72202
$n_{\text{He-Ne}}$	0.6328	1.72310
n_D	0.58929	1.72803
n_d	0.58756	1.72825
n_e	0.54607	1.73429
n_F	0.48613	1.74645
$n_{F'}$	0.47999	1.74802
$n_{\text{He-Cd}}$	0.44157	1.75987
n_g	0.435835	1.76200
n_h	0.404656	1.77595
n_i	0.365015	

Partial Dispersions	
n_C-n_t	0.017568
$n_C-n_{A'}$	0.007944
n_d-n_C	0.007385
n_e-n_C	0.013421
n_g-n_d	0.033752
n_g-n_F	0.015549
n_h-n_g	0.013943
n_i-n_g	
n_C-n_t	0.018718
$n_e-n_{C'}$	0.012271
$n_{F'-n_e}$	0.013738
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6866
$\theta_{C,A'}$	0.3105
$\theta_{d,C}$	0.2886
$\theta_{e,C}$	0.5245
$\theta_{g,d}$	1.3191
$\theta_{g,F}$	0.6077
$\theta_{h,g}$	0.5449
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7197
$\theta'_{e,C'}$	0.4718
$\theta'_{F',e}$	0.5282
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	569
Annealing Point AP (°C)	596
Transformation Temperature Tg (°C)	617
Yield Point At (°C)	642
Softening Point SP (°C)	703
Expansion Coefficients (-30~+70°C)	80
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	97
Thermal Conductivity k (W/m-K)	1.043

Coloring			
λ_{80}	41	λ_5	37
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.09
380	0.41
390	0.67
400	0.81
420	0.931
440	0.963
460	0.975
480	0.982
500	0.987
550	0.994
600	0.995
650	0.993
700	0.994
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.994
1600	0.993
1800	0.985
2000	0.977
2200	0.947
2400	0.929

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0064
$\Delta\theta_{C,A'}$	0.0002
$\Delta\theta_{g,d}$	0.0135
$\Delta\theta_{g,F}$	0.0123
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	1024
Rigidity Modulus G (10^8N/m^2)	412
Poisson's Ratio σ	0.243
Knoop Hardness Hk[Class]	570 6
Abrasion Aa	133
Photoelastic Constant β (nm/cm/ 10^5Pa)	2.88

Constants of Dispersion Formula	
A_1	1.61549392E+00
A_2	2.62433239E-01
A_3	2.09426189E+00
B_1	1.19830897E-02
B_2	5.96510240E-02
B_3	1.81657554E+02

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.06
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~20	1.1	2.0	2.1	2.3	2.8	3.8	5.0
-20~ 0	1.3	2.1	2.2	2.5	3.0	4.0	5.3
0~20	1.4	2.3	2.3	2.7	3.1	4.3	5.7
20~40	1.5	2.4	2.5	2.8	3.3	4.5	6.0
40~60	1.5	2.5	2.6	3.0	3.5	4.8	6.3
60~80	1.5	2.6	2.7	3.1	3.7	5.0	6.6