

S-TIH23

Code(d) **785263**

Code(e) **792261**

Refractive Index n_d	1.78470 1.784696	Abbe Number v_d	26.3 26.29	Dispersion n_F-n_C	0.02984 0.029847
Refractive Index n_e	1.791730	Abbe Number v_e	26.08	Dispersion $n_F'-n_C'$	0.030359

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.73102
n_{1970}	1.97009	1.73732
n_{1530}	1.52958	1.74475
n_{1129}	1.12864	1.75284
n_t	1.01398	1.75605
n_s	0.85211	1.76230
$n_{A'}$	0.76819	1.76697
n_r	0.70652	1.77147
n_C	0.65627	1.77613
$n_{C'}$	0.64385	1.77746
$n_{\text{He-Ne}}$	0.6328	1.77871
n_D	0.58929	1.78444
n_d	0.58756	1.78470
n_e	0.54607	1.79173
n_F	0.48613	1.80597
$n_{F'}$	0.47999	1.80782
$n_{\text{He-Cd}}$	0.44157	1.82176
n_g	0.435835	1.82428
n_h	0.404656	1.84081
n_i	0.365015	

Partial Dispersions	
n_C-n_t	0.020074
$n_C-n_{A'}$	0.009156
n_d-n_C	0.008571
n_e-n_C	0.015605
n_g-n_d	0.039588
n_g-n_F	0.018312
n_h-n_g	0.016524
n_i-n_g	
n_C-n_t	0.021407
$n_e-n_{C'}$	0.014272
$n_{F'-n_e}$	0.016087
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6726
$\theta_{C,A'}$	0.3068
$\theta_{d,C}$	0.2872
$\theta_{e,C}$	0.5228
$\theta_{g,d}$	1.3264
$\theta_{g,F}$	0.6135
$\theta_{h,g}$	0.5536
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7051
$\theta'_{e,C'}$	0.4701
$\theta'_{F',e}$	0.5299
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	561
Annealing Point AP (°C)	586
Transformation Temperature Tg (°C)	604
Yield Point At (°C)	635
Softening Point SP (°C)	684
Expansion Coefficients (-30~+70°C)	88
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	106
Thermal Conductivity k (W/m-K)	0.992

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	0.12
380	0.44
390	0.67
400	0.80
420	0.906
440	0.947
460	0.962
480	0.972
500	0.979
550	0.992
600	0.992
650	0.991
700	0.993
800	0.998
900	0.998
1000	0.998
1200	0.999
1400	0.997
1600	0.996
1800	0.988
2000	0.981
2200	0.962
2400	0.937

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0026
$\Delta\theta_{C,A'}$	-0.0009
$\Delta\theta_{g,d}$	0.0163
$\Delta\theta_{g,F}$	0.0146
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	922
Rigidity Modulus G (10^8N/m^2)	366
Poisson's Ratio σ	0.260
Knoop Hardness Hk[Class]	540 5
Abrasion Aa	180
Photoelastic Constant β (nm/cm/ 10^5Pa)	2.69

Constants of Dispersion Formula	
A_1	1.73986485E+00
A_2	3.13894918E-01
A_3	2.31093206E+00
B_1	1.29441300E-02
B_2	6.12116868E-02
B_3	1.97420482E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
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	3.30
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	-0.3	0.5	0.6	1.0	1.4	2.6	4.1
-20~0	-0.2	0.7	0.7	1.1	1.6	2.9	4.4
0~20	-0.1	0.8	0.9	1.3	1.8	3.1	4.8
20~40	-0.1	0.9	1.0	1.4	2.0	3.4	5.1
40~60	0.0	1.0	1.1	1.5	2.2	3.7	5.5
60~80	0.1	1.2	1.2	1.7	2.3	3.9	5.8