

S-TIH 4

Code(d) **755275**

Code(e) **762273**

Refractive Index n_d	Abbe Number v_d	Dispersion $n_F - n_C$
1.75520 1.755199	27.5 27.51	0.02745 0.027450
Refractive Index n_e	Abbe Number v_e	Dispersion $n_F' - n_C'$
1.761671	27.29	0.027911

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.70430
n_{1970}	1.97009	1.71054
n_{1530}	1.52958	1.71784
n_{1129}	1.12864	1.72561
n_t	1.01398	1.72864
n_s	0.85211	1.73448
$n_{A'}$	0.76819	1.73882
n_r	0.70652	1.74299
n_C	0.65627	1.74730
$n_{C'}$	0.64385	1.74853
$n_{\text{He-Ne}}$	0.6328	1.74968
n_D	0.58929	1.75496
n_d	0.58756	1.75520
n_e	0.54607	1.76167
n_F	0.48613	1.77475
$n_{F'}$	0.47999	1.77644
$n_{\text{He-Cd}}$	0.44157	1.78920
n_g	0.435835	1.79150
n_h	0.404656	1.80656
n_i	0.365015	

Partial Dispersions	
$n_C - n_t$	0.018659
$n_C - n_{A'}$	0.008473
$n_d - n_C$	0.007904
$n_e - n_C$	0.014376
$n_g - n_d$	0.036298
$n_g - n_F$	0.016752
$n_h - n_g$	0.015059
$n_i - n_g$	
$n_C - n_t$	0.019889
$n_e - n_{C'}$	0.013146
$n_{F'} - n_e$	0.014765
$n_i - n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6797
$\theta_{C,A'}$	0.3087
$\theta_{d,C}$	0.2879
$\theta_{e,C}$	0.5237
$\theta_{g,d}$	1.3223
$\theta_{g,F}$	0.6103
$\theta_{h,g}$	0.5486
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7126
$\theta'_{e,C'}$	0.4710
$\theta'_{F',e}$	0.5290
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	565
Annealing Point AP (°C)	591
Transformation Temperature Tg (°C)	613
Yield Point At (°C)	640
Softening Point SP (°C)	694
Expansion Coefficients (-30~+70°C)	85
α (10 ⁻⁷ /°C) (+100~+300°C)	100
Thermal Conductivity k (W/m·K)	1.01

Coloring			
λ_{80}	42	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	0.45
390	0.70
400	0.82
420	0.929
440	0.962
460	0.973
480	0.980
500	0.986
550	0.995
600	0.994
650	0.993
700	0.995
800	0.999
900	0.999
1000	0.999
1200	0.997
1400	0.995
1600	0.994
1800	0.987
2000	0.981
2200	0.961
2400	0.942

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0040
$\Delta\theta_{C,A'}$	-0.0005
$\Delta\theta_{g,d}$	0.0147
$\Delta\theta_{g,F}$	0.0133
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	919
Rigidity Modulus G (10 ⁸ N/m ²)	367
Poisson's Ratio σ	0.254
Knoop Hardness Hk[Class]	570 6
Abrasion Aa	168
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.76

Constants of Dispersion Formula	
A ₁	1.66755531E+00
A ₂	2.94411865E-01
A ₃	2.49422119E+00
B ₁	1.22052137E-02
B ₂	5.97775329E-02
B ₃	2.14869618E+02

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.15
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	0.5	1.2	1.2	1.6	2.0	3.1	4.4
-20~0	0.6	1.3	1.4	1.8	2.2	3.3	4.7
0~20	0.6	1.4	1.5	1.9	2.4	3.6	5.1
20~40	0.7	1.6	1.7	2.1	2.6	3.9	5.4
40~60	0.7	1.7	1.8	2.3	2.7	4.1	5.8
60~80	0.7	1.8	1.9	2.4	2.9	4.4	6.1