

S-TIH53WN

Code(d) **847239**

Code(e) **855237**

Refractive Index n_d	1.84666	Abbe Number ν_d	23.86	Dispersion n_F-n_C	0.035480
	1.846660				
Refractive Index n_e	1.855009	Abbe Number ν_e	23.67	Dispersion n_F-n_C'	0.036118

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.78533
n_{1970}	1.97009	1.79214
n_{1530}	1.52958	1.80028
n_{1129}	1.12864	1.80939
n_t	1.01398	1.81307
n_s	0.85211	1.82031
$n_{A'}$	0.76819	1.82576
n_r	0.70652	1.83104
n_C	0.65627	1.83653
$n_{C'}$	0.64385	1.83810
$n_{\text{He-Ne}}$	0.6328	1.83958
n_D	0.58929	1.84635
n_d	0.58756	1.84666
n_e	0.54607	1.85501
n_F	0.48613	1.87201
$n_{F'}$	0.47999	1.87422
$n_{\text{He-Cd}}$	0.44157	1.89099
n_g	0.435835	1.89403
n_h	0.404656	1.91409
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.87308069E+00
A_2	3.76460262E-01
A_3	2.37441773E+00
B_1	1.41364636E-02
B_2	6.36374877E-02
B_3	1.84898700E+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

Mechanical Properties	
Young's Modulus E (GPa)	96.0
Rigidity Modulus G (GPa)	37.9
Poisson's Ratio σ	0.266
Knoop Hardness Hk(Class)	550 6
Abrasion Aa	188

Partial Dispersions	
n_C-n_t	0.023459
$n_C-n_{A'}$	0.010763
n_d-n_C	0.010133
n_e-n_C	0.018482
n_g-n_d	0.047374
n_g-n_F	0.022027
n_h-n_g	0.020053
n_i-n_g	
n_C-n_t	0.025031
$n_e-n_{C'}$	0.016910
$n_{F'}-n_e$	0.019208
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6612
$\theta_{C,A'}$	0.3034
$\theta_{d,C}$	0.2856
$\theta_{e,C}$	0.5209
$\theta_{g,d}$	1.3352
$\theta_{g,F}$	0.6208
$\theta_{h,g}$	0.5652
$\theta_{i,g}$	
$\theta'_{C,t}$	0.6930
$\theta'_{e,C}$	0.4682
$\theta'_{F,e}$	0.5318
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0026
$\Delta \theta_{C,A'}$	-0.0014
$\Delta \theta_{g,d}$	0.0201
$\Delta \theta_{g,F}$	0.0179
$\Delta \theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	576
Annealing Point AP (°C)	596
Transformation Temperature Tg (°C)	624
Yield Point At (°C)	658
Softening Point SP (°C)	692
Expansion Coefficients (-30~+70°C)	88
α (10 ⁻⁷ K ⁻¹) (+100~+300°C)	104
Thermal Conductivity λ W/(m·K)	1.00

Coloring			
λ_{80}		λ_5	368
λ_{70}	404		

Internal transmission			
$\lambda_{0.80}$	398	$\lambda_{0.05}$	368

CCI		
B	G	R
0.00	3.49	3.70

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.11
380	0.45
390	0.71
400	0.83
420	0.918
440	0.954
460	0.971
480	0.980
500	0.986
550	0.995
600	0.999
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.999
1600	0.999
1800	0.994
2000	0.985
2200	0.961
2400	0.925

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative (10 ⁻⁶ K ⁻¹)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-0.8	0.4	0.4	0.9	1.4	2.8	4.5
-20~ 0	-0.8	0.5	0.6	1.0	1.6	3.1	5.0
0~20	-0.7	0.6	0.7	1.2	1.8	3.4	5.4
20~40	-0.7	0.7	0.8	1.3	2.0	3.7	5.8
40~60	-0.6	0.9	1.0	1.5	2.2	4.0	6.2
60~80	-0.6	1.0	1.1	1.6	2.4	4.3	6.6

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.81
Specific Gravity d	3.54
Remarks	

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.