

S-TIH18

Code(d) **722292**

Code(e) **727290**

Refractive Index n_d	1.72151 1.721507	Abbe Number ν_d	29.23	Dispersion n_F-n_C	0.024683
Refractive Index n_e	1.727331	Abbe Number ν_e	29.00	Dispersion $n_F-n_{C'}$	0.025081

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.67384
n_{1970}	1.97009	1.68002
n_{1530}	1.52958	1.68715
n_{1129}	1.12864	1.69453
n_t	1.01398	1.69734
n_s	0.85211	1.70272
$n_{A'}$	0.76819	1.70668
n_r	0.70652	1.71047
n_C	0.65627	1.71437
$n_{C'}$	0.64385	1.71548
$n_{\text{He-Ne}}$	0.6328	1.71653
n_D	0.58929	1.72129
n_d	0.58756	1.72151
n_e	0.54607	1.72733
n_F	0.48613	1.73905
$n_{F'}$	0.47999	1.74057
$n_{\text{He-Cd}}$	0.44157	1.75195
n_g	0.435835	1.75399
n_h	0.404656	1.76735
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.59921608E+00
A_2	2.59532164E-01
A_3	2.12454543E+00
B_1	1.16469304E-02
B_2	5.84824883E-02
B_3	1.86927779E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
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

Mechanical Properties	
Young's Modulus E (GPa)	89.1
Rigidity Modulus G (GPa)	35.7
Poisson's Ratio σ	0.248
Knoop Hardness Hk(Class)	560 6
Abrasion Aa	160

Partial Dispersions	
n_C-n_t	0.017028
$n_C-n_{A'}$	0.007687
n_d-n_C	0.007136
n_e-n_C	0.012960
n_g-n_d	0.032488
n_g-n_F	0.014941
n_h-n_g	0.013358
n_i-n_g	
n_C-n_t	0.018141
$n_e-n_{C'}$	0.011847
$n_{F'}-n_e$	0.013234
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6899
$\theta_{C,A'}$	0.3114
$\theta_{d,C}$	0.2891
$\theta_{e,C}$	0.5251
$\theta_{g,d}$	1.3162
$\theta_{g,F}$	0.6053
$\theta_{h,g}$	0.5412
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7233
$\theta'_{e,C'}$	0.4723
$\theta'_{F',e}$	0.5277
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0061
$\Delta\theta_{C,A'}$	0.0001
$\Delta\theta_{g,d}$	0.0122
$\Delta\theta_{g,F}$	0.0111
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	570
Annealing Point AP (°C)	596
Transformation Temperature Tg (°C)	616
Yield Point At (°C)	644
Softening Point SP (°C)	703
Expansion Coefficients (-30~+70°C)	83
α (10^{-7}K^{-1}) (+100~+300°C)	98
Thermal Conductivity λ W/(m·K)	1.03

Coloring			
λ_{80}	410	λ_5	360
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	393	$\lambda_{0.05}$	366

CCI		
B	G	R
0.00	2.43	2.44

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.18
380	0.54
390	0.77
400	0.87
420	0.951
440	0.971
460	0.979
480	0.984
500	0.988
550	0.995
600	0.995
650	0.993
700	0.995
800	0.998
900	0.999
1000	0.999
1200	0.999
1400	0.996
1600	0.995
1800	0.986
2000	0.978
2200	0.948
2400	0.928

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	1.1	1.8	1.8	2.2	2.5	3.5	4.7
-20~ 0	1.2	1.9	2.0	2.3	2.7	3.8	5.0
0~20	1.3	2.0	2.2	2.5	2.9	4.0	5.3
20~40	1.4	2.2	2.3	2.7	3.1	4.3	5.7
40~60	1.5	2.3	2.5	2.8	3.3	4.5	6.0
60~80	1.6	2.4	2.6	3.0	3.5	4.8	6.3

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.87
Specific Gravity d	3.07
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.