S-TIH 6

Code(d) **805254**
Code(e) **813252**

Refractive Index	n_d	**1.80518** 1.805181	Abbe Number	ν_d	**25.42**	Dispersion	n_F-n_C **0.031669**
Refractive Index	n_e	1.812641	Abbe Number	ν_e	25.22	Dispersion	$n_{F'}$-$n_{C'}$ 0.032223

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.74917
n_{1970}	1.97009	1.75558
n_{1530}	1.52958	1.76321
n_{1129}	1.12864	1.77160
n_t	1.01398	1.77495
n_s	0.85211	1.78151
$n_{A'}$	0.76819	1.78643
n_r	0.70652	1.79118
n_C	0.65627	1.79611
$n_{C'}$	0.64385	1.79752
$n_{He\text{-}Ne}$	0.6328	1.79885
n_D	0.58929	1.80491
n_d	0.58756	1.80518
n_e	0.54607	1.81264
n_F	0.48613	1.82777
$n_{F'}$	0.47999	1.82974
$n_{He\text{-}Cd}$	0.44157	1.84460
n_g	0.435835	1.84729
n_h	0.404656	1.86494
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.77227611E+00
A_2	3.45691250E-01
A_3	2.40788501E+00
B_1	1.31182633E-02
B_2	6.14479619E-02
B_3	2.00753254E+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)	93.1	
Rigidity Modulus G (GPa)	36.9	
Poisson's Ratio σ	0.261	
Knoop Hardness Hk[Class]	540	5
Abrasion Aa	196	

Partial Dispersions	
n_C-n_t	0.021155
n_C-$n_{A'}$	0.009673
n_d-n_C	0.009075
n_e-n_C	0.016535
n_g-n_d	0.042105
n_g-n_F	0.019511
n_h-n_g	0.017653
n_i-n_g	
n_C-n_t	0.022564
n_e-$n_{C'}$	0.015126
n_F-n_e	0.017097
n_i-$n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6680
$\theta_{C,A'}$	0.3054
$\theta_{d,C}$	0.2866
$\theta_{e,C}$	0.5221
$\theta_{g,d}$	1.3295
$\theta_{g,F}$	0.6161
$\theta_{h,g}$	0.5574
$\theta_{i,g}$	
$\theta'_{C',t}$	0.7002
$\theta'_{e,C'}$	0.4694
$\theta'_{F',e}$	0.5306
$\theta'_{i,F'}$	

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0021
$\Delta\theta_{C,A'}$	-0.0012
$\Delta\theta_{g,d}$	0.0176
$\Delta\theta_{g,F}$	0.0158
$\Delta\theta_{i,g}$	

Thermal Properties		
Strain Point StP (℃)		571
Annealing Point AP (℃)		587
Transformation Temperature Tg (℃)		604
Yield Point At (℃)		630
Softening Point SP (℃)		690
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	89
	(+100~+300℃)	107
Thermal Conductivity λ W/(m·K)		1.01

Coloring			
λ_{80}	440	λ_5	365
λ_{70}			

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

CCI		
B	G	R
0.00	3.44	3.56

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.12
380	0.48
390	0.70
400	0.82
420	0.919
440	0.955
460	0.970
480	0.978
500	0.984
550	0.993
600	0.995
650	0.994
700	0.996
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.997
1600	0.995
1800	0.986
2000	0.978
2200	0.958
2400	0.928

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}K^{-1}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-0.6	0.3	0.4	0.7	1.3	2.6	4.1
-20~ 0	-0.6	0.4	0.5	0.9	1.5	2.8	4.4
0~20	-0.5	0.5	0.6	1.0	1.6	3.0	4.8
20~40	-0.4	0.7	0.8	1.2	1.8	3.3	5.1
40~60	-0.4	0.8	0.9	1.3	2.0	3.5	5.5
60~80	-0.3	0.9	1.0	1.5	2.1	3.8	5.8

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	2.81
Specific Gravity d	3.37
Remarks	

OHARA 23-05

※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.