S-TIH 1

Code(d) **717295**
Code(e) **723293**

Refractive Index	n_d	**1.71736** 1.717362	Abbe Number	ν_d	**29.52**	Dispersion	n_F-n_C **0.024303**
Refractive Index	n_e	1.723098	Abbe Number	ν_e	29.28	Dispersion	$n_{F'}$-$n_{C'}$ 0.024694

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.67018
n_{1970}	1.97009	1.67636
n_{1530}	1.52958	1.68344
n_{1129}	1.12864	1.69075
n_t	1.01398	1.69353
n_s	0.85211	1.69885
$n_{A'}$	0.76819	1.70275
n_r	0.70652	1.70649
n_C	0.65627	1.71033
$n_{C'}$	0.64385	1.71143
n_{He-Ne}	0.6328	1.71246
n_D	0.58929	1.71715
n_d	0.58756	1.71736
n_e	0.54607	1.72310
n_F	0.48613	1.73463
$n_{F'}$	0.47999	1.73612
n_{He-Cd}	0.44157	1.74732
n_g	0.435835	1.74933
n_h	0.404656	1.76247
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.60326759E+00
A_2	2.42980935E-01
A_3	1.81313592E+00
B_1	1.18019139E-02
B_2	5.91363658E-02
B_3	1.61218747E+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)	88.4	
Rigidity Modulus G (GPa)	35.5	
Poisson's Ratio σ	0.247	
Knoop Hardness Hk[Class]	550	6
Abrasion Aa	157	

Partial Dispersions	
n_C-n_t	0.016798
n_C-$n_{A'}$	0.007579
n_d-n_C	0.007030
n_e-n_C	0.012766
n_g-n_d	0.031970
n_g-n_F	0.014697
n_h-n_g	0.013136
n_i-n_g	
n_C-n_t	0.017894
n_e-$n_{C'}$	0.011670
n_F-n_e	0.013024
n_i-$n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6912
$\theta_{C,A'}$	0.3119
$\theta_{d,C}$	0.2893
$\theta_{e,C}$	0.5253
$\theta_{g,d}$	1.3155
$\theta_{g,F}$	0.6047
$\theta_{h,g}$	0.5405
$\theta_{i,g}$	
$\theta'_{C',t}$	0.7246
$\theta'_{e,C'}$	0.4726
$\theta'_{F',e}$	0.5274
$\theta'_{i,F'}$	

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0060
$\Delta\theta_{C,A'}$	0.0003
$\Delta\theta_{g,d}$	0.0121
$\Delta\theta_{g,F}$	0.0110
$\Delta\theta_{i,g}$	

Thermal Properties		
Strain Point StP (℃)		569
Annealing Point AP (℃)		597
Transformation Temperature Tg (℃)		622
Yield Point At (℃)		653
Softening Point SP (℃)		703
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	82
	(+100~+300℃)	96
Thermal Conductivity λ W/(m·K)		1.02

Coloring			
λ_{80}	405	λ_5	360
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	392	$\lambda_{0.05}$	366

CCI		
B	G	R
0.00	2.31	2.29

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.19
380	0.56
390	0.78
400	0.88
420	0.952
440	0.971
460	0.978
480	0.982
500	0.987
550	0.994
600	0.994
650	0.991
700	0.993
800	0.998
900	0.999
1000	0.998
1200	0.998
1400	0.996
1600	0.995
1800	0.988
2000	0.981
2200	0.957
2400	0.941

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	1.3	2.1	2.2	2.5	2.9	3.8	5.0
-20~ 0	1.2	2.1	2.2	2.5	2.9	4.0	5.2
0~20	1.2	2.2	2.3	2.6	3.1	4.2	5.4
20~40	1.3	2.3	2.3	2.7	3.2	4.3	5.7
40~60	1.3	2.4	2.5	2.8	3.3	4.5	5.9
60~80	1.5	2.6	2.6	3.0	3.5	4.8	6.3

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	2.85
Specific Gravity d	3.06
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.