S-TIL25

Code(d) **581407**
Code(e) **585405**

Refractive Index	n_d	**1.58144**	Abbe Number	ν_d	**40.75**	Dispersion	n_F-n_C **0.014270**
		1.581439					
Refractive Index	n_e	1.584822	Abbe Number	ν_e	40.47	Dispersion	$n_{F'}$-$n_{C'}$ 0.014451

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.54741
n_{1970}	1.97009	1.55292
n_{1530}	1.52958	1.55895
n_{1129}	1.12864	1.56456
n_t	1.01398	1.56651
n_s	0.85211	1.57005
$n_{A'}$	0.76819	1.57254
n_r	0.70652	1.57486
n_C	0.65627	1.57722
$n_{C'}$	0.64385	1.57788
n_{He-Ne}	0.6328	1.57850
n_D	0.58929	1.58131
n_d	0.58756	1.58144
n_e	0.54607	1.58482
n_F	0.48613	1.59149
$n_{F'}$	0.47999	1.59233
n_{He-Cd}	0.44157	1.59861
n_g	0.435835	1.59973
n_h	0.404656	1.60687
n_i	0.365015	1.61979

Constants of Dispersion Formula	
A_1	1.32122534E+00
A_2	1.23824976E-01
A_3	1.43685254E+00
B_1	9.52091436E-03
B_2	5.16062665E-02
B_3	1.49064883E+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)	75.3	
Rigidity Modulus G (GPa)	30.9	
Poisson's Ratio σ	0.220	
Knoop Hardness Hk[Class]	540	5
Abrasion Aa	117	

Partial Dispersions	
n_C-n_t	0.010703
n_C-$n_{A'}$	0.004679
n_d-n_C	0.004223
n_e-n_C	0.007606
n_g-n_d	0.018287
n_g-n_F	0.008240
n_h-n_g	0.007140
n_i-n_g	0.020066
n_C-n_t	0.011368
n_e-$n_{C'}$	0.006941
$n_{F'}$-n_e	0.007510
n_i-$n_{F'}$	0.027460

Relative Partial Dispersions	
$\theta_{C,t}$	0.7500
$\theta_{C,A'}$	0.3279
$\theta_{d,C}$	0.2959
$\theta_{e,C}$	0.5330
$\theta_{g,d}$	1.2815
$\theta_{g,F}$	0.5774
$\theta_{h,g}$	0.5004
$\theta_{i,g}$	1.4062
$\theta'_{C',t}$	0.7867
$\theta'_{e,C'}$	0.4803
$\theta'_{F',e}$	0.5197
$\theta'_{i,F'}$	1.9002

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0121
$\Delta\theta_{C,A'}$	0.0027
$\Delta\theta_{g,d}$	0.0014
$\Delta\theta_{g,F}$	0.0019
$\Delta\theta_{i,g}$	0.0224

Thermal Properties		
Strain Point StP (℃)		536
Annealing Point AP (℃)		564
Transformation Temperature Tg (℃)		588
Yield Point At (℃)		630
Softening Point SP (℃)		715
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	74
	(+100~+300℃)	88
Thermal Conductivity λ W/(m·K)		1.05

Coloring			
λ_{80}	380	λ_5	350
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	378	$\lambda_{0.05}$	351

CCI		
B	G	R
0.00	0.73	0.73

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.01
360	0.28
370	0.65
380	0.85
390	0.929
400	0.964
420	0.986
440	0.991
460	0.993
480	0.994
500	0.995
550	0.998
600	0.998
650	0.997
700	0.998
800	0.999
900	0.999
1000	0.998
1200	0.998
1400	0.994
1600	0.994
1800	0.981
2000	0.963
2200	0.911
2400	0.89

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	2.4	3.0	3.0	3.2	3.4	4.0	4.6
-20~ 0	2.5	3.0	3.1	3.3	3.5	4.1	4.7
0~20	2.6	3.1	3.2	3.4	3.6	4.2	4.9
20~40	2.7	3.2	3.3	3.5	3.7	4.4	5.1
40~60	2.7	3.3	3.3	3.5	3.8	4.5	5.2
60~80	2.8	3.4	3.4	3.6	3.9	4.6	5.4

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	2.84
Specific Gravity d	2.59
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.