S-TIL26

Code(d) **567428**
Code(e) **570425**

Refractive Index n_d	**1.567 32** 1.567 322	Abbe Number ν_d	**42.82**	Dispersion $n_F - n_C$	**0.013 250**
Refractive Index n_e	1.570 466	Abbe Number ν_e	42.54	Dispersion $n_{F'} - n_{C'}$	0.013 411

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.534 93
n_{1970}	1.970 09	1.540 28
n_{1530}	1.529 58	1.546 11
n_{1129}	1.128 64	1.551 48
n_t	1.013 98	1.553 33
n_s	0.852 11	1.556 67
$n_{A'}$	0.768 19	1.559 01
n_r	0.706 52	1.561 19
n_C	0.656 27	1.563 39
$n_{C'}$	0.643 85	1.564 01
$n_{He\text{-}Ne}$	0.632 8	1.564 59
n_D	0.589 29	1.567 21
n_d	0.587 56	1.567 32
n_e	0.546 07	1.570 47
n_F	0.486 13	1.576 64
$n_{F'}$	0.479 99	1.577 42
$n_{He\text{-}Cd}$	0.441 57	1.583 21
n_g	0.435 835	1.584 23
n_h	0.404 656	1.590 77
n_i	0.365 015	1.602 56

Constants of Dispersion Formula	
A_1	1.310 664 88E+00
A_2	9.419 030 94E-02
A_3	1.232 926 44E+00
B_1	9.688 978 12E-03
B_2	5.277 631 06E-02
B_3	1.332 964 22E+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)	73.9	
Rigidity Modulus G (GPa)	30.2	
Poisson's Ratio σ	0.222	
Knoop Hardness Hk[Class]	500	5
Abrasion Aa	120	

Partial Dispersions	
$n_C - n_t$	0.010 055
$n_C - n_{A'}$	0.004 379
$n_d - n_C$	0.003 936
$n_e - n_C$	0.007 080
$n_g - n_d$	0.016 907
$n_g - n_F$	0.007 593
$n_h - n_g$	0.006 546
$n_i - n_g$	0.018 329
$n_{C'} - n_t$	0.010 676
$n_e - n_{C'}$	0.006 459
$n_{F'} - n_e$	0.006 952
$n_i - n_{F'}$	0.025 140

Relative Partial Dispersions	
$\theta_{C,t}$	0.758 9
$\theta_{C,A'}$	0.330 5
$\theta_{d,C}$	0.297 1
$\theta_{e,C}$	0.534 3
$\theta_{g,d}$	1.276 0
$\theta_{g,F}$	0.573 1
$\theta_{h,g}$	0.494 0
$\theta_{i,g}$	1.383 3
$\theta'_{C',t}$	0.796 1
$\theta'_{e,C'}$	0.481 6
$\theta'_{F',e}$	0.518 4
$\theta'_{i,F'}$	1.874 6

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.011 3
$\Delta\theta_{C,A'}$	0.002 7
$\Delta\theta_{g,d}$	0.000 2
$\Delta\theta_{g,F}$	0.000 9
$\Delta\theta_{i,g}$	0.016 8

Coloring			
λ_{80}	380	λ_5	345
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	374	$\lambda_{0.05}$	349

CCI		
B	G	R
0.00	0.56	0.54

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	
350	0.07
360	0.44
370	0.74
380	0.88
390	0.945
400	0.971
420	0.989
440	0.993
460	0.995
480	0.995
500	0.997
550	0.998
600	0.998
650	0.997
700	0.998
800	0.999
900	0.998
1 000	0.998
1 200	0.998
1 400	0.995
1 600	0.993
1 800	0.977
2 000	0.950
2 200	0.89
2 400	0.86

Thermal Properties		
Strain Point StP (°C)		495
Annealing Point AP (°C)		533
Transformation Temperature Tg (°C)		556
Yield Point At (°C)		616
Softening Point SP (°C)		694
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	78
	(100 °C ~ 300 °C)	95
Thermal Conductivity λ (W/(m·K))		1.05

Linear coefficient of thermal expansion	
Temperature range (°C)	α_l (10^{-7} K^{-1})
-100 ~ -90	62
-90 ~ -80	63
-80 ~ -70	65
-70 ~ -60	67
-60 ~ -50	68
-50 ~ -40	70
-40 ~ -30	71
-30 ~ -20	73
-20 ~ -10	74
-10 ~ 0	75
0 ~ 10	77
10 ~ 20	78
20 ~ 30	79
30 ~ 40	80
40 ~ 50	82
50 ~ 60	83
60 ~ 70	84
70 ~ 80	85
80 ~ 90	86
90 ~ 100	87
100 ~ 110	88
110 ~ 120	89
120 ~ 130	90
130 ~ 140	91
140 ~ 150	91
150 ~ 160	92
160 ~ 170	93
170 ~ 180	94
180 ~ 190	94
190 ~ 200	95
200 ~ 210	95
210 ~ 220	96
220 ~ 230	96
230 ~ 240	97
240 ~ 250	97
250 ~ 260	98
260 ~ 270	98
270 ~ 280	98
280 ~ 290	99
290 ~ 300	99

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	2.75
Specific Gravity *d*	2.57
Remarks	

Temperature Coefficients of Refractive Index												
Range of Temperature (°C)	$\Delta n_{rel} / \Delta T$ (10^{-6} K^{-1})											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	1.8	1.9	2.2	2.3	2.3	2.5	2.7	3.1	3.1	3.6	4.2	5.4
-60 ~ -40	1.7	1.8	2.1	2.2	2.2	2.4	2.6	3.1	3.1	3.6	4.2	5.5
-40 ~ -20	1.6	1.8	2.1	2.2	2.2	2.4	2.6	3.1	3.2	3.7	4.3	5.6
-20 ~ 0	1.6	1.8	2.1	2.3	2.3	2.5	2.7	3.1	3.2	3.8	4.5	5.8
0 ~ 20	1.6	1.8	2.3	2.4	2.4	2.6	2.8	3.3	3.4	3.9	4.6	6.0
20 ~ 40	1.7	1.9	2.4	2.5	2.5	2.7	3.0	3.4	3.5	4.1	4.8	6.3
40 ~ 60	1.9	2.0	2.4	2.6	2.6	2.8	3.1	3.6	3.6	4.3	5.0	6.6
60 ~ 80	1.9	2.0	2.6	2.7	2.7	3.0	3.2	3.7	3.8	4.5	5.2	6.8
80 ~ 100	1.9	2.1	2.6	2.7	2.8	3.1	3.3	3.9	4.0	4.7	5.4	7.1
100 ~ 120	2.0	2.2	2.6	2.8	2.8	3.2	3.4	4.0	4.1	4.8	5.6	7.4
120 ~ 140	2.0	2.3	2.8	2.9	3.0	3.2	3.5	4.1	4.2	4.9	5.7	7.6
140 ~ 160	2.1	2.3	2.8	2.9	3.0	3.3	3.5	4.1	4.2	5.0	5.9	7.8
160 ~ 180	2.0	2.3	2.8	2.9	3.0	3.3	3.5	4.2	4.3	5.2	6.0	8.0

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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.