

S-TIL 6

Code(d) **532489**

Code(e) **534485**

Refractive Index n_d	1.53172	Abbe Number ν_d	48.84	Dispersion n_F-n_C	0.010887
	1.531717				
Refractive Index n_e	1.534304	Abbe Number ν_e	48.55	Dispersion n_F-n_C'	0.011006

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.50292
n_{1970}	1.97009	1.50797
n_{1530}	1.52958	1.51342
n_{1129}	1.12864	1.51829
n_t	1.01398	1.51993
n_s	0.85211	1.52280
$n_{A'}$	0.76819	1.52479
n_f	0.70652	1.52662
n_C	0.65627	1.52846
$n_{C'}$	0.64385	1.52897
$n_{\text{He-Ne}}$	0.6328	1.52946
n_D	0.58929	1.53162
n_d	0.58756	1.53172
n_e	0.54607	1.53430
n_F	0.48613	1.53934
$n_{F'}$	0.47999	1.53998
$n_{\text{He-Cd}}$	0.44157	1.54465
n_g	0.435835	1.54547
n_h	0.404656	1.55069
n_i	0.365015	1.55989

Constants of Dispersion Formula	
A_1	1.17701777E+00
A_2	1.27958030E-01
A_3	1.34740124E+00
B_1	7.71087686E-03
B_2	4.11325328E-02
B_3	1.54531692E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2~3
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	64.8
Rigidity Modulus G (GPa)	28.3
Poisson's Ratio σ	0.146
Knoop Hardness Hk(Class)	490 5
Abrasion Aa	121

Partial Dispersions	
n_C-n_t	0.008529
$n_C-n_{A'}$	0.003667
n_d-n_C	0.003261
n_e-n_C	0.005848
n_g-n_d	0.013756
n_g-n_F	0.006130
n_h-n_g	0.005216
n_i-n_g	0.014418
n_C-n_t	0.009045
$n_e-n_{C'}$	0.005332
$n_{F'}-n_e$	0.005674
$n_i-n_{F'}$	0.019913

Relative Partial Dispersions	
$\theta_{C,t}$	0.7834
$\theta_{C,A'}$	0.3368
$\theta_{d,C}$	0.2995
$\theta_{e,C}$	0.5372
$\theta_{g,d}$	1.2635
$\theta_{g,F}$	0.5631
$\theta_{h,g}$	0.4791
$\theta_{i,g}$	1.3243
$\theta'_{C,t}$	0.8218
$\theta'_{e,C}$	0.4845
$\theta'_{F',e}$	0.5155
$\theta'_{i,F'}$	1.8093

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0076
$\Delta \theta_{C,A'}$	0.0017
$\Delta \theta_{g,d}$	0.0002
$\Delta \theta_{g,F}$	0.0007
$\Delta \theta_{i,g}$	0.0082

Thermal Properties	
Strain Point StP (°C)	438
Annealing Point AP (°C)	468
Transformation Temperature Tg (°C)	479
Yield Point At (°C)	528
Softening Point SP (°C)	648
Expansion Coefficients (-30~+70°C)	82
α (10 ⁻⁷ K ⁻¹) (+100~+300°C)	96
Thermal Conductivity λ W/(m·K)	1.06

Coloring			
λ_{80}	365	λ_5	335
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	364	$\lambda_{0.05}$	339

CCI		
B	G	R
0.00	0.28	0.24

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.07
350	0.44
360	0.74
370	0.88
380	0.948
390	0.973
400	0.985
420	0.990
440	0.989
460	0.990
480	0.991
500	0.993
550	0.994
600	0.994
650	0.992
700	0.996
800	0.998
900	0.997
1000	0.997
1200	0.996
1400	0.995
1600	0.993
1800	0.977
2000	0.947
2200	0.89
2400	0.85

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	1.4	1.8	1.8	1.9	2.2	2.5	3.0
-20~ 0	1.4	1.8	1.8	1.9	2.2	2.6	3.0
0~20	1.4	1.8	1.8	1.9	2.2	2.6	3.1
20~40	1.4	1.8	1.8	1.9	2.2	2.7	3.1
40~60	1.4	1.8	1.9	1.9	2.2	2.7	3.2
60~80	1.4	1.8	1.9	1.9	2.2	2.7	3.3

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.81
Specific Gravity d	2.50
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.