

S-TIL25

Code(d) **581407**

Code(e) **585405**

Refractive Index n_d	1.58144 1.581439	Abbe Number v_d	40.7 40.75	Dispersion n_F-n_C	0.01427 0.014270
Refractive Index n_e	1.584822	Abbe Number v_e	40.47	Dispersion n_F-n_C	0.014451

Refractive Indices		
$\lambda(\mu\text{m})$		
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
$n_{\text{He-Ne}}$	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
$n_{\text{He-Cd}}$	0.44157	1.59861
n_g	0.435835	1.59973
n_h	0.404656	1.60687
n_i	0.365015	1.61979

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

Thermal Properties	
Strain Point StP (°C)	536
Annealing Point AP (°C)	564
Transformation Temperature Tg (°C)	588
Yield Point At (°C)	630
Softening Point SP (°C)	715
Expansion Coefficients (-30~+70°C)	74
α (10 ⁻⁷ /°C) (+100~+300°C)	88
Thermal Conductivity k (W/m-K)	1.054

Coloring			
λ_{80}	38	λ_5	35
λ_{70}			

Deviation of Relative Dispersions $\Delta\theta$ from "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

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	753
Rigidity Modulus G (10 ⁸ N/m ²)	309
Poisson's Ratio σ	0.220
Knoop Hardness Hk[Class]	540 5
Abrasion Aa	117
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.84

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
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

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)	2
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

Other Properties	
Bubble Quality Group B	B
Specific Gravity d	2.59
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 ⁻⁶ /°C)						
	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