

# S-TIM25

Code(d) **673321**

Code(e) **678318**

Refractive Index $n_d$	<b>1.67270</b> 1.672700	Abbe Number $v_d$	<b>32.1</b> 32.10	Dispersion $n_F-n_C$	<b>0.02095</b> 0.020957
Refractive Index $n_e$	1.677651	Abbe Number $v_e$	31.84	Dispersion $n_F-n_C'$	0.021280

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.62988
$n_{1970}$	1.97009	1.63583
$n_{1530}$	1.52958	1.64258
$n_{1129}$	1.12864	1.64933
$n_t$	1.01398	1.65184
$n_s$	0.85211	1.65656
$n_{A'}$	0.76819	1.66000
$n_r$	0.70652	1.66326
$n_C$	0.65627	1.66661
$n_{C'}$	0.64385	1.66756
$n_{\text{He-Ne}}$	0.6328	1.66846
$n_D$	0.58929	1.67252
$n_d$	0.58756	1.67270
$n_e$	0.54607	1.67765
$n_F$	0.48613	1.68756
$n_{F'}$	0.47999	1.68884
$n_{\text{He-Cd}}$	0.44157	1.69840
$n_g$	0.435835	1.70011
$n_h$	0.404656	1.71126
$n_i$	0.365015	

Partial Dispersions	
$n_C-n_t$	0.014766
$n_C-n_{A'}$	0.006611
$n_d-n_C$	0.006093
$n_e-n_C$	0.011044
$n_g-n_d$	0.027414
$n_g-n_F$	0.012550
$n_h-n_g$	0.011144
$n_i-n_g$	
$n_C-n_t$	0.015718
$n_e-n_{C'}$	0.010092
$n_{F'-n_e}$	0.011188
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7046
$\theta_{C,A'}$	0.3155
$\theta_{d,C}$	0.2907
$\theta_{e,C}$	0.5270
$\theta_{g,d}$	1.3081
$\theta_{g,F}$	0.5988
$\theta_{h,g}$	0.5318
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7386
$\theta'_{e,C'}$	0.4742
$\theta'_{F',e}$	0.5258
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	556
Annealing Point AP (°C)	585
Transformation Temperature Tg (°C)	608
Yield Point At (°C)	640
Softening Point SP (°C)	700
Expansion Coefficients (-30~+70°C)	79
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	95
Thermal Conductivity k (W/m·K)	1.046

Coloring			
$\lambda_{80}$	40	$\lambda_5$	36
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	0.01
370	0.24
380	0.60
390	0.80
400	0.89
420	0.957
440	0.974
460	0.981
480	0.986
500	0.989
550	0.995
600	0.996
650	0.995
700	0.996
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.995
1600	0.995
1800	0.987
2000	0.977
2200	0.944
2400	0.930

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0073
$\Delta\theta_{C,A'}$	0.0007
$\Delta\theta_{g,d}$	0.0101
$\Delta\theta_{g,F}$	0.0093
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E ( $10^8\text{N/m}^2$ )	841
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	340
Poisson's Ratio $\sigma$	0.236
Knoop Hardness Hk[Class]	570   6
Abrasion Aa	140
Photoelastic Constant $\beta$ (nm/cm/ $10^5\text{Pa}$ )	2.81

Constants of Dispersion Formula	
A <sub>1</sub>	1.50659233E+00
A <sub>2</sub>	2.04786135E-01
A <sub>3</sub>	1.92036668E+00
B <sub>1</sub>	1.09501562E-02
B <sub>2</sub>	5.74980285E-02
B <sub>3</sub>	1.78128535E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.2

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.91
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$dn/dt$ relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.5	2.2	2.3	2.6	2.9	3.7	4.7
-20~0	1.7	2.4	2.4	2.7	3.0	3.9	5.0
0~20	1.7	2.5	2.5	2.8	3.2	4.1	5.2
20~40	1.7	2.6	2.7	2.9	3.4	4.4	5.5
40~60	1.8	2.7	2.8	3.1	3.6	4.6	5.8
60~80	1.9	2.8	2.9	3.3	3.7	4.8	6.1