

# S-TIM22

Code(d) **648338**

Code(e) **652335**

Refractive Index $n_d$	<b>1.64769</b>	Abbe Number $v_d$	<b>33.8</b>	Dispersion $n_F-n_C$	<b>0.01916</b>
	1.647689		33.79		0.019167
Refractive Index $n_e$	1.652221	Abbe Number $v_e$	33.53	Dispersion $n_F-n_C'$	0.019451

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.60753
$n_{1970}$	1.97009	1.61325
$n_{1530}$	1.52958	1.61971
$n_{1129}$	1.12864	1.62609
$n_t$	1.01398	1.62844
$n_s$	0.85211	1.63283
$n_{A'}$	0.76819	1.63600
$n_r$	0.70652	1.63901
$n_C$	0.65627	1.64210
$n_{C'}$	0.64385	1.64297
$n_{\text{He-Ne}}$	0.6328	1.64379
$n_D$	0.58929	1.64752
$n_d$	0.58756	1.64769
$n_e$	0.54607	1.65222
$n_F$	0.48613	1.66126
$n_{F'}$	0.47999	1.66242
$n_{\text{He-Cd}}$	0.44157	1.67109
$n_g$	0.435835	1.67265
$n_h$	0.404656	1.68269
$n_i$	0.365015	

Partial Dispersions	
$n_C-n_t$	0.013658
$n_C-n_{A'}$	0.006092
$n_d-n_C$	0.005593
$n_e-n_C$	0.010125
$n_g-n_d$	0.024956
$n_g-n_F$	0.011382
$n_h-n_g$	0.010042
$n_i-n_g$	
$n_C-n_t$	0.014533
$n_e-n_{C'}$	0.009250
$n_{F'-n_e}$	0.010201
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7126
$\theta_{C,A'}$	0.3178
$\theta_{d,C}$	0.2918
$\theta_{e,C}$	0.5283
$\theta_{g,d}$	1.3020
$\theta_{g,F}$	0.5938
$\theta_{h,g}$	0.5239
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7472
$\theta'_{e,C'}$	0.4756
$\theta'_{F',e}$	0.5244
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	545
Annealing Point AP (°C)	572
Transformation Temperature Tg (°C)	593
Yield Point At (°C)	624
Softening Point SP (°C)	692
Expansion Coefficients (-30~+70°C)	83
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	98
Thermal Conductivity k (W/m·K)	1.024

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	0.04
370	0.37
380	0.70
390	0.86
400	0.928
420	0.970
440	0.981
460	0.986
480	0.989
500	0.991
550	0.996
600	0.996
650	0.995
700	0.996
800	0.998
900	0.997
1000	0.997
1200	0.996
1400	0.993
1600	0.991
1800	0.981
2000	0.970
2200	0.934
2400	0.916

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0074
$\Delta\theta_{C,A'}$	0.0010
$\Delta\theta_{g,d}$	0.0075
$\Delta\theta_{g,F}$	0.0070
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10 <sup>8</sup> N/m <sup>2</sup> )	798
Rigidity Modulus G (10 <sup>8</sup> N/m <sup>2</sup> )	322
Poisson's Ratio $\sigma$	0.238
Knoop Hardness Hk[Class]	560   6
Abrasion Aa	149
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	2.82

Constants of Dispersion Formula	
A <sub>1</sub>	1.44222294E+00
A <sub>2</sub>	1.94432265E-01
A <sub>3</sub>	1.74092482E+00
B <sub>1</sub>	1.04249404E-02
B <sub>2</sub>	5.50235257E-02
B <sub>3</sub>	1.69710769E+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	
Specific Gravity d	2.79
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 <sup>-6</sup> /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	0.8	1.5	1.6	1.8	2.1	2.9	3.7
-20~ 0	1.0	1.7	1.7	1.9	2.3	3.1	4.0
0~20	1.1	1.8	1.8	2.1	2.4	3.3	4.3
20~40	1.1	1.9	2.0	2.3	2.6	3.5	4.5
40~60	1.3	2.1	2.1	2.4	2.8	3.7	4.8
60~80	1.4	2.2	2.3	2.6	2.9	3.9	5.0