

# S-FTM16

Code(d) **593353**

Code(e) **597350**

Refractive Index $n_d$	1.59270	Abbe Number $\nu_d$	35.31	Dispersion $n_F-n_C$	0.016785
Refractive Index $n_e$	1.592701	Abbe Number $\nu_e$	35.03	Dispersion $n_F-n_C'$	0.017031

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.55603
$n_{1970}$	1.97009	1.56154
$n_{1530}$	1.52958	1.56767
$n_{1129}$	1.12864	1.57357
$n_t$	1.01398	1.57569
$n_s$	0.85211	1.57962
$n_{A'}$	0.76819	1.58243
$n_f$	0.70652	1.58508
$n_C$	0.65627	1.58779
$n_{C'}$	0.64385	1.58856
$n_{\text{He-Ne}}$	0.6328	1.58929
$n_D$	0.58929	1.59255
$n_d$	0.58756	1.59270
$n_e$	0.54607	1.59667
$n_F$	0.48613	1.60458
$n_{F'}$	0.47999	1.60559
$n_{\text{He-Cd}}$	0.44157	1.61318
$n_g$	0.435835	1.61454
$n_h$	0.404656	1.62334
$n_i$	0.365015	1.63974

Constants of Dispersion Formula	
$A_1$	1.32940907E+00
$A_2$	1.41512125E-01
$A_3$	1.44299068E+00
$B_1$	1.02377287E-02
$B_2$	5.78081956E-02
$B_3$	1.50597139E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
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	2.0

Mechanical Properties	
Young's Modulus E (GPa)	65.3
Rigidity Modulus G (GPa)	26.4
Poisson's Ratio $\sigma$	0.238
Knoop Hardness Hk(Class)	490   5
Abrasion Aa	181

Partial Dispersions	
$n_C-n_t$	0.012104
$n_C-n_{A'}$	0.005365
$n_d-n_C$	0.004906
$n_e-n_C$	0.008875
$n_g-n_d$	0.021838
$n_g-n_F$	0.009959
$n_h-n_g$	0.008800
$n_i-n_g$	0.025202
$n_C-n_t$	0.012872
$n_e-n_{C'}$	0.008107
$n_{F'}-n_e$	0.008924
$n_i-n_{F'}$	0.034147

Relative Partial Dispersions	
$\theta_{C,t}$	0.7211
$\theta_{C,A'}$	0.3196
$\theta_{d,C}$	0.2923
$\theta_{e,C}$	0.5287
$\theta_{g,d}$	1.3010
$\theta_{g,F}$	0.5933
$\theta_{h,g}$	0.5243
$\theta_{i,g}$	1.5015
$\theta'_{C,t}$	0.7558
$\theta'_{e,C}$	0.4760
$\theta'_{F,e}$	0.5240
$\theta'_{i,F'}$	2.0050

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0088
$\Delta \theta_{C,A'}$	0.0010
$\Delta \theta_{g,d}$	0.0096
$\Delta \theta_{g,F}$	0.0090
$\Delta \theta_{i,g}$	0.0721

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	501
Yield Point At (°C)	542
Softening Point SP (°C)	-
Expansion Coefficients (-30~+70°C)	90
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	100
Thermal Conductivity $\lambda$ W/(m·K)	0.947

Coloring			
$\lambda_{80}$	380	$\lambda_5$	350
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	370	$\lambda_{0.05}$	350

CCI		
B	G	R
0.00	0.43	0.42

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.04
360	0.43
370	0.81
380	0.934
390	0.973
400	0.984
420	0.989
440	0.990
460	0.991
480	0.992
500	0.994
550	0.997
600	0.997
650	0.996
700	0.996
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.996
1600	0.994
1800	0.989
2000	0.987
2200	0.959
2400	0.953

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ( $10^{-6}\text{K}^{-1}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-1.0	-0.5	-0.4	-0.2	0.0	0.7	1.4
-20~ 0	-0.9	-0.4	-0.3	0.0	0.2	0.8	1.6
0~20	-0.8	-0.2	-0.2	0.1	0.3	1.0	1.8
20~40	-0.7	-0.1	-0.1	0.2	0.5	1.2	2.1
40~60	-0.6	0.0	0.0	0.3	0.6	1.4	2.3
60~80	-0.5	0.1	0.1	0.4	0.7	1.6	2.5

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	3.33
Specific Gravity d	2.64
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.