

S-TIM22

Code(d) **648338**

Code(e) **652335**

Refractive Index n_d	1.64769 1.647689	Abbe Number ν_d	33.79	Dispersion n_F-n_C	0.019167
Refractive Index n_e	1.652221	Abbe Number ν_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	

Constants of Dispersion Formula	
A_1	1.44222294E+00
A_2	1.94432265E-01
A_3	1.74092482E+00
B_1	1.04249404E-02
B_2	5.50235257E-02
B_3	1.69710769E+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	1.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	798
Rigidity Modulus G (10^9N/m^2)	322
Poisson's Ratio σ	0.238
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	149
Photoelastic Constant β nm/(cm· 10^5Pa)	2.82

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
$\theta'_{i,F'}$	

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
$\Delta\theta_{i,g}$	

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
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	98
Thermal Conductivity λ W/(m·K)	1.02

Coloring			
λ_{80}	395	λ_5	360
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	386	$\lambda_{0.05}$	360

CCI		
B	G	R
0.00	1.48	1.49

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

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ($10^{-6}/^\circ\text{C}$)						
	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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.79
Remarks	

OHARA 17-04

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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.