

S-TIM35

Code(d) **699301**

Code(e) **704299**

Refractive Index n_d	1.69895 1.698947	Abbe Number ν_d	30.13	Dispersion n_F-n_C	0.023199
Refractive Index n_e	1.704424	Abbe Number ν_e	29.89	Dispersion $n_F-n_{C'}$	0.023567

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.65283
n_{1970}	1.97009	1.65905
n_{1530}	1.52958	1.66615
n_{1129}	1.12864	1.67335
n_t	1.01398	1.67606
n_s	0.85211	1.68120
$n_{A'}$	0.76819	1.68496
n_r	0.70652	1.68854
n_C	0.65627	1.69222
$n_{C'}$	0.64385	1.69327
$n_{\text{He-Ne}}$	0.6328	1.69426
n_D	0.58929	1.69875
n_d	0.58756	1.69895
n_e	0.54607	1.70442
n_F	0.48613	1.71542
$n_{F'}$	0.47999	1.71684
$n_{\text{He-Cd}}$	0.44157	1.72750
n_g	0.435835	1.72941
n_h	0.404656	1.74189
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.55849775E+00
A_2	2.30767007E-01
A_3	1.84436099E+00
B_1	1.15367235E-02
B_2	5.86095947E-02
B_3	1.62981888E+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 (GPa)	87.5
Rigidity Modulus G (GPa)	35.3
Poisson's Ratio σ	0.238
Knoop Hardness Hk(Class)	500 5
Abrasion Aa	142

Partial Dispersions	
n_C-n_t	0.016161
$n_C-n_{A'}$	0.007266
n_d-n_C	0.006722
n_e-n_C	0.012199
n_g-n_d	0.030465
n_g-n_F	0.013988
n_h-n_g	0.012478
n_i-n_g	
n_C-n_t	0.017210
$n_e-n_{C'}$	0.011150
$n_{F'}-n_e$	0.012417
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6966
$\theta_{C,A'}$	0.3132
$\theta_{d,C}$	0.2898
$\theta_{e,C}$	0.5258
$\theta_{g,d}$	1.3132
$\theta_{g,F}$	0.6030
$\theta_{h,g}$	0.5379
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7303
$\theta'_{e,C}$	0.4731
$\theta'_{F,e}$	0.5269
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0086
$\Delta \theta_{C,A'}$	0.0008
$\Delta \theta_{g,d}$	0.0111
$\Delta \theta_{g,F}$	0.0103
$\Delta \theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	579
Annealing Point AP (°C)	603
Transformation Temperature Tg (°C)	622
Yield Point At (°C)	648
Softening Point SP (°C)	716
Expansion Coefficients (-30~+70°C)	75
α (10^{-7}K^{-1}) (+100~+300°C)	89
Thermal Conductivity λ W/(m·K)	1.05

Coloring			
λ_{80}	400	λ_5	360
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	397	$\lambda_{0.05}$	367

CCI		
B	G	R
0.00	2.94	2.98

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.14
380	0.48
390	0.72
400	0.84
420	0.939
440	0.964
460	0.974
480	0.981
500	0.986
550	0.994
600	0.994
650	0.993
700	0.995
800	0.998
900	0.999
1000	0.999
1200	0.999
1400	0.995
1600	0.995
1800	0.988
2000	0.980
2200	0.942
2400	0.931

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative (10^{-6}K^{-1})						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.0	2.8	2.8	3.1	3.5	4.4	5.5
-20~ 0	2.1	2.9	3.0	3.3	3.7	4.6	5.8
0~20	2.1	3.0	3.1	3.4	3.8	4.9	6.1
20~40	2.3	3.2	3.2	3.6	4.0	5.1	6.4
40~60	2.4	3.3	3.4	3.7	4.2	5.3	6.7
60~80	2.4	3.4	3.5	3.9	4.4	5.6	7.0

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁹ Pa)	3.04
Specific Gravity d	2.96
Remarks	

OHARA 23-05

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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.