

S-TIM 1

Code(d) **626357**

Code(e) **630354**

Refractive Index n_d	1.62588 1.625882	Abbe Number ν_d	35.70	Dispersion n_F-n_C	0.017532
Refractive Index n_e	1.630031	Abbe Number ν_e	35.43	Dispersion n_F-n_C'	0.017780

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.58769
n_{1970}	1.97009	1.59337
n_{1530}	1.52958	1.59970
n_{1129}	1.12864	1.60583
n_t	1.01398	1.60805
n_s	0.85211	1.61216
$n_{A'}$	0.76819	1.61511
n_r	0.70652	1.61790
n_C	0.65627	1.62074
$n_{C'}$	0.64385	1.62155
$n_{\text{He-Ne}}$	0.6328	1.62231
n_D	0.58929	1.62573
n_d	0.58756	1.62588
n_e	0.54607	1.63003
n_F	0.48613	1.63828
$n_{F'}$	0.47999	1.63933
$n_{\text{He-Cd}}$	0.44157	1.64720
n_g	0.435835	1.64861
n_h	0.404656	1.65769
n_i	0.365015	1.67454

Constants of Dispersion Formula	
A_1	1.44963830E+00
A_2	1.22986408E-01
A_3	1.38066723E+00
B_1	1.12094282E-02
B_2	5.96265770E-02
B_3	1.38178326E+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)	786
Rigidity Modulus G (10^8N/m^2)	319
Poisson's Ratio σ	0.234
Knoop Hardness Hk[Class]	530 5
Abrasion Aa	136
Photoelastic Constant β (nm/cm/ 10^9Pa)	2.82

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	1.4	2.1	2.1	2.3	2.6	3.3	4.1	
-20~ 0	1.5	2.2	2.2	2.4	2.7	3.5	4.3	
0~20	1.6	2.3	2.3	2.6	2.9	3.6	4.5	
20~40	1.7	2.4	2.4	2.7	3.0	3.8	4.7	
40~60	1.8	2.5	2.5	2.8	3.1	3.9	4.9	
60~80	1.9	2.6	2.6	2.9	3.2	4.1	5.1	

Partial Dispersions	
n_C-n_t	0.012693
$n_C-n_{A'}$	0.005628
n_d-n_C	0.005139
n_e-n_C	0.009288
n_g-n_d	0.022725
n_g-n_F	0.010332
n_h-n_g	0.009086
n_i-n_g	0.025932
n_C-n_t	0.013499
$n_e-n_{C'}$	0.008482
n_F-n_e	0.009298
$n_i-n_{F'}$	0.035210

Relative Partial Dispersions	
$\theta_{C,t}$	0.7240
$\theta_{C,A'}$	0.3210
$\theta_{d,C}$	0.2931
$\theta_{e,C}$	0.5298
$\theta_{g,d}$	1.2962
$\theta_{g,F}$	0.5893
$\theta_{h,g}$	0.5183
$\theta_{i,g}$	1.4791
$\theta'_{C,t}$	0.7592
$\theta'_{e,C'}$	0.4771
$\theta'_{F,e}$	0.5229
$\theta'_{i,F'}$	1.9803

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0098
$\Delta\theta_{C,A'}$	0.0019
$\Delta\theta_{g,d}$	0.0056
$\Delta\theta_{g,F}$	0.0056
$\Delta\theta_{i,g}$	0.0530

Thermal Properties	
Strain Point StP (°C)	544
Annealing Point AP (°C)	571
Transformation Temperature Tg (°C)	602
Yield Point At (°C)	630
Softening Point SP (°C)	699
Expansion Coefficients (-30~+70°C)	81
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	96
Thermal Conductivity k (W/m·K)	1.04

Coloring			
λ_{80}	390	λ_5	355
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	383	$\lambda_{0.05}$	359

CCI		
B	G	R
0.00	1.20	1.21

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	0.09
370	0.47
380	0.76
390	0.89
400	0.945
420	0.977
440	0.984
460	0.987
480	0.990
500	0.992
550	0.997
600	0.997
650	0.996
700	0.997
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.993
1600	0.993
1800	0.980
2000	0.965
2200	0.917
2400	0.89

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.71
Remarks	

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