

S-YGH51

Code(d) **75523**

Code(e) **75821**

Refractive Index n_d	1.75500 1.754999	Abbe Number ν_d	52.3 52.32	Dispersion n_F-n_C	0.01443 0.014431
Refractive Index n_e	1.758437	Abbe Number ν_e	52.08	Dispersion $n_F-n_{C'}$	0.014562

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.71387
n_{1970}	1.97009	1.72153
n_{1530}	1.52958	1.72961
n_{1129}	1.12864	1.73662
n_t	1.01398	1.73893
n_s	0.85211	1.74292
$n_{A'}$	0.76819	1.74565
n_r	0.70652	1.74814
n_C	0.65627	1.75062
$n_{C'}$	0.64385	1.75132
$n_{\text{He-Ne}}$	0.6328	1.75197
n_D	0.58929	1.75487
n_d	0.58756	1.75500
n_e	0.54607	1.75844
n_F	0.48613	1.76505
$n_{F'}$	0.47999	1.76588
$n_{\text{He-Cd}}$	0.44157	1.77191
n_g	0.435835	1.77296
n_h	0.404656	1.77954
n_i	0.365015	1.79083

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0185
$\Delta\theta_{C,A'}$	0.0055
$\Delta\theta_{g,d}$	-0.0118
$\Delta\theta_{g,F}$	-0.0093
$\Delta\theta_{i,g}$	-0.0485

Constants of Dispersion Formula	
A_1	1.08280170E+00
A_2	9.33988681E-01
A_3	1.32367286E+00
B_1	1.81156360E-02
B_2	3.04157575E-03
B_3	9.10353195E+01

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.40
Remarks	

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		4.5		4.6	4.8	5.3	5.6
-20~ 0		4.5		4.7	4.9	5.3	5.7
0~20		4.6		4.8	5.0	5.4	5.9
20~40		4.7		4.9	5.1	5.6	6.1
40~60		4.9		5.1	5.4	5.8	6.3
60~80		5.1		5.4	5.6	6.0	6.6

Partial Dispersions	
n_C-n_t	0.011699
$n_C-n_{A'}$	0.004976
n_d-n_C	0.004375
n_e-n_C	0.007813
n_g-n_d	0.017957
n_g-n_F	0.007901
n_h-n_g	0.006588
n_i-n_g	0.017871
n_C-n_t	0.012394
$n_e-n_{C'}$	0.007118
n_F-n_e	0.007444
$n_i-n_{F'}$	0.024946

Thermal Properties	
Strain Point StP (°C)	651
Annealing Point AP (°C)	670
Transformation Temperature Tg (°C)	700
Yield Point At (°C)	712
Softening Point SP (°C)	738
Expansion Coefficients (-30~+70°C)	58
α ($10^{-7}/^{\circ}\text{C}$) (+100~+300°C)	70
Thermal Conductivity k (W/m·K)	0.842

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	1222
Rigidity Modulus G (10^8N/m^2)	473
Poisson's Ratio σ	0.291
Knoop Hardness Hk(Class)	720 7
Abrasion Aa	61
Photoelastic Constant β (nm/cm/ 10^5Pa)	1.48

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	51.0
Phosphate Resistance PR	2.0

Relative Partial Dispersions	
$\theta_{C,t}$	0.8107
$\theta_{C,A'}$	0.3448
$\theta_{d,C}$	0.3032
$\theta_{e,C}$	0.5414
$\theta_{g,d}$	1.2443
$\theta_{g,F}$	0.5475
$\theta_{h,g}$	0.4565
$\theta_{i,g}$	1.2384
$\theta'_{C,t}$	0.8511
$\theta'_{e,C'}$	0.4888
$\theta'_{F',e}$	0.5112
$\theta'_{i,F}$	1.7131

Coloring			
λ_{80}	370	λ_5	280
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	0.03
290	0.12
300	0.21
310	0.24
320	0.47
330	0.61
340	0.73
350	0.82
360	0.88
370	0.930
380	0.956
390	0.972
400	0.980
420	0.988
440	0.991
460	0.994
480	0.996
500	0.997
550	0.998
600	0.998
650	0.998
700	0.998
800	0.998
900	0.998
1000	0.997
1200	0.997
1400	0.993
1600	0.993
1800	0.984
2000	0.958
2200	0.88
2400	0.62