

S-NBH59

Code(d) **766358**

Code(e) **771356**

Refractive Index n_d	1.76634 1.766342	Abbe Number ν_d	35.82	Dispersion n_F-n_C	0.021393
Refractive Index n_e	1.771415	Abbe Number ν_e	35.59	Dispersion n_F-n_C'	0.021677

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.72069
n_{1970}	1.97009	1.72721
n_{1530}	1.52958	1.73454
n_{1129}	1.12864	1.74182
n_t	1.01398	1.74450
n_s	0.85211	1.74951
$n_{A'}$	0.76819	1.75313
n_f	0.70652	1.75655
n_C	0.65627	1.76004
$n_{C'}$	0.64385	1.76103
$n_{\text{He-Ne}}$	0.6328	1.76196
n_D	0.58929	1.76615
n_d	0.58756	1.76634
n_e	0.54607	1.77141
n_F	0.48613	1.78143
$n_{F'}$	0.47999	1.78270
$n_{\text{He-Cd}}$	0.44157	1.79215
n_g	0.435835	1.79382
n_h	0.404656	1.80453
n_i	0.365015	1.82378

Constants of Dispersion Formula	
A_1	1.73689864E+00
A_2	2.87362541E-01
A_3	1.85126136E+00
B_1	1.07866506E-02
B_2	4.58085077E-02
B_3	1.49646900E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	112.1
Rigidity Modulus G (GPa)	44.4
Poisson's Ratio σ	0.261
Knoop Hardness Hk[Class]	610 * 6
Abrasion Aa	135

Partial Dispersions	
n_C-n_t	0.015542
$n_C-n_{A'}$	0.006912
n_d-n_C	0.006303
n_e-n_C	0.011376
n_g-n_d	0.027481
n_g-n_F	0.012391
n_h-n_g	0.010708
n_i-n_g	0.029960
n_C-n_t	0.016531
$n_e-n_{C'}$	0.010387
$n_{F'}-n_e$	0.011290
$n_i-n_{F'}$	0.041078

Relative Partial Dispersions	
$\theta_{C,t}$	0.7265
$\theta_{C,A'}$	0.3231
$\theta_{d,C}$	0.2946
$\theta_{e,C}$	0.5318
$\theta_{g,d}$	1.2846
$\theta_{g,F}$	0.5792
$\theta_{h,g}$	0.5005
$\theta_{i,g}$	1.4005
$\theta'_{C,t}$	0.7626
$\theta'_{e,C}$	0.4792
$\theta'_{F,e}$	0.5208
$\theta'_{i,F'}$	1.8950

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0118
$\Delta \theta_{C,A'}$	0.0038
$\Delta \theta_{g,d}$	-0.0057
$\Delta \theta_{g,F}$	-0.0043
$\Delta \theta_{i,g}$	-0.0246

Thermal Properties	
Strain Point StP (°C)	493
Annealing Point AP (°C)	516
Transformation Temperature Tg (°C)	526
Yield Point At (°C)	572
Softening Point SP (°C)	623
Expansion Coefficients (-30~+70°C)	82
α (10 ⁻⁷ K ⁻¹) (+100~+300°C)	103
Thermal Conductivity λ W/(m·K)	1.10

Coloring			
λ_{80}	395	λ_5	325
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	366	$\lambda_{0.05}$	322

CCI		
B	G	R
0.00	1.09	1.08

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	0.02
330	0.17
340	0.42
350	0.62
360	0.75
370	0.84
380	0.90
390	0.932
400	0.952
420	0.970
440	0.976
460	0.982
480	0.987
500	0.991
550	0.997
600	0.996
650	0.995
700	0.997
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.995
1800	0.987
2000	0.975
2200	0.942
2400	0.87

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	2.8	3.6	3.7	3.9	4.3	5.1	5.9
-20~ 0	2.7	3.6	3.7	3.9	4.3	5.2	6.1
0~20	2.7	3.6	3.6	3.9	4.3	5.2	6.2
20~40	2.6	3.5	3.6	3.9	4.3	5.2	6.2
40~60	2.6	3.6	3.6	3.9	4.3	5.3	6.3
60~80	2.7	3.7	3.7	4.1	4.5	5.5	6.6

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.40
Specific Gravity d	3.47
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.