

S-NBH 8

Code(d) **720347**

Code(e) **725345**

Refractive Index n_d	1.72047 1.720467	Abbe Number ν_d	34.71	Dispersion n_F-n_C	0.020758
Refractive Index n_e	1.725385	Abbe Number ν_e	34.47	Dispersion $n_F-n_{C'}$	0.021042

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.67534
n_{1970}	1.97009	1.68198
n_{1530}	1.52958	1.68941
n_{1129}	1.12864	1.69665
n_t	1.01398	1.69928
n_s	0.85211	1.70416
$n_{A'}$	0.76819	1.70767
n_r	0.70652	1.71099
n_C	0.65627	1.71437
$n_{C'}$	0.64385	1.71532
$n_{\text{He-Ne}}$	0.6328	1.71622
n_D	0.58929	1.72029
n_d	0.58756	1.72047
n_e	0.54607	1.72538
n_F	0.48613	1.73512
$n_{F'}$	0.47999	1.73636
$n_{\text{He-Cd}}$	0.44157	1.74559
n_g	0.435835	1.74723
n_h	0.404656	1.75777
n_i	0.365015	1.77689

Constants of Dispersion Formula	
A_1	1.61344136E+00
A_2	2.57295888E-01
A_3	1.98364455E+00
B_1	1.06386752E-02
B_2	4.87071624E-02
B_3	1.59784404E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	101.7
Rigidity Modulus G (GPa)	40.7
Poisson's Ratio σ	0.250
Knoop Hardness Hk(Class)	600 6
Abrasion Aa	153

Partial Dispersions	
n_C-n_t	0.015084
$n_C-n_{A'}$	0.006690
n_d-n_C	0.006102
n_e-n_C	0.011020
n_g-n_d	0.026767
n_g-n_F	0.012111
n_h-n_g	0.010534
n_i-n_g	0.029660
n_C-n_t	0.016041
$n_e-n_{C'}$	0.010063
$n_{F'}-n_e$	0.010979
$n_i-n_{F'}$	0.040530

Relative Partial Dispersions	
$\theta_{C,t}$	0.7267
$\theta_{C,A'}$	0.3223
$\theta_{d,C}$	0.2940
$\theta_{e,C}$	0.5309
$\theta_{g,d}$	1.2895
$\theta_{g,F}$	0.5834
$\theta_{h,g}$	0.5075
$\theta_{i,g}$	1.4288
$\theta'_{C,t}$	0.7623
$\theta'_{e,C'}$	0.4782
$\theta'_{F',e}$	0.5218
$\theta'_{i,F'}$	1.9261

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0172
$\Delta\theta_{C,A'}$	0.0044
$\Delta\theta_{g,d}$	-0.0031
$\Delta\theta_{g,F}$	-0.0019
$\Delta\theta_{i,g}$	-0.0056

Thermal Properties	
Strain Point StP (°C)	476
Annealing Point AP (°C)	499
Transformation Temperature Tg (°C)	508
Yield Point At (°C)	555
Softening Point SP (°C)	611
Expansion Coefficients (-30~+70°C)	81
α (10^{-7}K^{-1}) (+100~+300°C)	100
Thermal Conductivity λ W/(m·K)	1.05

Coloring			
λ_{80}	390	λ_5	330
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	371	$\lambda_{0.05}$	331

CCI		
B	G	R
0.00	1.38	1.48

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	0.03
340	0.24
350	0.49
360	0.67
370	0.79
380	0.86
390	0.908
400	0.936
420	0.962
440	0.972
460	0.979
480	0.984
500	0.989
550	0.996
600	0.997
650	0.997
700	0.998
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.997
1800	0.992
2000	0.984
2200	0.955
2400	0.88

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	2.2	3.0	3.0	3.3	3.6	4.3	5.2
-20~ 0	2.2	3.0	3.1	3.4	3.7	4.5	5.4
0~20	2.2	3.1	3.1	3.4	3.8	4.6	5.5
20~40	2.2	3.1	3.2	3.5	3.9	4.7	5.7
40~60	2.3	3.2	3.3	3.6	3.9	4.9	5.9
60~80	2.4	3.3	3.3	3.6	4.0	5.0	6.1

Other Properties	
Photoelastic Constant β nm/(cm \cdot 10 5 Pa)	2.90
Specific Gravity d	3.19
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.