

# S-NBH56

Code(d) **855248**

Code(e) **863246**

Refractive Index $n_d$	<b>1.85478</b>	Abbe Number $\nu_d$	<b>24.80</b>	Dispersion $n_F-n_C$	<b>0.034469</b>
	1.854780				
Refractive Index $n_e$	1.862904	Abbe Number $\nu_e$	24.61	Dispersion $n_F-n_C'$	0.035057

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.79234
$n_{1970}$	1.97009	1.79974
$n_{1530}$	1.52958	1.80847
$n_{1129}$	1.12864	1.81792
$n_t$	1.01398	1.82165
$n_s$	0.85211	1.82889
$n_{A'}$	0.76819	1.83429
$n_f$	0.70652	1.83949
$n_C$	0.65627	1.84488
$n_{C'}$	0.64385	1.84642
$n_{\text{He-Ne}}$	0.6328	1.84787
$n_D$	0.58929	1.85448
$n_d$	0.58756	1.85478
$n_e$	0.54607	1.86290
$n_F$	0.48613	1.87935
$n_{F'}$	0.47999	1.88147
$n_{\text{He-Cd}}$	0.44157	1.89755
$n_g$	0.435835	1.90045
$n_h$	0.404656	1.91944
$n_i$	0.365015	

Constants of Dispersion Formula	
$A_1$	1.85191438E+00
$A_2$	4.31102852E-01
$A_3$	3.45278284E+00
$B_1$	1.32732620E-02
$B_2$	5.85944644E-02
$B_3$	2.39357089E+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)	106.7
Rigidity Modulus G (GPa)	42.7
Poisson's Ratio $\sigma$	0.249
Knoop Hardness Hk[Class]	560   6
Abrasion Aa	138

Partial Dispersions	
$n_C-n_t$	0.023230
$n_C-n_{A'}$	0.010586
$n_d-n_C$	0.009904
$n_e-n_C$	0.018028
$n_g-n_d$	0.045668
$n_g-n_F$	0.021103
$n_h-n_g$	0.018989
$n_i-n_g$	
$n_C-n_t$	0.024770
$n_e-n_{C'}$	0.016488
$n_{F'}-n_e$	0.018569
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6739
$\theta_{C,A'}$	0.3071
$\theta_{d,C}$	0.2873
$\theta_{e,C}$	0.5230
$\theta_{g,d}$	1.3249
$\theta_{g,F}$	0.6122
$\theta_{h,g}$	0.5509
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7066
$\theta'_{e,C}$	0.4703
$\theta'_{F,e}$	0.5297
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0109
$\Delta \theta_{C,A'}$	0.0012
$\Delta \theta_{g,d}$	0.0117
$\Delta \theta_{g,F}$	0.0109
$\Delta \theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	578
Yield Point At (°C)	612
Softening Point SP (°C)	-
Expansion Coefficients (-30~+70°C)	77
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	94
Thermal Conductivity $\lambda$ W/(m·K)	1.12

Coloring			
$\lambda_{80}$		$\lambda_5$	360
$\lambda_{70}$	395		

Internal transmission			
$\lambda_{0.80}$	389	$\lambda_{0.05}$	358

CCI		
B	G	R
0.00	2.57	2.76

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	0.11
370	0.44
380	0.69
390	0.81
400	0.87
420	0.933
440	0.958
460	0.970
480	0.978
500	0.983
550	0.993
600	0.996
650	0.996
700	0.997
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.999
1600	0.997
1800	0.993
2000	0.991
2200	0.977
2400	0.966

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ( $10^{-6}\text{K}^{-1}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.4	3.5	3.6	4.0	4.6	6.0	7.7
-20~ 0	2.3	3.6	3.7	4.1	4.7	6.3	8.1
0~20	2.3	3.6	3.7	4.2	4.8	6.5	8.5
20~40	2.3	3.7	3.8	4.3	4.9	6.7	8.7
40~60	2.3	3.8	3.9	4.4	5.1	6.8	9.0
60~80	2.4	3.9	4.0	4.5	5.2	7.1	9.4

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>9</sup> Pa)	3.35
Specific Gravity d	3.49
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.