

# S-NBH52V

Code(d) **673383**

Code(e) **677380**

Refractive Index $n_d$	<b>1.67300</b> 1.673000	Abbe Number $\nu_d$	<b>38.26</b>	Dispersion $n_F-n_C$	<b>0.017592</b>
Refractive Index $n_e$	1.677172	Abbe Number $\nu_e$	38.01	Dispersion $n_F-n_{C'}$	0.017815

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.63149
$n_{1970}$	1.97009	1.63815
$n_{1530}$	1.52958	1.64544
$n_{1129}$	1.12864	1.65225
$n_t$	1.01398	1.65463
$n_s$	0.85211	1.65896
$n_{A'}$	0.76819	1.66203
$n_r$	0.70652	1.66489
$n_C$	0.65627	1.66779
$n_{C'}$	0.64385	1.66861
$n_{\text{He-Ne}}$	0.6328	1.66938
$n_D$	0.58929	1.67285
$n_d$	0.58756	1.67300
$n_e$	0.54607	1.67717
$n_F$	0.48613	1.68538
$n_{F'}$	0.47999	1.68643
$n_{\text{He-Cd}}$	0.44157	1.69415
$n_g$	0.435835	1.69551
$n_h$	0.404656	1.70425
$n_i$	0.365015	1.71994

Constants of Dispersion Formula	
$A_1$	1.51336868E+00
$A_2$	2.12341478E-01
$A_3$	1.54149143E+00
$B_1$	9.87077827E-03
$B_2$	4.62843662E-02
$B_3$	1.26978510E+02

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

Mechanical Properties	
Young's Modulus E (GPa)	96.3
Rigidity Modulus G (GPa)	38.6
Poisson's Ratio $\sigma$	0.246
Knoop Hardness Hk(Class)	600   6
Abrasion Aa	139

Partial Dispersions	
$n_C-n_t$	0.013160
$n_C-n_{A'}$	0.005766
$n_d-n_C$	0.005208
$n_e-n_C$	0.009380
$n_g-n_d$	0.022512
$n_g-n_F$	0.010128
$n_h-n_g$	0.008738
$n_i-n_g$	0.024433
$n_C-n_t$	0.013979
$n_e-n_{C'}$	0.008561
$n_{F'}-n_e$	0.009254
$n_i-n_{F'}$	0.033519

Relative Partial Dispersions	
$\theta_{C,t}$	0.7481
$\theta_{C,A'}$	0.3278
$\theta_{d,C}$	0.2960
$\theta_{e,C}$	0.5332
$\theta_{g,d}$	1.2797
$\theta_{g,F}$	0.5757
$\theta_{h,g}$	0.4967
$\theta_{i,g}$	1.3889
$\theta'_{C,t}$	0.7847
$\theta'_{e,C'}$	0.4806
$\theta'_{F',e}$	0.5194
$\theta'_{i,F'}$	1.8815

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0219
$\Delta\theta_{C,A'}$	0.0056
$\Delta\theta_{g,d}$	-0.0055
$\Delta\theta_{g,F}$	-0.0039
$\Delta\theta_{i,g}$	-0.0158

Thermal Properties	
Strain Point StP (°C)	460
Annealing Point AP (°C)	483
Transformation Temperature Tg (°C)	497
Yield Point At (°C)	538
Softening Point SP (°C)	592
Expansion Coefficients (-30~+70°C)	77
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	98
Thermal Conductivity $\lambda$ W/(m·K)	1.03

Coloring			
$\lambda_{80}$	360	$\lambda_5$	320
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	348	$\lambda_{0.05}$	320

CCI		
B	G	R
0.00	0.25	0.26

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	0.04
330	0.31
340	0.65
350	0.84
360	0.919
370	0.956
380	0.974
390	0.983
400	0.988
420	0.992
440	0.993
460	0.995
480	0.996
500	0.997
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.992
1600	0.993
1800	0.986
2000	0.973
2200	0.922
2400	0.82

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	2.9	3.6	3.6	3.8	4.1	4.7	5.4
-20~ 0	2.9	3.6	3.6	3.8	4.1	4.8	5.5
0~20	2.8	3.5	3.6	3.8	4.1	4.8	5.6
20~40	2.8	3.5	3.5	3.8	4.1	4.8	5.6
40~60	2.8	3.5	3.6	3.8	4.2	4.9	5.7
60~80	2.8	3.6	3.6	3.9	4.3	5.1	5.9

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	3.11
Specific Gravity d	3.01
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.