

# S-NBH58

Code(d) **789284**

Code(e) **795282**

Refractive Index $n_d$	<b>1.78880</b> 1.788800	Abbe Number $\nu_d$	<b>28.43</b>	Dispersion $n_F-n_C$	<b>0.027747</b>
Refractive Index $n_e$	1.795354	Abbe Number $\nu_e$	28.22	Dispersion $n_{F'}-n_{C'}$	0.028184

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.73459
$n_{1970}$	1.97009	1.74170
$n_{1530}$	1.52958	1.74987
$n_{1129}$	1.12864	1.75829
$n_t$	1.01398	1.76149
$n_s$	0.85211	1.76759
$n_{A'}$	0.76819	1.77207
$n_r$	0.70652	1.77635
$n_C$	0.65627	1.78076
$n_{C'}$	0.64385	1.78201
$n_{\text{He-Ne}}$	0.6328	1.78319
$n_D$	0.58929	1.78856
$n_d$	0.58756	1.78880
$n_e$	0.54607	1.79535
$n_F$	0.48613	1.80850
$n_{F'}$	0.47999	1.81020
$n_{\text{He-Cd}}$	0.44157	1.82290
$n_g$	0.435835	1.82518
$n_h$	0.404656	1.83997
$n_i$	0.365015	

Constants of Dispersion Formula	
$A_1$	1.71408219E+00
$A_2$	3.62966167E-01
$A_3$	2.56486266E+00
$B_1$	1.16812775E-02
$B_2$	5.40847347E-02
$B_3$	1.88785700E+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 ( $10^9\text{N/m}^2$ )	1051
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	423
Poisson's Ratio $\sigma$	0.244
Knoop Hardness Hk[Class]	590   6
Abrasion Aa	131
Photoelastic Constant $\beta$ nm/(cm $\cdot$ 10 $^5$ Pa)	3.15

Partial Dispersions	
$n_C-n_t$	0.019265
$n_C-n_{A'}$	0.008684
$n_d-n_C$	0.008043
$n_e-n_C$	0.014597
$n_g-n_d$	0.036376
$n_g-n_F$	0.016672
$n_h-n_g$	0.014799
$n_i-n_g$	
$n_C-n_t$	0.020520
$n_e-n_{C'}$	0.013342
$n_{F'}-n_e$	0.014842
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6943
$\theta_{C,A'}$	0.3130
$\theta_{d,C}$	0.2899
$\theta_{e,C}$	0.5261
$\theta_{g,d}$	1.3110
$\theta_{g,F}$	0.6009
$\theta_{h,g}$	0.5334
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7281
$\theta'_{e,C'}$	0.4734
$\theta'_{F',e}$	0.5266
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0142
$\Delta\theta_{C,A'}$	0.0027
$\Delta\theta_{g,d}$	0.0053
$\Delta\theta_{g,F}$	0.0054
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP ( $^{\circ}\text{C}$ )	515
Annealing Point AP ( $^{\circ}\text{C}$ )	540
Transformation Temperature Tg ( $^{\circ}\text{C}$ )	560
Yield Point At ( $^{\circ}\text{C}$ )	600
Softening Point SP ( $^{\circ}\text{C}$ )	652
Expansion Coefficients (-30~+70 $^{\circ}\text{C}$ )	74
$\alpha$ ( $10^{-7}/^{\circ}\text{C}$ ) (+100~+300 $^{\circ}\text{C}$ )	95
Thermal Conductivity $\lambda$ W/(m $\cdot$ K)	1.13

Coloring			
$\lambda_{80}$	410	$\lambda_5$	345
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	376	$\lambda_{0.05}$	344

CCI		
B	G	R
0.00	1.27	1.35

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.14
360	0.48
370	0.73
380	0.85
390	0.907
400	0.936
420	0.966
440	0.979
460	0.985
480	0.989
500	0.992
550	0.997
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.992
2000	0.987
2200	0.965
2400	0.946

Temperature Coefficients of Refractive Index							
Range of Temperature ( $^{\circ}\text{C}$ )	$\Delta n/\Delta T$ relative ( $10^{-6}/^{\circ}\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.3	4.2	4.3	4.6	5.1	6.1	7.3
-20~ 0	3.2	4.3	4.3	4.7	5.1	6.3	7.6
0~20	3.2	4.3	4.4	4.7	5.2	6.5	7.9
20~40	3.2	4.4	4.4	4.8	5.3	6.6	8.1
40~60	3.2	4.4	4.5	4.9	5.5	6.8	8.3
60~80	3.3	4.6	4.6	5.1	5.6	7.0	8.6

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.33
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.