S-NBH 5

Code(d) **654397**

Code(e) **658395**

Refractive Index	n_d	**1.65412** 1.654115	Abbe Number	ν_d **39.68**	Dispersion	n_F-n_C **0.016484**
Refractive Index	n_e	1.658026	Abbe Number	ν_e 39.43	Dispersion	$n_{F'}$-$n_{C'}$ 0.016687

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.61410
n_{1970}	1.97009	1.62070
n_{1530}	1.52958	1.62787
n_{1129}	1.12864	1.63448
n_t	1.01398	1.63677
n_s	0.85211	1.64090
$n_{A'}$	0.76819	1.64379
n_r	0.70652	1.64649
n_C	0.65627	1.64923
$n_{C'}$	0.64385	1.65000
n_{He-Ne}	0.6328	1.65072
n_D	0.58929	1.65397
n_d	0.58756	1.65412
n_e	0.54607	1.65803
n_F	0.48613	1.66571
$n_{F'}$	0.47999	1.66668
n_{He-Cd}	0.44157	1.67389
n_g	0.435835	1.67517
n_h	0.404656	1.68331
n_i	0.365015	1.69791

Constants of Dispersion Formula	
A_1	1.47544521E+00
A_2	1.93060095E-01
A_3	1.50939010E+00
B_1	9.55836740E-03
B_2	4.60430483E-02
B_3	1.26422746E+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)	90.2	
Rigidity Modulus G (GPa)	36.1	
Poisson's Ratio σ	0.248	
Knoop Hardness Hk[Class]	570	6
Abrasion Aa	123	

Partial Dispersions	
n_C-n_t	0.012452
n_C-$n_{A'}$	0.005432
n_d-n_C	0.004890
n_e-n_C	0.008801
n_g-n_d	0.021051
n_g-n_F	0.009457
n_h-n_g	0.008144
n_i-n_g	0.022741
n_C-n_t	0.013223
n_e-$n_{C'}$	0.008030
$n_{F'}$-n_e	0.008657
n_i-$n_{F'}$	0.031224

Relative Partial Dispersions	
$\theta_{C,t}$	0.7554
$\theta_{C,A'}$	0.3295
$\theta_{d,C}$	0.2967
$\theta_{e,C}$	0.5339
$\theta_{g,d}$	1.2771
$\theta_{g,F}$	0.5737
$\theta_{h,g}$	0.4941
$\theta_{i,g}$	1.3796
$\theta'_{C',t}$	0.7924
$\theta'_{e,C'}$	0.4812
$\theta'_{F',e}$	0.5188
$\theta'_{i,F'}$	1.8712

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0226
$\Delta\theta_{C,A'}$	0.0056
$\Delta\theta_{g,d}$	-0.0052
$\Delta\theta_{g,F}$	-0.0036
$\Delta\theta_{i,g}$	-0.0132

Thermal Properties		
Strain Point StP (℃)		489
Annealing Point AP (℃)		511
Transformation Temperature Tg (℃)		524
Yield Point At (℃)		575
Softening Point SP (℃)		645
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	66
	(+100~+300℃)	84
Thermal Conductivity λ W/(m·K)		0.965

Coloring			
λ_{80}	370	λ_5	325
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	357	$\lambda_{0.05}$	328

CCI		
B	G	R
0.00	0.66	0.69

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	0.12
340	0.47
350	0.71
360	0.83
370	0.902
380	0.936
390	0.957
400	0.969
420	0.980
440	0.985
460	0.988
480	0.991
500	0.994
550	0.997
600	0.997
650	0.997
700	0.998
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.991
1600	0.994
1800	0.989
2000	0.976
2200	0.919
2400	0.80

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}$$K^{-1}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.5	4.1	4.1	4.3	4.6	5.1	5.8
-20~ 0	3.6	4.2	4.2	4.5	4.7	5.3	6.0
0~20	3.7	4.3	4.4	4.6	4.9	5.5	6.2
20~40	3.8	4.4	4.5	4.8	5.0	5.7	6.4
40~60	3.9	4.6	4.6	4.9	5.1	5.8	6.6
60~80	3.9	4.7	4.7	5.0	5.3	6.0	6.8

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	3.22
Specific Gravity d	3.02
Remarks	

OHARA 24-01

※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.