

S-NBH51

Code(d) **750353**

Code(e) **755351**

Refractive Index n_d	1.74950 1.749505	Abbe Number ν_d	35.33	Dispersion n_F-n_C	0.021214
Refractive Index n_e	1.754531	Abbe Number ν_e	35.10	Dispersion n_F-n_C'	0.021498

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.70260
n_{1970}	1.97009	1.70965
n_{1530}	1.52958	1.71748
n_{1129}	1.12864	1.72503
n_t	1.01398	1.72776
n_s	0.85211	1.73279
$n_{A'}$	0.76819	1.73640
n_r	0.70652	1.73980
n_C	0.65627	1.74326
$n_{C'}$	0.64385	1.74424
$n_{\text{He-Ne}}$	0.6328	1.74516
n_D	0.58929	1.74932
n_d	0.58756	1.74950
n_e	0.54607	1.75453
n_F	0.48613	1.76447
$n_{F'}$	0.47999	1.76574
$n_{\text{He-Cd}}$	0.44157	1.77515
n_g	0.435835	1.77681
n_h	0.404656	1.78753
n_i	0.365015	1.80695

Constants of Dispersion Formula	
A_1	1.71203689E+00
A_2	2.55989588E-01
A_3	1.81456998E+00
B_1	1.07724134E-02
B_2	4.88593504E-02
B_3	1.36359013E+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 (10^9N/m^2)	1097
Rigidity Modulus G (10^9N/m^2)	438
Poisson's Ratio σ	0.253
Knoop Hardness Hk[Class]	610 6
Abrasion Aa	113
Photoelastic Constant β nm/(cm \cdot 10 5 Pa)	2.66

Partial Dispersions	
n_C-n_t	0.015503
$n_C-n_{A'}$	0.006860
n_d-n_C	0.006246
n_e-n_C	0.011272
n_g-n_d	0.027310
n_g-n_F	0.012342
n_h-n_g	0.010718
n_i-n_g	0.030139
n_C-n_t	0.016484
$n_e-n_{C'}$	0.010291
n_F-n_e	0.011207
$n_i-n_{F'}$	0.041216

Relative Partial Dispersions	
$\theta_{C,t}$	0.7308
$\theta_{C,A'}$	0.3234
$\theta_{d,C}$	0.2944
$\theta_{e,C}$	0.5313
$\theta_{g,d}$	1.2874
$\theta_{g,F}$	0.5818
$\theta_{h,g}$	0.5052
$\theta_{i,g}$	1.4207
$\theta'_{C,t}$	0.7668
$\theta'_{e,C'}$	0.4787
$\theta'_{F,e}$	0.5213
$\theta'_{i,F'}$	1.9172

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0184
$\Delta\theta_{C,A'}$	0.0047
$\Delta\theta_{g,d}$	-0.0039
$\Delta\theta_{g,F}$	-0.0025
$\Delta\theta_{i,g}$	-0.0085

Thermal Properties	
Strain Point StP ($^{\circ}\text{C}$)	500
Annealing Point AP ($^{\circ}\text{C}$)	521
Transformation Temperature Tg ($^{\circ}\text{C}$)	535
Yield Point At ($^{\circ}\text{C}$)	578
Softening Point SP ($^{\circ}\text{C}$)	631
Expansion Coefficients (-30~+70 $^{\circ}\text{C}$)	73
α ($10^{-7}/^{\circ}\text{C}$) (+100~+300 $^{\circ}\text{C}$)	92
Thermal Conductivity λ W/(m \cdot K)	1.12

Coloring			
λ_{80}	400	λ_5	330
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	370	$\lambda_{0.05}$	331

CCI		
B	G	R
0.00	1.22	1.30

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	0.02
340	0.22
350	0.49
360	0.68
370	0.80
380	0.87
390	0.918
400	0.943
420	0.967
440	0.976
460	0.982
480	0.987
500	0.991
550	0.997
600	0.997
650	0.998
700	0.998
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.995
1600	0.994
1800	0.989
2000	0.980
2200	0.945
2400	0.87

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	4.1	4.9	4.9	5.2	5.5	6.3	7.1
-20~ 0	4.1	4.9	5.0	5.2	5.6	6.4	7.3
0~20	4.1	4.9	5.0	5.3	5.6	6.5	7.5
20~40	4.1	5.0	5.0	5.3	5.7	6.6	7.6
40~60	4.1	5.0	5.1	5.4	5.8	6.7	7.8
60~80	4.1	5.1	5.1	5.4	5.9	6.9	8.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.29
Remarks	

OHARA 17-04

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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.