

S-BAL 2

Code(d) **571508**

Code(e) **574505**

Refractive Index n_d	1.57099 1.570989	Abbe Number ν_d	50.80	Dispersion n_F-n_C	0.011240
Refractive Index n_e	1.573663	Abbe Number ν_e	50.50	Dispersion n_F-n_C'	0.011359

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.54240
n_{1970}	1.97009	1.54721
n_{1530}	1.52958	1.55244
n_{1129}	1.12864	1.55722
n_t	1.01398	1.55886
n_s	0.85211	1.56179
$n_{A'}$	0.76819	1.56383
n_r	0.70652	1.56572
n_C	0.65627	1.56762
$n_{C'}$	0.64385	1.56815
$n_{\text{He-Ne}}$	0.6328	1.56865
n_D	0.58929	1.57089
n_d	0.58756	1.57099
n_e	0.54607	1.57366
n_F	0.48613	1.57886
$n_{F'}$	0.47999	1.57951
$n_{\text{He-Cd}}$	0.44157	1.58430
n_g	0.435835	1.58514
n_h	0.404656	1.59045
n_i	0.365015	1.59972

Constants of Dispersion Formula	
A_1	1.30923813E+00
A_2	1.14137353E-01
A_3	1.17882259E+00
B_1	8.38873953E-03
B_2	3.99436485E-02
B_3	1.40257892E+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)	727
Rigidity Modulus G (10^9N/m^2)	292
Poisson's Ratio σ	0.245
Knoop Hardness Hk[Class]	510 5
Abrasion Aa	174
Photoelastic Constant β nm/(cm · 10^5Pa)	2.32

Partial Dispersions	
n_C-n_t	0.008753
$n_C-n_{A'}$	0.003787
n_d-n_C	0.003373
n_e-n_C	0.006047
n_g-n_d	0.014148
n_g-n_F	0.006281
n_h-n_g	0.005308
n_i-n_g	0.014580
n_C-n_t	0.009286
$n_e-n_{C'}$	0.005514
n_F-n_e	0.005845
$n_i-n_{F'}$	0.020209

Relative Partial Dispersions	
$\theta_{C,t}$	0.7787
$\theta_{C,A'}$	0.3369
$\theta_{d,C}$	0.3001
$\theta_{e,C}$	0.5380
$\theta_{g,d}$	1.2587
$\theta_{g,F}$	0.5588
$\theta_{h,g}$	0.4722
$\theta_{i,g}$	1.2972
$\theta'_{C,t}$	0.8175
$\theta'_{e,C'}$	0.4854
$\theta'_{F,e}$	0.5146
$\theta'_{i,F'}$	1.7791

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0063
$\Delta\theta_{C,A'}$	-0.0005
$\Delta\theta_{g,d}$	-0.0005
$\Delta\theta_{g,F}$	-0.0005
$\Delta\theta_{i,g}$	-0.0024

Thermal Properties	
Strain Point StP (°C)	492
Annealing Point AP (°C)	525
Transformation Temperature Tg (°C)	540
Yield Point At (°C)	582
Softening Point SP (°C)	663
Expansion Coefficients (-30~+70°C)	91
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	109
Thermal Conductivity λ W/(m·K)	0.901

Coloring			
λ_{80}	370	λ_5	335
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	363	$\lambda_{0.05}$	339

CCI		
B	G	R
0.00	0.33	0.34

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.10
350	0.47
360	0.76
370	0.89
380	0.947
390	0.971
400	0.983
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	0.998
800	0.998
900	0.998
1000	0.997
1200	0.997
1400	0.992
1600	0.992
1800	0.976
2000	0.951
2200	0.89
2400	0.84

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-0.7	-0.3	-0.3	-0.2	0.0	0.4	0.7
-20~ 0	-0.7	-0.3	-0.3	-0.1	0.0	0.4	0.8
0~20	-0.6	-0.2	-0.2	-0.1	0.1	0.5	0.9
20~40	-0.6	-0.2	-0.2	0.0	0.2	0.6	1.1
40~60	-0.6	-0.1	-0.1	0.1	0.2	0.7	1.2
60~80	-0.5	-0.1	-0.1	0.1	0.3	0.8	1.3

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.89
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.