

L-BAL43

Code(d) **586597**

Code(e) **588594**

Refractive Index n_d	1.58573 1.585730	Abbe Number ν_d	59.70	Dispersion n_F-n_C	0.009812
Refractive Index n_e	1.588070	Abbe Number ν_e	59.45	Dispersion $n_F-n_{C'}$	0.009892

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.55621
n_{1970}	1.97009	1.56185
n_{1530}	1.52958	1.56781
n_{1129}	1.12864	1.57293
n_t	1.01398	1.57458
n_s	0.85211	1.57740
$n_{A'}$	0.76819	1.57930
n_r	0.70652	1.58103
n_C	0.65627	1.58274
$n_{C'}$	0.64385	1.58321
$n_{\text{He-Ne}}$	0.6328	1.58366
n_D	0.58929	1.58564
n_d	0.58756	1.58573
n_e	0.54607	1.58807
n_F	0.48613	1.59255
$n_{F'}$	0.47999	1.59311
$n_{\text{He-Cd}}$	0.44157	1.59716
n_g	0.435835	1.59786
n_h	0.404656	1.60227
n_i	0.365015	1.60976

Constants of Dispersion Formula	
A_1	1.04745291E+00
A_2	4.28452873E-01
A_3	1.14111303E+00
B_1	5.63209756E-03
B_2	1.88321416E-02
B_3	1.14197069E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	51.4
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	904
Rigidity Modulus G (10^9N/m^2)	362
Poisson's Ratio σ	0.250
Knoop Hardness Hk[Class]	610 6
Abrasion Aa	118
Photoelastic Constant β nm/(cm \cdot 10 5 Pa)	2.18

Partial Dispersions	
n_C-n_t	0.008157
$n_C-n_{A'}$	0.003435
n_d-n_C	0.002993
n_e-n_C	0.005333
n_g-n_d	0.012132
n_g-n_F	0.005313
n_h-n_g	0.004404
n_i-n_g	0.011900
n_C-n_t	0.008634
$n_e-n_{C'}$	0.004856
n_F-n_e	0.005036
$n_i-n_{F'}$	0.016656

Relative Partial Dispersions	
$\theta_{C,t}$	0.8313
$\theta_{C,A'}$	0.3501
$\theta_{d,C}$	0.3050
$\theta_{e,C}$	0.5435
$\theta_{g,d}$	1.2364
$\theta_{g,F}$	0.5415
$\theta_{h,g}$	0.4488
$\theta_{i,g}$	1.2128
$\theta'_{C,t}$	0.8728
$\theta'_{e,C'}$	0.4909
$\theta'_{F,e}$	0.5091
$\theta'_{i,F'}$	1.6838

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0045
$\Delta\theta_{C,A'}$	0.0019
$\Delta\theta_{g,d}$	-0.0043
$\Delta\theta_{g,F}$	-0.0034
$\Delta\theta_{i,g}$	-0.0123

Thermal Properties	
Strain Point StP ($^{\circ}\text{C}$)	451
Annealing Point AP ($^{\circ}\text{C}$)	482
Transformation Temperature Tg ($^{\circ}\text{C}$)	493
Yield Point At ($^{\circ}\text{C}$)	535
Softening Point SP ($^{\circ}\text{C}$)	596
Expansion Coefficients (-30~+70 $^{\circ}\text{C}$)	72
α ($10^{-7}/^{\circ}\text{C}$) (+100~+300 $^{\circ}\text{C}$)	90
Thermal Conductivity λ W/(m \cdot K)	1.03

Coloring			
λ_{80}	340	λ_5	285
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	328	$\lambda_{0.05}$	289

CCI		
B	G	R
0.00	0.10	0.10

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	0.29
310	0.51
320	0.70
330	0.83
340	0.906
350	0.949
360	0.971
370	0.983
380	0.988
390	0.990
400	0.996
420	0.997
440	0.996
460	0.998
480	0.999
500	0.999
550	0.999
600	0.999
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.993
1600	0.997
1800	0.988
2000	0.975
2200	0.914
2400	0.84

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	3.2	3.5	3.6	3.7	3.8	4.1	4.5
-20~ 0	3.1	3.5	3.6	3.7	3.8	4.2	4.5
0~20	3.1	3.5	3.6	3.7	3.8	4.2	4.5
20~40	3.0	3.5	3.5	3.6	3.8	4.1	4.5
40~60	3.0	3.5	3.5	3.6	3.8	4.2	4.6
60~80	3.2	3.6	3.7	3.8	4.0	4.4	4.7

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.05
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.