

BAL35Y

Code(d) **589612**Code(e) **591610**

Refractive Index n_d	1.58913 1.589130	Abbe Number ν_d	61.23	Dispersion $n_F - n_C$	0.009621
Refractive Index n_e	1.591426	Abbe Number ν_e	60.99	Dispersion $n_F - n_{C'}$	0.009697

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.55937
n_{1970}	1.97009	1.56517
n_{1530}	1.52958	1.57128
n_{1129}	1.12864	1.57646
n_t	1.01398	1.57811
n_s	0.85211	1.58093
$n_{A'}$	0.76819	1.58280
n_r	0.70652	1.58451
n_C	0.65627	1.58619
$n_{C'}$	0.64385	1.58666
$n_{\text{He-Ne}}$	0.6328	1.58710
n_D	0.58929	1.58904
n_d	0.58756	1.58913
n_e	0.54607	1.59143
n_F	0.48613	1.59581
$n_{F'}$	0.47999	1.59636
$n_{\text{He-Cd}}$	0.44157	1.60032
n_g	0.435835	1.60100
n_h	0.404656	1.60530
n_i	0.365015	1.61261
n_{334}	0.334148	1.62045
n_{326}	0.326106	1.62293

Constants of Dispersion Formula ※1	
A_1	1.26231429E+00
A_2	2.25154210E-01
A_3	6.39119345E-01
B_1	6.95586355E-03
B_2	2.21310699E-02
B_3	6.31662736E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2~3
Acid Resistance(Surface) Group SR	4.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	88.1
Rigidity Modulus G (GPa)	35.4
Poisson's Ratio σ	0.244
Knoop Hardness Hk[Class]	600 6
Abrasion Aa	113

Partial Dispersions	
$n_C - n_t$	0.008076
$n_C - n_{A'}$	0.003385
$n_d - n_C$	0.002940
$n_e - n_C$	0.005236
$n_g - n_d$	0.011874
$n_g - n_F$	0.005193
$n_h - n_g$	0.004298
$n_i - n_g$	0.011602
$n_C - n_t$	0.008545
$n_e - n_{C'}$	0.004767
$n_F - n_e$	0.004930
$n_i - n_{F'}$	0.016250

Relative Partial Dispersions	
$\theta_{C,t}$	0.8394
$\theta_{C,A'}$	0.3518
$\theta_{d,C}$	0.3056
$\theta_{e,C}$	0.5442
$\theta_{g,d}$	1.2342
$\theta_{g,F}$	0.5398
$\theta_{h,g}$	0.4467
$\theta_{i,g}$	1.2059
$\theta'_{C,t}$	0.8812
$\theta'_{e,C'}$	0.4916
$\theta'_{F,e}$	0.5084
$\theta'_{i,F'}$	1.6758

※1 Refractive Indices of the wavelength nm can be calculated from 326 to 1129 nm by this constant.
Use the appended list of the constants to calculate 1129-2325nm.

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0054
$\Delta \theta_{C,A'}$	0.0017
$\Delta \theta_{g,d}$	-0.0034
$\Delta \theta_{g,F}$	-0.0026
$\Delta \theta_{i,g}$	-0.0064

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	591 *
Yield Point At (°C)	640 *
Softening Point SP (°C)	697
Expansion Coefficients (-30~+70°C)	60 *
α (10^{-7} K^{-1}) (+100~+300°C)	74 *
Thermal Conductivity λ W/(m·K)	0.991

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	$\Delta n / \Delta T$ relative (10^{-6} K^{-1})							
	t	C'	He-Ne	D	e	F'	g	i
-40~-20	3.2	3.4	3.4	3.5	3.7	3.9	4.2	4.9
-20~ 0	3.2	3.5	3.5	3.6	3.8	4.0	4.3	5.0
0~20	3.3	3.6	3.6	3.7	3.9	4.2	4.4	5.2
20~40	3.3	3.7	3.7	3.9	4.0	4.3	4.6	5.4
40~60	3.4	3.8	3.8	4.0	4.1	4.4	4.7	5.6
60~80	3.5	3.9	3.9	4.1	4.2	4.5	4.9	5.7

Coloring			
λ_{90}	320	λ_5	285
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	311	$\lambda_{0.05}$	288

CCI		
B	G	R
0.00	0.01	0.01

Internal Transmittance		
$\lambda(\text{nm})$	τ 10mm	τ 25mm
240		
250		
260		
270		
280		
290	0.11	
300	0.50	0.17
310	0.79	0.56
320	0.920	0.81
330	0.966	0.918
340	0.984	0.960
350	0.991	0.978
360	0.994	0.986
365	0.996	0.990
370	0.996	0.991
380	0.997	0.993
390	0.998	0.995
400	0.998	0.996
420	0.999	0.997
440	0.999	0.997
460	0.999	0.997
480	0.999	0.998
500	0.999	0.998
550	0.999	0.998
600	0.999	0.998
650	0.999	0.998
700	0.999	0.998
800	0.999	0.998
900	0.999	0.997
1000	0.997	0.993
1200	0.997	0.993
1400	0.985	0.963
1600	0.993	0.982
1800	0.986	0.966
2000	0.973	0.934
2200	0.904	0.77
2400	0.82	0.61

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.08
Specific Gravity d	3.23
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.