

BAL15Y

Code(d) **557587**

Code(e) **559585**

Refractive Index n_d	1.55671 1.556711	Abbe Number ν_d	58.68	Dispersion n_F-n_C	0.009488
Refractive Index n_e	1.558973	Abbe Number ν_e	58.41	Dispersion $n_F-n_{C'}$	0.009569

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.52907
n_{1970}	1.97009	1.53423
n_{1530}	1.52958	1.53972
n_{1129}	1.12864	1.54449
n_t	1.01398	1.54604
n_s	0.85211	1.54872
$n_{A'}$	0.76819	1.55053
n_r	0.70652	1.55218
n_C	0.65627	1.55383
$n_{C'}$	0.64385	1.55429
$n_{\text{He-Ne}}$	0.6328	1.55471
n_D	0.58929	1.55663
n_d	0.58756	1.55671
n_e	0.54607	1.55897
n_F	0.48613	1.56331
$n_{F'}$	0.47999	1.56385
$n_{\text{He-Cd}}$	0.44157	1.56779
n_g	0.435835	1.56848
n_h	0.404656	1.57277
n_i	0.365015	1.58012
n_{334}	0.334148	1.58807
n_{326}	0.326106	1.59060

Constants of Dispersion Formula	
A_1	1.28348331E+00
A_2	1.02800765E-01
A_3	4.04609885E-01
B_1	7.90900515E-03
B_2	3.05971274E-02
B_3	4.65268356E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1~2
Acid Resistance(Surface) Group SR	1.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	78.3
Rigidity Modulus G (GPa)	31.7
Poisson's Ratio σ	0.236
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	118

Partial Dispersions	
n_C-n_t	0.007785
$n_C-n_{A'}$	0.003296
n_d-n_C	0.002885
n_e-n_C	0.005147
n_g-n_d	0.011768
n_g-n_F	0.005165
n_h-n_g	0.004295
n_i-n_g	0.011636
n_C-n_t	0.008244
$n_e-n_{C'}$	0.004688
$n_{F'}-n_e$	0.004881
$n_i-n_{F'}$	0.016261

Relative Partial Dispersions	
$\theta_{C,t}$	0.8205
$\theta_{C,A'}$	0.3474
$\theta_{d,C}$	0.3041
$\theta_{e,C}$	0.5425
$\theta_{g,d}$	1.2403
$\theta_{g,F}$	0.5444
$\theta_{h,g}$	0.4527
$\theta_{i,g}$	1.2264
$\theta'_{C,t}$	0.8615
$\theta'_{e,C'}$	0.4899
$\theta'_{F',e}$	0.5101
$\theta'_{i,F'}$	1.6993

※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"	
$\Delta\theta_{C,t}$	-0.0015
$\Delta\theta_{C,A'}$	0.0004
$\Delta\theta_{g,d}$	-0.0026
$\Delta\theta_{g,F}$	-0.0021
$\Delta\theta_{i,g}$	-0.0073

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	509 *
Yield Point At (°C)	563 *
Softening Point SP (°C)	642
Expansion Coefficients (-30~+70°C)	75 *
α (10^{-7}K^{-1}) (+100~+300°C)	92 *
Thermal Conductivity λ W/(m·K)	1.00

Coloring			
λ_{80}	325	λ_5	295
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	318	$\lambda_{0.05}$	297

CCI		
B	G	R
0.00	0.04	0.02

Internal Transmittance		
$\lambda(\text{nm})$	τ 10mm	τ 25mm
240		
250		
260		
270		
280		
290		
300	0.17	0.01
310	0.59	0.27
320	0.84	0.65
330	0.937	0.85
340	0.971	0.929
350	0.985	0.963
360	0.992	0.979
365	0.994	0.984
370	0.995	0.988
380	0.996	0.990
390	0.997	0.993
400	0.998	0.994
420	0.998	0.995
440	0.998	0.995
460	0.998	0.996
480	0.998	0.996
500	0.999	0.997
550	0.999	0.997
600	0.999	0.997
650	0.998	0.996
700	0.999	0.997
800	0.999	0.997
900	0.998	0.995
1000	0.996	0.990
1200	0.995	0.988
1400	0.989	0.972
1600	0.992	0.980
1800	0.984	0.961
2000	0.972	0.932
2200	0.927	0.82
2400	0.89	0.75

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁶ Pa)	
Specific Gravity d	2.90
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.

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	2.2	2.5	2.5	2.6	2.8	3.0	3.3	4.2
-20~ 0	2.2	2.5	2.6	2.7	2.8	3.1	3.5	4.3
0~20	2.3	2.6	2.6	2.8	2.9	3.2	3.6	4.5
20~40	2.4	2.7	2.7	2.8	3.0	3.3	3.7	4.6
40~60	2.4	2.8	2.8	2.9	3.1	3.4	3.8	4.8
60~80	2.4	2.8	2.9	3.0	3.1	3.5	3.9	4.9