

S-BAM12

Code(d) **639449**

Code(e) **643446**

Refractive Index n_d	1.63930 1.639300	Abbe Number ν_d	44.87	Dispersion n_F-n_C	0.014247
Refractive Index n_e	1.642684	Abbe Number ν_e	44.59	Dispersion $n_F-n_{C'}$	0.014414

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.60480
n_{1970}	1.97009	1.61040
n_{1530}	1.52958	1.61653
n_{1129}	1.12864	1.62223
n_t	1.01398	1.62422
n_s	0.85211	1.62781
$n_{A'}$	0.76819	1.63033
n_r	0.70652	1.63268
n_C	0.65627	1.63506
$n_{C'}$	0.64385	1.63573
$n_{\text{He-Ne}}$	0.6328	1.63635
n_D	0.58929	1.63917
n_d	0.58756	1.63930
n_e	0.54607	1.64268
n_F	0.48613	1.64930
$n_{F'}$	0.47999	1.65014
$n_{\text{He-Cd}}$	0.44157	1.65631
n_g	0.435835	1.65740
n_h	0.404656	1.66433
n_i	0.365015	1.67665

Constants of Dispersion Formula	
A_1	1.50161605E+00
A_2	1.26987445E-01
A_3	1.43544052E+00
B_1	9.40761826E-03
B_2	4.72602195E-02
B_3	1.41666499E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	3.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	90.4
Rigidity Modulus G (GPa)	36.1
Poisson's Ratio σ	0.253
Knoop Hardness Hk(Class)	570 6
Abrasion Aa	154

Partial Dispersions	
n_C-n_t	0.010836
$n_C-n_{A'}$	0.004725
n_d-n_C	0.004243
n_e-n_C	0.007627
n_g-n_d	0.018101
n_g-n_F	0.008097
n_h-n_g	0.006929
n_i-n_g	0.019244
n_C-n_t	0.011505
$n_e-n_{C'}$	0.006958
$n_{F'}-n_e$	0.007456
$n_i-n_{F'}$	0.026505

Relative Partial Dispersions	
$\theta_{C,t}$	0.7606
$\theta_{C,A'}$	0.3316
$\theta_{d,C}$	0.2978
$\theta_{e,C}$	0.5353
$\theta_{g,d}$	1.2705
$\theta_{g,F}$	0.5683
$\theta_{h,g}$	0.4863
$\theta_{i,g}$	1.3507
$\theta'_{C,t}$	0.7982
$\theta'_{e,C'}$	0.4827
$\theta'_{F',e}$	0.5173
$\theta'_{i,F'}$	1.8388

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0034
$\Delta\theta_{C,A'}$	0.0014
$\Delta\theta_{g,d}$	-0.0010
$\Delta\theta_{g,F}$	-0.0006
$\Delta\theta_{i,g}$	0.0014

Thermal Properties	
Strain Point StP (°C)	565
Annealing Point AP (°C)	592
Transformation Temperature Tg (°C)	608
Yield Point At (°C)	645
Softening Point SP (°C)	717
Expansion Coefficients (-30~+70°C)	76
α (10^{-7}K^{-1}) (+100~+300°C)	91
Thermal Conductivity λ W/(m·K)	0.954

Coloring			
λ_{80}	385	λ_5	345
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	374	$\lambda_{0.05}$	348

CCI		
B	G	R
0.00	0.93	0.93

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.13
360	0.49
370	0.75
380	0.87
390	0.928
400	0.955
420	0.977
440	0.983
460	0.987
480	0.990
500	0.993
550	0.997
600	0.996
650	0.996
700	0.997
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.992
1600	0.995
1800	0.987
2000	0.976
2200	0.932
2400	0.86

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
-40~-20	2.3	2.6	2.7	2.8	3.0	3.5	4.1
-20~ 0	2.3	2.7	2.7	2.9	3.1	3.6	4.2
0~20	2.3	2.7	2.8	3.0	3.2	3.7	4.3
20~40	2.4	2.8	2.8	3.0	3.3	3.8	4.5
40~60	2.4	2.8	2.9	3.1	3.3	3.9	4.6
60~80	2.4	2.9	2.9	3.1	3.4	4.0	4.7

Other Properties	
Photoelastic Constant β nm/(cm \cdot 10 5 Pa)	2.30
Specific Gravity d	3.18
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.