

# S-BSM16

Code(d) **620603**

Code(e) **623601**

Refractive Index $n_d$	<b>1.62041</b> 1.620411	Abbe Number $\nu_d$	<b>60.29</b>	Dispersion $n_F-n_C$	<b>0.010290</b>
Refractive Index $n_e$	1.622865	Abbe Number $\nu_e$	60.03	Dispersion $n_F-n_{C'}$	0.010376

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.58957
$n_{1970}$	1.97009	1.59545
$n_{1530}$	1.52958	1.60168
$n_{1129}$	1.12864	1.60702
$n_t$	1.01398	1.60874
$n_s$	0.85211	1.61170
$n_{A'}$	0.76819	1.61368
$n_r$	0.70652	1.61549
$n_C$	0.65627	1.61728
$n_{C'}$	0.64385	1.61778
$n_{\text{He-Ne}}$	0.6328	1.61824
$n_D$	0.58929	1.62032
$n_d$	0.58756	1.62041
$n_e$	0.54607	1.62287
$n_F$	0.48613	1.62757
$n_{F'}$	0.47999	1.62815
$n_{\text{He-Cd}}$	0.44157	1.63241
$n_g$	0.435835	1.63315
$n_h$	0.404656	1.63778
$n_i$	0.365015	1.64567

Constants of Dispersion Formula	
$A_1$	1.14490383E+00
$A_2$	4.39563911E-01
$A_3$	1.27688079E+00
$B_1$	1.37034916E-02
$B_2$	-1.86514205E-03
$B_3$	1.19535585E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	5
Weathering Resistance(Surface) Group W(S)	2~3
Acid Resistance(Surface) Group SR	53.2
Phosphate Resistance PR	4.2

Mechanical Properties	
Young's Modulus E (GPa)	87.8
Rigidity Modulus G (GPa)	34.8
Poisson's Ratio $\sigma$	0.262
Knoop Hardness Hk(Class)	570   6
Abrasion Aa	155

Partial Dispersions	
$n_C-n_t$	0.008531
$n_C-n_{A'}$	0.003595
$n_d-n_C$	0.003135
$n_e-n_C$	0.005589
$n_g-n_d$	0.012739
$n_g-n_F$	0.005584
$n_h-n_g$	0.004632
$n_i-n_g$	0.012520
$n_C-n_t$	0.009030
$n_e-n_{C'}$	0.005090
$n_{F'}-n_e$	0.005286
$n_i-n_{F'}$	0.017519

Relative Partial Dispersions	
$\theta_{C,t}$	0.8291
$\theta_{C,A'}$	0.3494
$\theta_{d,C}$	0.3047
$\theta_{e,C}$	0.5431
$\theta_{g,d}$	1.2380
$\theta_{g,F}$	0.5427
$\theta_{h,g}$	0.4501
$\theta_{i,g}$	1.2167
$\theta'_{C,t}$	0.8703
$\theta'_{e,C'}$	0.4906
$\theta'_{F',e}$	0.5094
$\theta'_{i,F'}$	1.6884

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0005
$\Delta\theta_{C,A'}$	0.0004
$\Delta\theta_{g,d}$	-0.0015
$\Delta\theta_{g,F}$	-0.0012
$\Delta\theta_{i,g}$	-0.0035

Thermal Properties	
Strain Point StP (°C)	606
Annealing Point AP (°C)	634
Transformation Temperature Tg (°C)	657
Yield Point At (°C)	689
Softening Point SP (°C)	738
Expansion Coefficients (-30~+70°C)	67
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	76
Thermal Conductivity $\lambda$ W/(m·K)	0.835

Coloring			
$\lambda_{80}$	350	$\lambda_5$	305
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	346	$\lambda_{0.05}$	312

CCI		
B	G	R
0.00	0.28	0.23

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	0.01
320	0.18
330	0.49
340	0.72
350	0.85
360	0.924
370	0.959
380	0.976
390	0.984
400	0.989
420	0.992
440	0.993
460	0.994
480	0.996
500	0.997
550	0.999
600	0.998
650	0.997
700	0.998
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.992
1600	0.995
1800	0.987
2000	0.972
2200	0.911
2400	0.79

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative ( $10^{-6} \text{K}^{-1}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.2	1.4	1.5	1.6	1.7	1.9	2.2
-20~ 0	1.2	1.5	1.6	1.7	1.8	2.1	2.3
0~20	1.3	1.6	1.6	1.8	1.9	2.2	2.5
20~40	1.4	1.7	1.7	1.9	2.0	2.3	2.6
40~60	1.4	1.8	1.8	2.0	2.1	2.4	2.7
60~80	1.6	1.9	1.9	2.1	2.2	2.5	2.9

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	1.81
Specific Gravity d	3.59
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.