

# S-BSM15

Code(d) **623582**

Code(e) **626579**

Refractive Index $n_d$	<b>1.62299</b> 1.622992	Abbe Number $\nu_d$	<b>58.16</b>	Dispersion $n_F-n_C$	<b>0.010711</b>
Refractive Index $n_e$	1.625545	Abbe Number $\nu_e$	57.89	Dispersion $n_F-n_{C'}$	0.010805

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.59236
$n_{1970}$	1.97009	1.59797
$n_{1530}$	1.52958	1.60399
$n_{1129}$	1.12864	1.60927
$n_t$	1.01398	1.61100
$n_s$	0.85211	1.61399
$n_{A'}$	0.76819	1.61603
$n_r$	0.70652	1.61789
$n_C$	0.65627	1.61974
$n_{C'}$	0.64385	1.62026
$n_{\text{He-Ne}}$	0.6328	1.62074
$n_D$	0.58929	1.62290
$n_d$	0.58756	1.62299
$n_e$	0.54607	1.62555
$n_F$	0.48613	1.63045
$n_{F'}$	0.47999	1.63106
$n_{\text{He-Cd}}$	0.44157	1.63552
$n_g$	0.435835	1.63630
$n_h$	0.404656	1.64116
$n_i$	0.365015	1.64948

Constants of Dispersion Formula	
$A_1$	9.53128328E-01
$A_2$	6.37613977E-01
$A_3$	1.65245647E+00
$B_1$	3.87638985E-03
$B_2$	1.85094632E-02
$B_3$	1.59442367E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2~3
Acid Resistance(Surface) Group SR	52.2
Phosphate Resistance PR	3.2

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	854
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	338
Poisson's Ratio $\sigma$	0.265
Knoop Hardness Hk[Class]	560   6
Abrasion Aa	150
Photoelastic Constant $\beta$ nm/(cm $\cdot$ 10 $^5$ Pa)	1.80

Partial Dispersions	
$n_C-n_t$	0.008741
$n_C-n_{A'}$	0.003709
$n_d-n_C$	0.003253
$n_e-n_C$	0.005806
$n_g-n_d$	0.013304
$n_g-n_F$	0.005846
$n_h-n_g$	0.004866
$n_i-n_g$	0.013186
$n_C-n_t$	0.009259
$n_e-n_{C'}$	0.005288
$n_F-n_e$	0.005517
$n_i-n_{F'}$	0.018420

Relative Partial Dispersions	
$\theta_{C,t}$	0.8161
$\theta_{C,A'}$	0.3463
$\theta_{d,C}$	0.3037
$\theta_{e,C}$	0.5421
$\theta_{g,d}$	1.2421
$\theta_{g,F}$	0.5458
$\theta_{h,g}$	0.4543
$\theta_{i,g}$	1.2311
$\theta'_{C,t}$	0.8569
$\theta'_{e,C'}$	0.4894
$\theta'_{F,e}$	0.5106
$\theta'_{i,F'}$	1.7048

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0035
$\Delta\theta_{C,A'}$	-0.0001
$\Delta\theta_{g,d}$	-0.0018
$\Delta\theta_{g,F}$	-0.0016
$\Delta\theta_{i,g}$	-0.0069

Thermal Properties	
Strain Point StP (°C)	615
Annealing Point AP (°C)	639
Transformation Temperature Tg (°C)	658
Yield Point At (°C)	685
Softening Point SP (°C)	746
Expansion Coefficients (-30~+70°C)	65
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	78
Thermal Conductivity $\lambda$ W/(m·K)	0.845

Coloring			
$\lambda_{80}$	360	$\lambda_5$	320
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	357	$\lambda_{0.05}$	327

CCI		
B	G	R
0.00	0.32	0.30

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	0.13
340	0.44
350	0.70
360	0.85
370	0.926
380	0.959
390	0.976
400	0.985
420	0.991
440	0.992
460	0.994
480	0.995
500	0.997
550	0.998
600	0.997
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.991
1600	0.994
1800	0.987
2000	0.973
2200	0.918
2400	0.81

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.3	1.6	1.6	1.7	1.8	2.1	2.4
-20~ 0	1.4	1.7	1.7	1.8	1.9	2.2	2.5
0~20	1.4	1.8	1.8	1.9	2.0	2.4	2.7
20~40	1.5	1.9	1.9	2.0	2.2	2.5	2.8
40~60	1.6	2.0	2.0	2.1	2.3	2.6	3.0
60~80	1.6	2.1	2.1	2.2	2.4	2.8	3.1

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.60
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.