

S-BSM15

Code(d) **623582**

Code(e) **626579**

Refractive Index n_d	1.62299 1.622992	Abbe Number v_d	58.2 58.16	Dispersion n_F-n_C	0.01071 0.010711
Refractive Index n_e	1.625545	Abbe Number v_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

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

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.60
Remarks	

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

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
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	78
Thermal Conductivity k (W/m-K)	0.845

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	854
Rigidity Modulus G (10^8N/m^2)	338
Poisson's Ratio σ	0.265
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	133
Photoelastic Constant β (nm/cm/ 10^5Pa)	1.80

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	52.2
Phosphate Resistance PR	3.2

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

Coloring			
λ_{80}	36	λ_5	32
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
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)	dn/dt 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