

S-BSM10

Code(d) **623570**

Code(e) **625568**

Refractive Index n_d	1.62280 1.622799	Abbe Number v_d	57.0 57.05	Dispersion n_F-n_C	0.01092 0.010916
Refractive Index n_e	1.625401	Abbe Number v_e	56.78	Dispersion $n_F'-n_C'$	0.011014

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.59271
n_{1970}	1.97009	1.59809
n_{1530}	1.52958	1.60386
n_{1129}	1.12864	1.60898
n_t	1.01398	1.61069
n_s	0.85211	1.61368
$n_{A'}$	0.76819	1.61573
n_r	0.70652	1.61761
n_C	0.65627	1.61949
$n_{C'}$	0.64385	1.62001
$n_{\text{He-Ne}}$	0.6328	1.62051
n_D	0.58929	1.62270
n_d	0.58756	1.62280
n_e	0.54607	1.62540
n_F	0.48613	1.63041
$n_{F'}$	0.47999	1.63103
$n_{\text{He-Cd}}$	0.44157	1.63558
n_g	0.435835	1.63637
n_h	0.404656	1.64133
n_i	0.365015	1.64980

Partial Dispersions	
n_C-n_t	0.008800
$n_C-n_{A'}$	0.003759
n_d-n_C	0.003310
n_e-n_C	0.005912
n_g-n_d	0.013570
n_g-n_F	0.005964
n_h-n_g	0.004960
n_i-n_g	0.013428
n_C-n_t	0.009326
$n_e-n_{C'}$	0.005386
$n_{F'-n_e}$	0.005628
$n_i-n_{F'}$	0.018768

Relative Partial Dispersions	
$\theta_{C,t}$	0.8062
$\theta_{C,A'}$	0.3444
$\theta_{d,C}$	0.3032
$\theta_{e,C}$	0.5416
$\theta_{g,d}$	1.2431
$\theta_{g,F}$	0.5464
$\theta_{h,g}$	0.4544
$\theta_{i,g}$	1.2301
$\theta'_{C,t}$	0.8467
$\theta'_{e,C'}$	0.4890
$\theta'_{F',e}$	0.5110
$\theta'_{i,F}$	1.7040

Thermal Properties	
Strain Point StP (°C)	622
Annealing Point AP (°C)	650
Transformation Temperature Tg (°C)	668
Yield Point At (°C)	709
Softening Point SP (°C)	773
Expansion Coefficients (-30~+70°C)	65
α (10 ⁻⁷ /°C) (+100~+300°C)	76
Thermal Conductivity k (W/m·K)	0.822

Coloring			
λ_{80}	35	λ_5	31
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	0.08
320	0.31
330	0.57
340	0.75
350	0.86
360	0.929
370	0.962
380	0.977
390	0.986
400	0.991
420	0.994
440	0.995
460	0.996
480	0.997
500	0.998
550	0.998
600	0.998
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.997
1200	0.997
1400	0.990
1600	0.993
1800	0.985
2000	0.971
2200	0.913
2400	0.82

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0082
$\Delta\theta_{C,A'}$	-0.0006
$\Delta\theta_{g,d}$	-0.0031
$\Delta\theta_{g,F}$	-0.0028
$\Delta\theta_{i,g}$	-0.0172

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	835
Rigidity Modulus G (10 ⁸ N/m ²)	330
Poisson's Ratio σ	0.266
Knoop Hardness Hk[Class]	550 6
Abrasion Aa	142
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	1.88

Constants of Dispersion Formula	
A ₁	9.45443081E-01
A ₂	6.43237376E-01
A ₃	1.17752968E+00
B ₁	1.57263798E-02
B ₂	1.61924066E-03
B ₃	1.21361748E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	1.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.60
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 ⁻⁶ /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.0	2.4	2.4	2.5	2.6	3.0	3.3
-20~0	2.1	2.5	2.5	2.6	2.7	3.1	3.4
0~20	2.2	2.6	2.6	2.7	2.8	3.2	3.5
20~40	2.2	2.6	2.7	2.8	2.9	3.3	3.6
40~60	2.3	2.7	2.8	2.9	3.0	3.4	3.8
60~80	2.4	2.8	2.8	3.0	3.1	3.5	3.9