

S-BSM 4

Code(d) **613587**

Code(e) **615584**

Refractive Index n_d	1.61272 1.612716	Abbe Number v_d	58.7 58.72	Dispersion n_F-n_C	0.01043 0.010435
Refractive Index n_e	1.615204	Abbe Number v_e	58.45	Dispersion $n_F'-n_C'$	0.010526

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.58338
n_{1970}	1.97009	1.58871
n_{1530}	1.52958	1.59440
n_{1129}	1.12864	1.59941
n_t	1.01398	1.60107
n_s	0.85211	1.60396
$n_{A'}$	0.76819	1.60594
n_r	0.70652	1.60775
n_C	0.65627	1.60955
$n_{C'}$	0.64385	1.61005
$n_{\text{He-Ne}}$	0.6328	1.61052
n_D	0.58929	1.61262
n_d	0.58756	1.61272
n_e	0.54607	1.61520
n_F	0.48613	1.61998
$n_{F'}$	0.47999	1.62058
$n_{\text{He-Cd}}$	0.44157	1.62491
n_g	0.435835	1.62567
n_h	0.404656	1.63039
n_i	0.365015	1.63845

Partial Dispersions	
n_C-n_t	0.008474
$n_C-n_{A'}$	0.003609
n_d-n_C	0.003169
n_e-n_C	0.005657
n_g-n_d	0.012952
n_g-n_F	0.005686
n_h-n_g	0.004723
n_i-n_g	0.012778
n_C-n_t	0.008978
$n_e-n_{C'}$	0.005153
$n_{F'-n_e}$	0.005373
$n_i-n_{F'}$	0.017869

Relative Partial Dispersions	
$\theta_{C,t}$	0.8121
$\theta_{C,A'}$	0.3459
$\theta_{d,C}$	0.3037
$\theta_{e,C}$	0.5421
$\theta_{g,d}$	1.2412
$\theta_{g,F}$	0.5449
$\theta_{h,g}$	0.4526
$\theta_{i,g}$	1.2245
$\theta'_{C,t}$	0.8529
$\theta'_{e,C'}$	0.4895
$\theta'_{F',e}$	0.5105
$\theta'_{i,F}$	1.6976

Thermal Properties	
Strain Point StP (°C)	613
Annealing Point AP (°C)	643
Transformation Temperature Tg (°C)	660
Yield Point At (°C)	694
Softening Point SP (°C)	757
Expansion Coefficients (-30~+70°C)	67
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	76
Thermal Conductivity k (W/m·K)	0.836

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

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	0.04
320	0.24
330	0.52
340	0.73
350	0.85
360	0.924
370	0.960
380	0.977
390	0.985
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	0.998
700	0.998
800	0.998
900	0.997
1000	0.997
1200	0.997
1400	0.990
1600	0.994
1800	0.985
2000	0.971
2200	0.911
2400	0.82

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0101
$\Delta\theta_{C,A'}$	-0.0012
$\Delta\theta_{g,d}$	-0.0016
$\Delta\theta_{g,F}$	-0.0016
$\Delta\theta_{i,g}$	-0.0088

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	816
Rigidity Modulus G (10^8N/m^2)	322
Poisson's Ratio σ	0.265
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	142
Photoelastic Constant β (nm/cm/ 10^5Pa)	1.77

Constants of Dispersion Formula	
A ₁	9.62443080E-01
A ₂	5.95939234E-01
A ₃	1.10558352E+00
B ₁	4.68062141E-03
B ₂	1.78772082E-02
B ₃	1.15896432E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1 ~ 2
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	2.2

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.57
Remarks	

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	1.8	2.0	2.0	2.1	2.2	2.5	2.8
-20~ 0	1.9	2.1	2.1	2.2	2.3	2.6	2.9
0~20	1.9	2.2	2.2	2.3	2.4	2.8	3.1
20~40	2.0	2.3	2.3	2.4	2.6	2.9	3.2
40~60	2.0	2.3	2.4	2.5	2.7	3.0	3.3
60~80	2.1	2.4	2.5	2.6	2.8	3.1	3.5