

S-BSM9

Code(d) **614550**

Code(e) **617547**

Refractive Index n_d	1.61405 1.614047	Abbe Number v_d	55.0 54.99	Dispersion n_F-n_C	0.01117 0.011167
Refractive Index n_e	1.616707	Abbe Number v_e	54.70	Dispersion n_F-n_C	0.011274

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.58406
n_{1970}	1.97009	1.58932
n_{1530}	1.52958	1.59499
n_{1129}	1.12864	1.60007
n_t	1.01398	1.60177
n_s	0.85211	1.60478
$n_{A'}$	0.76819	1.60686
n_r	0.70652	1.60876
n_C	0.65627	1.61067
$n_{C'}$	0.64385	1.61121
$n_{\text{He-Ne}}$	0.6328	1.61171
n_D	0.58929	1.61395
n_d	0.58756	1.61405
n_e	0.54607	1.61671
n_F	0.48613	1.62184
$n_{F'}$	0.47999	1.62248
$n_{\text{He-Cd}}$	0.44157	1.62717
n_g	0.435835	1.62799
n_h	0.404656	1.63314
n_i	0.365015	1.64200

Partial Dispersions	
n_C-n_t	0.008899
$n_C-n_{A'}$	0.003817
n_d-n_C	0.003374
n_e-n_C	0.006034
n_g-n_d	0.013944
n_g-n_F	0.006151
n_h-n_g	0.005147
n_i-n_g	0.014012
n_C-n_t	0.009434
$n_e-n_{C'}$	0.005499
$n_{F'-n_e}$	0.005775
$n_i-n_{F'}$	0.019521

Relative Partial Dispersions	
$\theta_{C,t}$	0.7969
$\theta_{C,A'}$	0.3418
$\theta_{d,C}$	0.3021
$\theta_{e,C}$	0.5403
$\theta_{g,d}$	1.2487
$\theta_{g,F}$	0.5508
$\theta_{h,g}$	0.4609
$\theta_{i,g}$	1.2548
$\theta'_{C,t}$	0.8368
$\theta'_{e,C'}$	0.4878
$\theta'_{F',e}$	0.5122
$\theta'_{i,F}$	1.7315

Thermal Properties	
Strain Point StP (°C)	633
Annealing Point AP (°C)	662
Transformation Temperature Tg (°C)	679
Yield Point At (°C)	723
Softening Point SP (°C)	797
Expansion Coefficients (-30~+70°C)	64
α (10 ⁻⁷ /°C) (+100~+300°C)	77
Thermal Conductivity k (W/m·K)	0.916

Coloring			
λ_{80}	37	λ_5	33
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	0.03
340	0.28
350	0.60
360	0.80
370	0.904
380	0.947
390	0.969
400	0.980
420	0.987
440	0.989
460	0.991
480	0.993
500	0.995
550	0.997
600	0.996
650	0.995
700	0.996
800	0.998
900	0.997
1000	0.995
1200	0.996
1400	0.992
1600	0.994
1800	0.989
2000	0.980
2200	0.940
2400	0.88

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0078
$\Delta\theta_{C,A'}$	-0.0007
$\Delta\theta_{g,d}$	-0.0018
$\Delta\theta_{g,F}$	-0.0017
$\Delta\theta_{i,g}$	-0.0098

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	865
Rigidity Modulus G (10 ⁸ N/m ²)	342
Poisson's Ratio σ	0.264
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	124
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	1.94

Constants of Dispersion Formula	
A ₁	1.37020077E+00
A ₂	1.89397267E-01
A ₃	1.24202324E+00
B ₁	7.57631457E-03
B ₂	3.00787515E-02
B ₃	1.31350111E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	4.2
Phosphate Resistance PR	1.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.22
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	2.8	3.2	3.3	3.4	3.5	3.9	4.2
-20~0	2.9	3.3	3.3	3.5	3.6	4.0	4.4
0~20	3.0	3.4	3.4	3.6	3.7	4.1	4.5
20~40	3.0	3.5	3.5	3.6	3.8	4.2	4.6
40~60	3.1	3.6	3.6	3.7	3.9	4.3	4.7
60~80	3.2	3.7	3.7	3.8	4.0	4.4	4.9