

# S-BSM22R

Code(d) **622532**

Code(e) **625529**

Refractive Index $n_d$	<b>1.62230</b> 1.622300	Abbe Number $v_d$	<b>(53.2)</b> 53.18	Dispersion $n_F-n_C$	<b>(0.0117)</b> 0.011701
Refractive Index $n_e$	1.625086	Abbe Number $v_e$	52.89	Dispersion $n_F-n_C$	0.011818

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.325420	1.59302
$n_{1970}$	1.970090	1.59784
$n_{1530}$	1.529580	1.60309
$n_{1129}$	1.128640	1.60796
$n_t$	1.013980	1.60965
$n_s$	0.852110	1.61269
$n_{A'}$	0.768190	1.61482
$n_r$	0.706520	1.61679
$n_C$	0.656270	<b>1.61878</b>
$n_{C'}$	0.643850	1.61933
$n_{\text{He-Ne}}$	0.632800	1.61986
$n_D$	0.589290	1.62220
$n_d$	0.587560	<b>1.62230</b>
$n_e$	0.546070	1.62509
$n_F$	0.486130	<b>1.63048</b>
$n_{F'}$	0.479990	1.63115
$n_{\text{He-Cd}}$	0.441570	1.63609
$n_g$	0.435835	<b>1.63696</b>
$n_h$	0.404656	1.64239
$n_i$	0.365015	-

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0165
$\Delta\theta_{C,A'}$	-0.0021
$\Delta\theta_{g,d}$	-0.0018
$\Delta\theta_{g,F}$	-0.0018
$\Delta\theta_{i,g}$	-

Constants of Dispersion Formula	
$A_1$	1.48053862E+00
$A_2$	1.02502508E-01
$A_3$	1.10949686E+00
$B_1$	8.92784117E-03
$B_2$	3.74827379E-02
$B_3$	1.2914740E+02

Other Properties	
Bubble Quality Group	
Specific Gravity	3.24
Remarks	

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	dn/dt relative (10 <sup>-6</sup> /°C)							
	t	C'	He-Ne	D	e	F'	g	
-40~20	1.6	2.0	2.1	2.2	2.4	2.8	3.2	
-20~ 0	1.5	1.9	2.0	2.1	2.3	2.7	3.2	
0~20	1.4	1.9	1.9	2.1	2.3	2.7	3.2	
20~40	1.4	1.9	1.9	2.1	2.3	2.7	3.2	
40~60	1.4	1.9	2.0	2.1	2.3	2.8	3.3	
60~80	1.5	2.1	2.1	2.3	2.5	3.0	3.5	

Partial Dispersions	
$n_C-n_t$	0.009123
$n_C-n_{A'}$	0.003957
$n_d-n_C$	0.003523
$n_e-n_C$	0.006309
$n_g-n_d$	0.014656
$n_g-n_F$	0.006478
$n_h-n_g$	0.005432
$n_i-n_g$	-
$n_C-n_t$	0.009681
$n_e-n_{C'}$	0.005751
$n_F-n_e$	0.006067
$n_i-n_{F'}$	-

Thermal Properties	
Strain Point StP (°C)	579
Annealing Point AP (°C)	609
Transformation Temperature Tg (°C)	619
Yield Point At (°C)	683
Softening Point SP (°C)	744
Expansion Coefficients (-30~+70°C)	89
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	96
Thermal Conductivity k (W/m·K)	0.87

Mechanical Properties	
Young's Modulus E (10 <sup>9</sup> N/m <sup>2</sup> )	877
Rigidity Modulus G (10 <sup>9</sup> N/m <sup>2</sup> )	345
Poisson's Ratio $\sigma$	0.271
Knoop Hardness Hk(Class)	570   6
Abrasion Aa	166
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	2.03

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	52.2
Phosphate Resistance PR	1.0

Relative Partial Dispersions	
$\theta_{C,t}$	0.7797
$\theta_{C,A'}$	0.3382
$\theta_{d,C}$	0.3011
$\theta_{e,C}$	0.5392
$\theta_{g,d}$	1.2525
$\theta_{g,F}$	0.5536
$\theta_{h,g}$	0.4642
$\theta_{i,g}$	-
$\theta'_{C,t}$	0.8192
$\theta'_{e,C'}$	0.4866
$\theta'_{F,e}$	0.5134
$\theta'_{i,F}$	-

Coloring			
$\lambda_{80}$	485	$\lambda_5$	410
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	
380	
390	
400	
420	0.275
440	0.579
460	0.797
480	0.890
500	0.926
550	0.957
600	0.970
650	0.980
700	0.987
800	0.995
900	0.997
1000	0.998
1200	0.999
1400	0.997
1600	0.997
1800	0.990
2000	0.979
2200	0.950
2400	0.872