

S-BSM71

Code(d) **649530**

Code(e) **651527**

Refractive Index n_d	1.64850 1.648498	Abbe Number ν_d	53.02	Dispersion n_F-n_C	0.012231
Refractive Index n_e	1.651410	Abbe Number ν_e	52.73	Dispersion n_F-n_C'	0.012353

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.61657
n_{1970}	1.97009	1.62205
n_{1530}	1.52958	1.62799
n_{1129}	1.12864	1.63336
n_t	1.01398	1.63518
n_s	0.85211	1.63842
$n_{A'}$	0.76819	1.64067
n_r	0.70652	1.64274
n_C	0.65627	1.64482
$n_{C'}$	0.64385	1.64540
$n_{\text{He-Ne}}$	0.6328	1.64595
n_D	0.58929	1.64839
n_d	0.58756	1.64850
n_e	0.54607	1.65141
n_F	0.48613	1.65705
$n_{F'}$	0.47999	1.65775
$n_{\text{He-Cd}}$	0.44157	1.66293
n_g	0.435835	1.66383
n_h	0.404656	1.66954
n_i	0.365015	1.67943

Constants of Dispersion Formula	
A_1	1.50847885E+00
A_2	1.58099826E-01
A_3	1.36815368E+00
B_1	8.12769076E-03
B_2	3.54200898E-02
B_3	1.36110038E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2~3
Acid Resistance(Surface) Group SR	53.2
Phosphate Resistance PR	4.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	862
Rigidity Modulus G (10^9N/m^2)	339
Poisson's Ratio σ	0.273
Knoop Hardness Hk[Class]	560 6
Abrasion Aa	170
Photoelastic Constant β nm/(cm · 10^5Pa)	1.81

Partial Dispersions	
n_C-n_t	0.009631
$n_C-n_{A'}$	0.004150
n_d-n_C	0.003683
n_e-n_C	0.006595
n_g-n_d	0.015333
n_g-n_F	0.006785
n_h-n_g	0.005706
n_i-n_g	0.015599
n_C-n_t	0.010215
$n_e-n_{C'}$	0.006011
n_F-n_e	0.006342
$n_i-n_{F'}$	0.021678

Relative Partial Dispersions	
$\theta_{C,t}$	0.7874
$\theta_{C,A'}$	0.3393
$\theta_{d,C}$	0.3011
$\theta_{e,C}$	0.5392
$\theta_{g,d}$	1.2536
$\theta_{g,F}$	0.5547
$\theta_{h,g}$	0.4665
$\theta_{i,g}$	1.2754
$\theta'_{C,t}$	0.8269
$\theta'_{e,C'}$	0.4866
$\theta'_{F,e}$	0.5134
$\theta'_{i,F'}$	1.7549

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0080
$\Delta\theta_{C,A'}$	-0.0008
$\Delta\theta_{g,d}$	-0.0010
$\Delta\theta_{g,F}$	-0.0010
$\Delta\theta_{i,g}$	-0.0057

Thermal Properties	
Strain Point StP (°C)	607
Annealing Point AP (°C)	635
Transformation Temperature Tg (°C)	651
Yield Point At (°C)	687
Softening Point SP (°C)	737
Expansion Coefficients (-30~+70°C)	71
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	83
Thermal Conductivity λ W/(m·K)	0.773

Coloring			
λ_{80}	375	λ_5	335
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	366	$\lambda_{0.05}$	337

CCI		
B	G	R
0.00	0.59	0.55

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.15
350	0.47
360	0.72
370	0.86
380	0.926
390	0.958
400	0.973
420	0.985
440	0.988
460	0.990
480	0.993
500	0.995
550	0.998
600	0.997
650	0.996
700	0.997
800	0.998
900	0.998
1000	0.997
1200	0.997
1400	0.993
1600	0.993
1800	0.985
2000	0.972
2200	0.925
2400	0.82

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.3	1.5	1.6	1.7	1.8	2.1	2.6
-20~ 0	1.2	1.6	1.6	1.8	1.9	2.3	2.7
0~20	1.3	1.8	1.8	1.9	2.1	2.5	3.0
20~40	1.4	2.0	2.0	2.1	2.3	2.8	3.2
40~60	1.5	2.2	2.2	2.4	2.6	3.1	3.5
60~80	1.6	2.5	2.5	2.7	2.9	3.5	3.9

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.74
Remarks	

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.