

S-BSM81

Code(d) **640601**

Code(e) **643599**

Refractive Index n_d	1.64000 1.639999	Abbe Number ν_d	60.08	Dispersion n_F-n_C	0.010653
Refractive Index n_e	1.642540	Abbe Number ν_e	59.88	Dispersion $n_F-n_{C'}$	0.010730

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.60385
n_{1970}	1.97009	1.61138
n_{1530}	1.52958	1.61917
n_{1129}	1.12864	1.62555
n_t	1.01398	1.62752
n_s	0.85211	1.63078
$n_{A'}$	0.76819	1.63293
n_r	0.70652	1.63484
n_C	0.65627	1.63673
$n_{C'}$	0.64385	1.63725
$n_{\text{He-Ne}}$	0.6328	1.63774
n_D	0.58929	1.63990
n_d	0.58756	1.64000
n_e	0.54607	1.64254
n_F	0.48613	1.64738
$n_{F'}$	0.47999	1.64798
$n_{\text{He-Cd}}$	0.44157	1.65235
n_g	0.435835	1.65310
n_h	0.404656	1.65783
n_i	0.365015	1.66586

Constants of Dispersion Formula	
A_1	9.96356844E-01
A_2	6.51392837E-01
A_3	1.22432622E+00
B_1	1.44821587E-02
B_2	1.54826389E-03
B_3	8.99818604E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	4
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	53.0
Phosphate Resistance PR	4.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	1057
Rigidity Modulus G (10^9N/m^2)	416
Poisson's Ratio σ	0.271
Knoop Hardness Hk[Class]	660 7
Abrasion Aa	81
Photoelastic Constant β nm/(cm · 10^5Pa)	2.00

Partial Dispersions	
n_C-n_t	0.009210
$n_C-n_{A'}$	0.003802
n_d-n_C	0.003271
n_e-n_C	0.005812
n_g-n_d	0.013103
n_g-n_F	0.005721
n_h-n_g	0.004730
n_i-n_g	0.012761
n_C-n_t	0.009734
$n_e-n_{C'}$	0.005288
n_F-n_e	0.005442
$n_i-n_{F'}$	0.017881

Relative Partial Dispersions	
$\theta_{C,t}$	0.8645
$\theta_{C,A'}$	0.3569
$\theta_{d,C}$	0.3070
$\theta_{e,C}$	0.5456
$\theta_{g,d}$	1.2300
$\theta_{g,F}$	0.5370
$\theta_{h,g}$	0.4440
$\theta_{i,g}$	1.1979
$\theta'_{C,t}$	0.9072
$\theta'_{e,C'}$	0.4928
$\theta'_{F,e}$	0.5072
$\theta'_{i,F'}$	1.6664

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0359
$\Delta\theta_{C,A'}$	0.0082
$\Delta\theta_{g,d}$	-0.0100
$\Delta\theta_{g,F}$	-0.0073
$\Delta\theta_{i,g}$	-0.0240

Thermal Properties	
Strain Point StP (°C)	604
Annealing Point AP (°C)	624
Transformation Temperature Tg (°C)	653
Yield Point At (°C)	679
Softening Point SP (°C)	721
Expansion Coefficients (-30~+70°C)	58
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	72
Thermal Conductivity λ W/(m·K)	1.00

Coloring			
λ_{80}	370	λ_5	305
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	358	$\lambda_{0.05}$	303

CCI		
B	G	R
0.00	0.55	0.49

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	0.01
300	0.03
310	0.10
320	0.21
330	0.38
340	0.56
350	0.71
360	0.82
370	0.89
380	0.934
390	0.957
400	0.970
420	0.981
440	0.985
460	0.989
480	0.992
500	0.995
550	0.995
600	0.992
650	0.993
700	0.995
800	0.997
900	0.997
1000	0.996
1200	0.996
1400	0.993
1600	0.994
1800	0.985
2000	0.961
2200	0.87
2400	0.61

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	2.8	3.1	3.1	3.3	3.3	3.6	3.8
-20~ 0	2.9	3.2	3.2	3.4	3.5	3.7	4.0
0~20	3.0	3.3	3.4	3.5	3.6	3.9	4.2
20~40	3.2	3.5	3.5	3.6	3.7	4.0	4.3
40~60	3.2	3.6	3.6	3.7	3.9	4.2	4.5
60~80	3.2	3.7	3.7	3.8	4.0	4.4	4.7

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.06
Remarks	

OHARA 17-04

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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.