

S-BSM18

Code(d) **639554**

Code(e) **641551**

Refractive Index n_d	1.63854 1.638539	Abbe Number ν_d	55.38	Dispersion n_F-n_C	0.011531
Refractive Index n_e	1.641287	Abbe Number ν_e	55.10	Dispersion $n_F-n_{C'}$	0.011638

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.60779
n_{1970}	1.97009	1.61314
n_{1530}	1.52958	1.61892
n_{1129}	1.12864	1.62411
n_t	1.01398	1.62586
n_s	0.85211	1.62896
$n_{A'}$	0.76819	1.63111
n_r	0.70652	1.63308
n_C	0.65627	1.63505
$n_{C'}$	0.64385	1.63560
$n_{\text{He-Ne}}$	0.6328	1.63612
n_D	0.58929	1.63844
n_d	0.58756	1.63854
n_e	0.54607	1.64129
n_F	0.48613	1.64658
$n_{F'}$	0.47999	1.64724
$n_{\text{He-Cd}}$	0.44157	1.65207
n_g	0.435835	1.65291
n_h	0.404656	1.65818
n_i	0.365015	1.66720

Constants of Dispersion Formula	
A_1	9.27886025E-01
A_2	7.08858526E-01
A_3	1.18610897E+00
B_1	4.17549199E-03
B_2	1.84691838E-02
B_3	1.22210416E+02

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	51.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	885
Rigidity Modulus G (10^9N/m^2)	349
Poisson's Ratio σ	0.268
Knoop Hardness Hk[Class]	570 6
Abrasion Aa	155
Photoelastic Constant β nm/(cm · 10^5Pa)	1.79

Partial Dispersions	
n_C-n_t	0.009188
$n_C-n_{A'}$	0.003946
n_d-n_C	0.003488
n_e-n_C	0.006236
n_g-n_d	0.014367
n_g-n_F	0.006324
n_h-n_g	0.005271
n_i-n_g	0.014291
n_C-n_t	0.009742
$n_e-n_{C'}$	0.005682
n_F-n_e	0.005956
$n_i-n_{F'}$	0.019954

Relative Partial Dispersions	
$\theta_{C,t}$	0.7968
$\theta_{C,A'}$	0.3422
$\theta_{d,C}$	0.3025
$\theta_{e,C}$	0.5408
$\theta_{g,d}$	1.2459
$\theta_{g,F}$	0.5484
$\theta_{h,g}$	0.4571
$\theta_{i,g}$	1.2394
$\theta'_{C,t}$	0.8371
$\theta'_{e,C'}$	0.4882
$\theta'_{F,e}$	0.5118
$\theta'_{i,F'}$	1.7146

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0097
$\Delta\theta_{C,A'}$	-0.0008
$\Delta\theta_{g,d}$	-0.0038
$\Delta\theta_{g,F}$	-0.0035
$\Delta\theta_{i,g}$	-0.0219

Thermal Properties	
Strain Point StP (°C)	567
Annealing Point AP (°C)	600
Transformation Temperature Tg (°C)	613
Yield Point At (°C)	655
Softening Point SP (°C)	717
Expansion Coefficients (-30~+70°C)	70
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	84
Thermal Conductivity λ W/(m·K)	0.815

Coloring			
λ_{80}	350	λ_5	305
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	345	$\lambda_{0.05}$	309

CCI		
B	G	R
0.00	0.21	0.22

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	0.08
320	0.31
330	0.57
340	0.75
350	0.86
360	0.929
370	0.961
380	0.977
390	0.985
400	0.990
420	0.993
440	0.994
460	0.995
480	0.996
500	0.997
550	0.998
600	0.998
650	0.998
700	0.998
800	0.998
900	0.998
1000	0.997
1200	0.997
1400	0.993
1600	0.994
1800	0.986
2000	0.973
2200	0.924
2400	0.84

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	1.8	2.2	2.3	2.4	2.5	2.9	3.2
-20~ 0	1.8	2.3	2.3	2.4	2.6	3.0	3.3
0~20	1.9	2.4	2.4	2.5	2.7	3.1	3.4
20~40	1.9	2.4	2.5	2.6	2.8	3.2	3.5
40~60	2.0	2.5	2.5	2.7	2.9	3.3	3.7
60~80	2.1	2.6	2.6	2.8	2.9	3.4	3.8

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.69
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.