

PBM 2Y

Code(d) **620363**

Code(e) **624360**

Refractive Index n_d	1.62004 1.620041	Abbe Number ν_d	36.27	Dispersion n_F-n_C	0.017095
Refractive Index n_e	1.624093	Abbe Number ν_e	36.01	Dispersion $n_F-n_{C'}$	0.017330

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.58471
n_{1970}	1.97009	1.58959
n_{1530}	1.52958	1.59510
n_{1129}	1.12864	1.60067
n_t	1.01398	1.60275
n_s	0.85211	1.60668
$n_{A'}$	0.76819	1.60953
n_r	0.70652	1.61225
n_C	0.65627	1.61502
$n_{C'}$	0.64385	1.61581
$n_{\text{He-Ne}}$	0.6328	1.61655
n_D	0.58929	1.61989
n_d	0.58756	1.62004
n_e	0.54607	1.62409
n_F	0.48613	1.63211
$n_{F'}$	0.47999	1.63314
$n_{\text{He-Cd}}$	0.44157	1.64072
n_g	0.435835	1.64207
n_h	0.404656	1.65071
n_i	0.365015	1.66635
n_{334}	0.334148	1.68482
n_{326}	0.326106	1.69111

Constants of Dispersion Formula	
A_1	1.39446503E+00
A_2	1.59230985E-01
A_3	2.45470216E-01
B_1	1.10571872E-02
B_2	5.07194882E-02
B_3	3.14440142E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	57.1
Rigidity Modulus G (GPa)	23.4
Poisson's Ratio σ	0.223
Knoop Hardness Hk[Class]	410 4
Abrasion Aa	169

Partial Dispersions	
n_C-n_t	0.012265
$n_C-n_{A'}$	0.005485
n_d-n_C	0.005022
n_e-n_C	0.009074
n_g-n_d	0.022030
n_g-n_F	0.009957
n_h-n_g	0.008640
n_i-n_g	0.024279
n_C-n_t	0.013052
$n_e-n_{C'}$	0.008287
$n_{F'}-n_e$	0.009043
$n_i-n_{F'}$	0.033214

Relative Partial Dispersions	
$\theta_{C,t}$	0.7175
$\theta_{C,A'}$	0.3209
$\theta_{d,C}$	0.2938
$\theta_{e,C}$	0.5308
$\theta_{g,d}$	1.2887
$\theta_{g,F}$	0.5825
$\theta_{h,g}$	0.5054
$\theta_{i,g}$	1.4202
$\theta'_{C,t}$	0.7531
$\theta'_{e,C'}$	0.4782
$\theta'_{F',e}$	0.5218
$\theta'_{i,F'}$	1.9166

※Refractive Indices of the wavelength nm can be calculated from 326 to 1129 nm by this constant. Use the appended list of the constants to calculate 1129-2325nm.

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0007
$\Delta\theta_{C,A'}$	0.0011
$\Delta\theta_{g,d}$	-0.0007
$\Delta\theta_{g,F}$	-0.0003
$\Delta\theta_{i,g}$	-0.0011

Thermal Properties	
Strain Point StP (°C)	385
Annealing Point AP (°C)	418
Transformation Temperature Tg (°C)	434 *
Yield Point At (°C)	489 *
Softening Point SP (°C)	580
Expansion Coefficients (-30~+70°C)	87 *
α ($10^{-7} K^{-1}$) (+100~+300°C)	101 *
Thermal Conductivity λ W/(m·K)	0.814

Coloring			
λ_{80}	345	λ_5	320
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	340	$\lambda_{0.05}$	320

CCI		
B	G	R
0.00	0.05	0.05

Internal Transmittance		
$\lambda(\text{nm})$	τ 10mm	τ 25mm
240		
250		
260		
270		
280		
290		
300		
310		
320	0.04	
330	0.44	0.12
340	0.81	0.59
350	0.944	0.86
360	0.980	0.951
365	0.986	0.965
370	0.991	0.978
380	0.995	0.987
390	0.996	0.991
400	0.997	0.993
420	0.998	0.995
440	0.998	0.995
460	0.998	0.996
480	0.998	0.996
500	0.999	0.997
550	0.999	0.998
600	0.999	0.998
650	0.999	0.997
700	0.999	0.998
800	0.999	0.998
900	0.999	0.998
1000	0.998	0.995
1200	0.998	0.995
1400	0.996	0.990
1600	0.994	0.985
1800	0.980	0.951
2000	0.962	0.908
2200	0.921	0.81
2400	0.89	0.75

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁶ Pa)	
Specific Gravity d	3.61
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.

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	$\Delta n / \Delta T$ relative ($10^{-6} K^{-1}$)							
	t	C'	He-Ne	D	e	F'	g	i
-40~-20	2.1	2.9	3.0	3.3	3.6	4.4	5.3	8.2
-20~ 0	2.3	3.1	3.1	3.5	3.8	4.6	5.5	8.6
0~20	2.5	3.3	3.3	3.6	4.0	4.8	5.8	8.9
20~40	2.5	3.4	3.5	3.8	4.2	5.1	6.0	9.3
40~60	2.7	3.6	3.7	4.0	4.4	5.3	6.3	9.6
60~80	2.9	3.8	3.8	4.2	4.6	5.5	6.6	10.0