PBM18Y

Code(d) **596387**
Code(e) **599385**

Refractive Index	n_d	**1.59551**	Abbe Number	ν_d	**38.77**	Dispersion	n_F-n_C	**0.015361**
		1.595509						
Refractive Index	n_e	1.599153	Abbe Number	ν_e	38.50	Dispersion	n_F-$n_{C'}$	0.015561

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.56207
n_{1970}	1.97009	1.56696
n_{1530}	1.52958	1.57243
n_{1129}	1.12864	1.57779
n_t	1.01398	1.57975
n_s	0.85211	1.58338
$n_{A'}$	0.76819	1.58599
n_r	0.70652	1.58846
n_C	0.65627	1.59097
$n_{C'}$	0.64385	1.59169
$n_{He\text{-}Ne}$	0.6328	1.59236
n_D	0.58929	1.59537
n_d	0.58756	1.59551
n_e	0.54607	1.59915
n_F	0.48613	1.60634
$n_{F'}$	0.47999	1.60725
$n_{He\text{-}Cd}$	0.44157	1.61400
n_g	0.435835	1.61520
n_h	0.404656	1.62284
n_i	0.365015	1.63656
n_{334}	0.334148	1.65255
n_{326}	0.326106	1.65795

Constants of Dispersion Formula	
A_1	1.34660215E+00
A_2	1.36322343E-01
A_3	1.83371587E-01
B_1	1.06313733E-02
B_2	4.91403013E-02
B_3	2.39154655E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2～3
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	2.0

Mechanical Properties		
Young's Modulus E (GPa)	59.8	
Rigidity Modulus G (GPa)	24.4	
Poisson's Ratio σ	0.223	
Knoop Hardness Hk[Class]	420	4
Abrasion Aa	138	

Partial Dispersions	
n_C-n_t	0.011228
n_C-$n_{A'}$	0.004982
n_d-n_C	0.004534
n_e-n_C	0.008178
n_g-n_d	0.019689
n_g-n_F	0.008862
n_h-n_g	0.007643
n_i-n_g	0.021360
n_C-n_t	0.011940
n_e-$n_{C'}$	0.007466
$n_{F'}$-n_e	0.008095
n_i-$n_{F'}$	0.029310

Relative Partial Dispersions	
$\theta_{C,t}$	0.7309
$\theta_{C,A'}$	0.3243
$\theta_{d,C}$	0.2952
$\theta_{e,C}$	0.5324
$\theta_{g,d}$	1.2818
$\theta_{g,F}$	0.5769
$\theta_{h,g}$	0.4976
$\theta_{i,g}$	1.3905
$\theta'_{C',t}$	0.7673
$\theta'_{e,C'}$	0.4798
$\theta'_{F',e}$	0.5202
$\theta'_{i,F'}$	1.8836

※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 Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0023
$\Delta\theta_{C,A'}$	0.0015
$\Delta\theta_{g,d}$	-0.0024
$\Delta\theta_{g,F}$	-0.0018
$\Delta\theta_{i,g}$	-0.0099

Thermal Properties		
Strain Point StP (℃)		377
Annealing Point AP (℃)		419
Transformation Temperature Tg (℃)		442 *
Yield Point At (℃)		485 *
Softening Point SP (℃)		565
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	89 *
	(+100~+300℃)	101 *
Thermal Conductivity λ W/(m·K)		0.865

Coloring			
λ_{80}	340	λ_5	315
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	335	$\lambda_{0.05}$	316

CCI		
B	G	R
0.00	0.02	0.02

Internal Transmittance		
λ(nm)	τ 10mm	τ 25mm
240		
250		
260		
270		
280		
290		
300		
310		
320	0.22	0.02
330	0.68	0.39
340	0.912	0.79
350	0.975	0.939
360	0.990	0.976
365	0.993	0.983
370	0.995	0.988
380	0.997	0.992
390	0.998	0.994
400	0.998	0.995
420	0.998	0.996
440	0.999	0.997
460	0.999	0.997
480	0.999	0.998
500	0.999	0.998
550	0.999	0.998
600	0.999	0.998
650	0.999	0.998
700	0.999	0.998
800	0.999	0.998
900	0.999	0.998
1000	0.998	0.996
1200	0.998	0.996
1400	0.996	0.990
1600	0.994	0.986
1800	0.979	0.948
2000	0.956	0.89
2200	0.907	0.78
2400	0.87	0.71

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	2.79
Specific Gravity d	3.37
Remarks	

Temperature Coefficients of Refractive Index								
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}K^{-1}$)							
	t	C'	He-Ne	D	e	F'	g	i
-40~-20	2.5	3.1	3.2	3.4	3.7	4.4	5.2	7.6
-20~ 0	2.5	3.3	3.3	3.5	3.9	4.6	5.4	7.9
0~20	2.6	3.4	3.4	3.7	4.0	4.7	5.5	8.1
20~40	2.7	3.5	3.5	3.8	4.1	4.9	5.7	8.4
40~60	2.8	3.6	3.6	3.9	4.2	5.0	5.9	8.7
60~80	2.8	3.7	3.7	4.0	4.3	5.2	6.1	8.9

OHARA 24-01

※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.