

# PBL1Y

Code(d) **548457**

Code(e) **551455**

Refractive Index $n_d$	<b>1.54814</b> 1.548141	Abbe Number $v_d$	<b>45.7</b> 45.73	Dispersion $n_F-n_C$	<b>0.01199</b> 0.011986
Refractive Index $n_e$	1.550989	Abbe Number $v_e$	45.45	Dispersion $n_F-n_{C'}$	0.012123

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.51892
$n_{1970}$	1.97009	1.52371
$n_{1530}$	1.52958	1.52892
$n_{1129}$	1.12864	1.53374
$n_t$	1.01398	1.53542
$n_s$	0.85211	1.53845
$n_{A'}$	0.76819	1.54058
$n_r$	0.70652	1.54256
$n_C$	0.65627	1.54456
$n_{C'}$	0.64385	1.54513
$n_{\text{He-Ne}}$	0.6328	1.54566
$n_D$	0.58929	1.54804
$n_d$	0.58756	1.54814
$n_e$	0.54607	1.55099
$n_F$	0.48613	1.55655
$n_{F'}$	0.47999	1.55725
$n_{\text{He-Cd}}$	0.44157	1.56242
$n_g$	0.435835	1.56333
$n_h$	0.404656	1.56911
$n_i$	0.365015	1.57931
$n_{334}$	0.334148	1.59092
$n_{326}$	0.326106	1.59476

Partial Dispersions	
$n_C-n_t$	0.009141
$n_C-n_{A'}$	0.003985
$n_d-n_C$	0.003576
$n_e-n_C$	0.006424
$n_g-n_d$	0.015189
$n_g-n_F$	0.006779
$n_h-n_g$	0.005775
$n_i-n_g$	0.015976
$n_C-n_t$	0.009705
$n_e-n_{C'}$	0.005860
$n_{F'-n_e}$	0.006263
$n_{F'-n_{F'}}$	0.022054

Relative Partial Dispersions	
$\theta_{C,t}$	0.7626
$\theta_{C,A'}$	0.3325
$\theta_{d,C}$	0.2983
$\theta_{e,C}$	0.5360
$\theta_{g,d}$	1.2672
$\theta_{g,F}$	0.5656
$\theta_{h,g}$	0.4818
$\theta_{i,g}$	1.3329
$\theta'_{C,t}$	0.8005
$\theta'_{e,C'}$	0.4834
$\theta'_{F',e}$	0.5166
$\theta'_{i,F}$	1.8192

Thermal Properties	
Strain Point StP (°C)	361
Annealing Point AP (°C)	396
Transformation Temperature Tg (°C)	406
Yield Point At (°C)	453
Softening Point SP (°C)	567
Expansion Coefficients (-30~+70°C)	93
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	106
Thermal Conductivity k (W/m-K)	0.951

Coloring			
$\lambda_{80}$	32	$\lambda_5$	30

Internal Transmittance		
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$	$\tau_{25\text{mm}}$
240		
250		
260		
270		
280		
290		
300		
310	0.29	0.04
320	0.80	0.57
330	0.954	0.88
340	0.988	0.970
350	0.995	0.988
360	0.997	0.993
365	0.997	0.994
370	0.998	0.995
380	0.998	0.996
390	0.999	0.997
400	0.999	0.998
420	0.999	0.998
440	0.999	0.998
460	0.999	0.998
480	0.999	0.998
500	0.999	0.999
550	0.999	0.999
600	0.999	0.999
650	0.999	0.999
700	0.999	0.999
800	0.999	0.999
900	0.999	0.999
1000	0.999	0.999
1200	0.999	0.999
1400	0.998	0.996
1600	0.996	0.991
1800	0.983	0.958
2000	0.960	0.903
2200	0.919	0.81
2400	0.88	0.73

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0014
$\Delta \theta_{C,A'}$	0.0012
$\Delta \theta_{g,d}$	-0.0025
$\Delta \theta_{g,F}$	-0.0019
$\Delta \theta_{i,g}$	-0.0092

Constants of Dispersion Formula *1	
$A_1$	1.24772961E+00
$A_2$	1.01954909E-01
$A_3$	3.50479619E-01
$B_1$	9.26606623E-03
$B_2$	4.51754311E-02
$B_3$	4.50186705E+01

\*1 By using these contents, refractive indices for any wavelength between 326 and 1129nm can be calculated. When calculateing refractive indices for any wavelength between 1129 and 2325nm, please refer to us.

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.1

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.95
Remarks	

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	$dn/dt$ relative (10 <sup>-6</sup> /°C)							
	t	C'	He-Ne	D	e	F'	g	i
-40~20	1.2	1.6	1.7	1.8	2.0	2.5	3.0	4.5
-20~ 0	1.2	1.7	1.7	1.9	2.1	2.6	3.1	4.7
0~20	1.2	1.7	1.8	1.9	2.2	2.7	3.2	4.9
20~40	1.3	1.8	1.8	2.0	2.2	2.8	3.3	5.0
40~60	1.3	1.8	1.9	2.1	2.3	2.9	3.4	5.2
60~80	1.3	1.9	1.9	2.1	2.4	2.9	3.5	5.4