

# PBL35Y

Code(d) **582409**

Code(e) **585406**

Refractive Index $n_d$	<b>1.58159</b> 1.581591	Abbe Number $\nu_d$	<b>40.86</b>	Dispersion $n_F-n_C$	<b>0.014235</b>
Refractive Index $n_e$	1.584969	Abbe Number $\nu_e$	40.58	Dispersion $n_F-n_C$	0.014415

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.54982
$n_{1970}$	1.97009	1.55460
$n_{1530}$	1.52958	1.55990
$n_{1129}$	1.12864	1.56502
$n_t$	1.01398	1.56687
$n_s$	0.85211	1.57029
$n_{A'}$	0.76819	1.57273
$n_r$	0.70652	1.57504
$n_C$	0.65627	1.57738
$n_{C'}$	0.64385	1.57804
$n_{\text{He-Ne}}$	0.6328	1.57866
$n_D$	0.58929	1.58147
$n_d$	0.58756	1.58159
$n_e$	0.54607	1.58497
$n_F$	0.48613	1.59161
$n_{F'}$	0.47999	1.59246
$n_{\text{He-Cd}}$	0.44157	1.59868
$n_g$	0.435835	1.59979
$n_h$	0.404656	1.60681
$n_i$	0.365015	1.61937
$n_{334}$	0.334148	1.63392
$n_{326}$	0.326106	1.63880

Constants of Dispersion Formula	
$A_1$	1.31884698E+00
$A_2$	1.25014653E-01
$A_3$	2.15794324E-01
$B_1$	1.01474939E-02
$B_2$	4.81636043E-02
$B_3$	2.85517448E+01

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

Mechanical Properties	
Young's Modulus E ( $10^8\text{N/m}^2$ )	596
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	245
Poisson's Ratio $\sigma$	0.217
Knoop Hardness Hk[Class]	450   5
Abrasion Aa	145
Photoelastic Constant $\beta$ (nm/cm/ $10^9\text{Pa}$ )	2.88

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	$dn/dT$ relative ( $10^{-6}/^\circ\text{C}$ )							
	t	C'	He-Ne	D	e	F'	g	i
-40~-20	1.0	1.7	1.7	1.9	2.2	2.8	3.4	5.5
-20~ 0	1.0	1.7	1.7	1.9	2.2	2.8	3.5	5.7
0~20	1.1	1.8	1.8	2.0	2.3	3.0	3.7	5.9
20~40	1.1	1.9	1.9	2.1	2.4	3.1	3.8	6.1
40~60	1.2	2.0	2.0	2.2	2.5	3.2	4.0	6.3
60~80	1.4	2.1	2.2	2.4	2.7	3.4	4.2	6.6

Partial Dispersions	
$n_C-n_t$	0.010505
$n_C-n_{A'}$	0.004644
$n_d-n_C$	0.004213
$n_e-n_C$	0.007591
$n_g-n_d$	0.018194
$n_g-n_F$	0.008172
$n_h-n_g$	0.007026
$n_i-n_g$	0.019583
$n_C-n_t$	0.011167
$n_e-n_{C'}$	0.006929
$n_F-n_e$	0.007486
$n_i-n_F$	0.026913

Relative Partial Dispersions	
$\theta_{C,t}$	0.7380
$\theta_{C,A'}$	0.3262
$\theta_{d,C}$	0.2960
$\theta_{e,C}$	0.5333
$\theta_{g,d}$	1.2781
$\theta_{g,F}$	0.5741
$\theta_{h,g}$	0.4936
$\theta_{i,g}$	1.3757
$\theta'_{C,t}$	0.7747
$\theta'_{e,C'}$	0.4807
$\theta'_{F,e}$	0.5193
$\theta'_{i,F'}$	1.8670

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0004
$\Delta\theta_{C,A'}$	0.0008
$\Delta\theta_{g,d}$	-0.0018
$\Delta\theta_{g,F}$	-0.0013
$\Delta\theta_{i,g}$	-0.0072

Thermal Properties	
Strain Point StP (°C)	345
Annealing Point AP (°C)	379
Transformation Temperature Tg (°C)	404
Yield Point At (°C)	454
Softening Point SP (°C)	550
Expansion Coefficients (-30~+70°C)	91
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	107
Thermal Conductivity k (W/m·K)	0.885

Coloring			
$\lambda_{80}$	335	$\lambda_5$	310
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	329	$\lambda_{0.05}$	309

CCI		
B	G	R
0.00	0.00	0.00

Internal Transmittance		
$\lambda(\text{nm})$	$\tau$ 10mm	$\tau$ 25mm
240		
250		
260		
270		
280		
290		
300		
310		
320	0.47	0.42
330	0.85	0.73
340	0.963	0.916
350	0.989	0.975
360	0.996	0.990
365	0.997	0.993
370	0.998	0.995
380	0.999	0.997
390	0.999	0.998
400	0.999	0.998
420	0.999	0.999
440	0.999	0.999
460	0.999	0.999
480	0.999	0.999
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	0.990
1800	0.980	0.952
2000	0.955	0.89
2200	0.911	0.79
2400	0.88	0.72

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.27
Remarks	

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