

# TRY123 (PBM8R) In Development

Code(d) **596394**

Code(e) **599391**

Refractive Index $n_d$	<b>1.59551</b> 1.595510	Abbe Number $v_d$	<b>(39.4)</b> 39.40	Dispersion $n_F-n_C$	<b>(0.01512)</b> 0.015116
Refractive Index $n_e$	1.599095	Abbe Number $v_e$	39.12	Dispersion $n_F-n_C$	0.015313

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.325420	1.56227
$n_{1970}$	1.970090	1.56720
$n_{1530}$	1.529580	1.57269
$n_{1129}$	1.128640	1.57803
$n_t$	1.013980	1.57997
$n_s$	0.852110	1.58356
$n_{A'}$	0.768190	1.58614
$n_r$	0.706520	1.58857
$n_C$	0.656270	<b>1.59105</b>
$n_{C'}$	0.643850	1.59175
$n_{\text{He-Ne}}$	0.632800	1.59241
$n_D$	0.589290	1.59538
$n_d$	0.587560	<b>1.59551</b>
$n_e$	0.546070	1.59910
$n_F$	0.486130	<b>1.60617</b>
$n_{F'}$	0.479990	1.60706
$n_{\text{He-Cd}}$	0.441570	1.61372
$n_g$	0.435835	<b>1.61490</b>
$n_h$	0.404656	1.62243
$n_i$	0.365015	-

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0014
$\Delta\theta_{C,A'}$	0.0010
$\Delta\theta_{g,d}$	-0.0003
$\Delta\theta_{g,F}$	0.0000
$\Delta\theta_{i,g}$	-

Constants of Dispersion Formula	
$A_1$	1.28727716E+00
$A_2$	1.97441182E-01
$A_3$	1.06080384E+00
$B_1$	9.05226546E-03
$B_2$	4.44806172E-02
$B_3$	1.25354680E+02

Other Properties	
Bubble Quality Group	
Specific Gravity	3.36
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
-40~20	2.0	2.7	2.8	3.0	3.3	4.0	4.7
-20~ 0	2.1	2.8	2.9	3.1	3.4	4.1	4.9
0~20	2.2	3.0	3.0	3.2	3.6	4.3	5.1
20~40	2.3	3.1	3.1	3.4	3.7	4.4	5.3
40~60	2.4	3.2	3.3	3.5	3.9	4.6	5.5
60~80	2.6	3.4	3.5	3.7	4.1	4.9	5.8

Partial Dispersions	
$n_C-n_t$	0.011078
$n_C-n_{A'}$	0.004906
$n_d-n_C$	0.004461
$n_e-n_C$	0.008046
$n_g-n_d$	0.019388
$n_g-n_F$	0.008733
$n_h-n_g$	0.007537
$n_i-n_g$	-
$n_C-n_t$	0.011779
$n_e-n_{C'}$	0.007345
$n_{F'}-n_e$	0.007968
$n_i-n_{F'}$	-

Thermal Properties	
Strain Point StP (°C)	378
Annealing Point AP (°C)	417
Transformation Temperature Tg (°C)	445
Yield Point At (°C)	487
Softening Point SP (°C)	583
Expansion Coefficients (-30~+70°C)	89
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	98
Thermal Conductivity k (W/m·K)	0.86

Mechanical Properties	
Young's Modulus E (10 <sup>9</sup> N/m <sup>2</sup> )	601
Rigidity Modulus G (10 <sup>9</sup> N/m <sup>2</sup> )	246
Poisson's Ratio $\sigma$	0.222
Knoop Hardness Hk(Class)	450   5
Abrasion Aa	149
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	2.83

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

Relative Partial Dispersions	
$\theta_{C,t}$	0.7329
$\theta_{C,A'}$	0.3246
$\theta_{d,C}$	0.2951
$\theta_{e,C}$	0.5323
$\theta_{g,d}$	1.2826
$\theta_{g,F}$	0.5777
$\theta_{h,g}$	0.4986
$\theta_{i,g}$	-
$\theta'_{C,t}$	0.7692
$\theta'_{e,C'}$	0.4797
$\theta'_{F',e}$	0.5203
$\theta'_{i,F}$	-

Coloring			
$\lambda_{80}$	430	$\lambda_5$	375
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	
380	0.292
390	0.432
400	0.625
420	0.857
440	0.942
460	0.971
480	0.983
500	0.988
550	0.994
600	0.996
650	0.997
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.996
1600	0.996
1800	0.976
2000	0.948
2200	0.887
2400	0.849