

L-PHL 2

Code(d) **559625**

Code(e) **561623**

Refractive Index n_d	1.55880	Abbe Number ν_d	62.5	Dispersion n_F-n_C	0.00894
	1.558800		62.55		0.008933
Refractive Index n_e	1.560931	Abbe Number ν_e	62.26	Dispersion $n_F-n_{C'}$	0.009009

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.53345
n_{1970}	1.97009	1.53809
n_{1530}	1.52958	1.54303
n_{1129}	1.12864	1.54736
n_t	1.01398	1.54879
n_s	0.85211	1.55129
$n_{A'}$	0.76819	1.55298
n_r	0.70652	1.55454
n_C	0.65627	1.55608
$n_{C'}$	0.64385	1.55652
$n_{\text{He-Ne}}$	0.6328	1.55692
n_D	0.58929	1.55872
n_d	0.58756	1.55880
n_e	0.54607	1.56093
n_F	0.48613	1.56502
$n_{F'}$	0.47999	1.56552
$n_{\text{He-Cd}}$	0.44157	1.56922
n_g	0.435835	1.56987
n_h	0.404656	1.57389
n_i	0.365015	1.58073

Partial Dispersions	
n_C-n_t	0.007289
$n_C-n_{A'}$	0.003099
n_d-n_C	0.002717
n_e-n_C	0.004848
n_g-n_d	0.011067
n_g-n_F	0.004851
n_h-n_g	0.004022
n_i-n_g	0.010868
n_C-n_t	0.007721
$n_e-n_{C'}$	0.004416
$n_{F'}-n_e$	0.004593
$n_i-n_{F'}$	0.015211

Relative Partial Dispersions	
$\theta_{C,t}$	0.8160
$\theta_{C,A'}$	0.3469
$\theta_{d,C}$	0.3042
$\theta_{e,C}$	0.5427
$\theta_{g,d}$	1.2389
$\theta_{g,F}$	0.5430
$\theta_{h,g}$	0.4502
$\theta_{i,g}$	1.2166
$\theta'_{C,t}$	0.8570
$\theta'_{e,C'}$	0.4902
$\theta'_{F',e}$	0.5098
$\theta'_{i,F}$	1.6884

Thermal Properties	
Strain Point StP (°C)	337
Annealing Point AP (°C)	359
Transformation Temperature Tg (°C)	381
Yield Point At (°C)	407
Softening Point SP (°C)	440
Expansion Coefficients (-30~+70°C)	99
α (10 ⁻⁷ /°C) (+100~+300°C)	130
Thermal Conductivity k (W/m·K)	0.683

Coloring			
λ_{80}	335	λ_5	295
λ_{70}			

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0242
$\Delta\theta_{C,A'}$	-0.0048
$\Delta\theta_{g,d}$	0.0041
$\Delta\theta_{g,F}$	0.0027
$\Delta\theta_{i,g}$	0.0154

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	645
Rigidity Modulus G (10 ⁸ N/m ²)	253
Poisson's Ratio σ	0.272
Knoop Hardness Hk(Class)	370 4
Abrasion Aa	468
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.99

Constants of Dispersion Formula	
A_1	1.08137176E+00
A_2	3.13257660E-01
A_3	8.79192863E-01
B_1	5.94210177E-03
B_2	1.98011567E-02
B_3	1.09893817E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	5
Weathering Resistance(Surface) Group W(S)	4~3
Acid Resistance(Surface) Group SR	51.1
Phosphate Resistance PR	4.1

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.03
Remarks	

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	0.01
310	0.16
320	0.49
330	0.75
340	0.89
350	0.954
360	0.98
370	0.991
380	0.995
390	0.997
400	0.997
420	0.997
440	0.997
460	0.997
480	0.997
500	0.998
550	0.999
600	0.999
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.998
1600	0.989
1800	0.964
2000	0.939
2200	0.89
2400	0.86

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 ⁻⁶ /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~20	-0.3	0.0	0.0	0.1	0.3	0.6	0.9
-20~ 0	-0.4	0.0	0.0	0.1	0.3	0.6	0.9
0~20	-0.4	-0.1	0.0	0.1	0.2	0.6	0.9
20~40	-0.4	-0.1	-0.1	0.1	0.2	0.6	0.9
40~60	-0.5	-0.1	-0.1	0.1	0.2	0.6	0.9
60~80	-0.5	-0.1	-0.1	0.0	0.2	0.6	1.0