

# L-TIH53

Code(d) **847238**

Code(e) **855236**

Refractive Index $n_d$	<b>1.84666</b>	Abbe Number $v_d$	<b>23.8</b>	Dispersion $n_F-n_C$	<b>0.03561</b>
	1.846660		23.77		0.035614
Refractive Index $n_e$	1.855043	Abbe Number $v_e$	23.59	Dispersion $n_F-n_C'$	0.036251

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.78361
$n_{1970}$	1.97009	1.79092
$n_{1530}$	1.52958	1.79958
$n_{1129}$	1.12864	1.80903
$n_t$	1.01398	1.81279
$n_s$	0.85211	1.82014
$n_{A'}$	0.76819	1.82565
$n_r$	0.70652	1.83096
$n_C$	0.65627	1.83648
$n_{C'}$	0.64385	1.83806
$n_{\text{He-Ne}}$	0.6328	1.83955
$n_D$	0.58929	1.84635
$n_d$	0.58756	1.84666
$n_e$	0.54607	1.85504
$n_F$	0.48613	1.87209
$n_{F'}$	0.47999	1.87431
$n_{\text{He-Cd}}$	0.44157	1.89112
$n_g$	0.435835	1.89417
$n_h$	0.404656	1.91423
$n_i$	0.365015	

Partial Dispersions	
$n_C-n_t$	0.023685
$n_C-n_{A'}$	0.010832
$n_d-n_C$	0.010180
$n_e-n_C$	0.018563
$n_g-n_d$	0.047509
$n_g-n_F$	0.022075
$n_h-n_g$	0.020063
$n_i-n_g$	
$n_C-n_t$	0.025265
$n_e-n_{C'}$	0.016983
$n_{F'-n_e}$	0.019268
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6650
$\theta_{C,A'}$	0.3042
$\theta_{d,C}$	0.2858
$\theta_{e,C}$	0.5212
$\theta_{g,d}$	1.3340
$\theta_{g,F}$	0.6198
$\theta_{h,g}$	0.5633
$\theta_{i,g}$	
$\theta'_{C,t}$	0.6969
$\theta'_{e,C'}$	0.4685
$\theta'_{F',e}$	0.5315
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	
Annealing Point AP (°C)	
Transformation Temperature Tg (°C)	561
Yield Point At (°C)	598
Softening Point SP (°C)	
Expansion Coefficients (-30~+70°C)	78
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	91
Thermal Conductivity k (W/m-K)	1.044

Coloring			
$\lambda_{80}$		$\lambda_5$	37
$\lambda_{70}$	42		

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.08
380	0.32
390	0.55
400	0.71
420	0.87
440	0.93
460	0.954
480	0.967
500	0.976
550	0.99
600	0.992
650	0.989
700	0.992
800	0.997
900	0.998
1000	0.998
1200	0.999
1400	0.996
1600	0.994
1800	0.986
2000	0.981
2200	0.956
2400	0.934

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0068
$\Delta\theta_{C,A'}$	-0.0004
$\Delta\theta_{g,d}$	0.0187
$\Delta\theta_{g,F}$	0.0168
$\Delta\theta_{i,g}$	

Constants of Dispersion Formula	
$A_1$	1.83464643E+00
$A_2$	4.15079602E-01
$A_3$	2.82563492E+00
$B_1$	1.34992001E-02
$B_2$	6.18608854E-02
$B_3$	2.01629170E+02

Mechanical Properties	
Young's Modulus E ( $10^8\text{N/m}^2$ )	
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	
Poisson's Ratio $\sigma$	
Knoop Hardness Hk[Class]	520   5
Abrasion Aa	157
Photoelastic Constant $\beta$ (nm/cm/ $10^6\text{Pa}$ )	

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.34
Remarks	

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
-40~20	1.2	2.3	2.3	2.7	3.3	4.7	6.4
-20~ 0	1.1	2.3	2.4	2.8	3.4	5.0	6.8
0~20	1.1	2.4	2.5	3.0	3.6	5.2	7.2
20~40	1.1	2.5	2.6	3.0	3.7	5.4	7.5
40~60	1.2	2.6	2.7	3.2	3.9	5.7	7.9
60~80	1.3	2.8	2.9	3.4	4.1	6.0	8.3