

S-LAH59

Code(d) **816466**

Code(e) **820464**

Refractive Index n_d	1.81600 1.816000	Abbe Number v_d	46.6 46.62	Dispersion n_F-n_C	0.01750 0.017503
Refractive Index n_e	1.820167	Abbe Number v_e	46.37	Dispersion n_F-n_C'	0.017688

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.77345
n_{1970}	1.97009	1.78033
n_{1530}	1.52958	1.78784
n_{1129}	1.12864	1.79483
n_t	1.01398	1.79729
n_s	0.85211	1.80174
$n_{A'}$	0.76819	1.80488
n_r	0.70652	1.80780
n_C	0.65627	1.81075
$n_{C'}$	0.64385	1.81158
$n_{\text{He-Ne}}$	0.6328	1.81236
n_D	0.58929	1.81585
n_d	0.58756	1.81600
n_e	0.54607	1.82017
n_F	0.48613	1.82825
$n_{F'}$	0.47999	1.82927
$n_{\text{He-Cd}}$	0.44157	1.83670
n_g	0.435835	1.83800
n_h	0.404656	1.84619
n_i	0.365015	1.86034

Partial Dispersions	
n_C-n_t	0.013459
$n_C-n_{A'}$	0.005870
n_d-n_C	0.005251
n_e-n_C	0.009418
n_g-n_d	0.021997
n_g-n_F	0.009745
n_h-n_g	0.008188
n_i-n_g	0.022341
n_C-n_t	0.014289
$n_e-n_{C'}$	0.008588
$n_{F'-n_e}$	0.009100
$n_i-n_{F'}$	0.031071

Relative Partial Dispersions	
$\theta_{C,t}$	0.7690
$\theta_{C,A'}$	0.3354
$\theta_{d,C}$	0.3000
$\theta_{e,C}$	0.5381
$\theta_{g,d}$	1.2568
$\theta_{g,F}$	0.5568
$\theta_{h,g}$	0.4678
$\theta_{i,g}$	1.2764
$\theta'_{C,t}$	0.8078
$\theta'_{e,C'}$	0.4855
$\theta'_{F',e}$	0.5145
$\theta'_{i,F}$	1.7566

Thermal Properties	
Strain Point StP (°C)	644
Annealing Point AP (°C)	690
Transformation Temperature Tg (°C)	714
Yield Point At (°C)	737
Softening Point SP (°C)	773
Expansion Coefficients (-30~+70°C)	63
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	76
Thermal Conductivity k (W/m-K)	0.816

Coloring			
λ_{80}	39	λ_5	30
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	0.02
300	0.06
310	0.09
320	0.28
330	0.43
340	0.58
350	0.71
360	0.81
370	0.88
380	0.921
390	0.943
400	0.958
420	0.973
440	0.979
460	0.984
480	0.989
500	0.994
550	0.997
600	0.996
650	0.996
700	0.996
800	0.996
900	0.995
1000	0.995
1200	0.995
1400	0.995
1600	0.994
1800	0.989
2000	0.973
2200	0.938
2400	0.76

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0036
$\Delta\theta_{C,A'}$	0.0030
$\Delta\theta_{g,d}$	-0.0111
$\Delta\theta_{g,F}$	-0.0092
$\Delta\theta_{i,g}$	-0.0582

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	1250
Rigidity Modulus G (10^8N/m^2)	482
Poisson's Ratio σ	0.298
Knoop Hardness Hk[Class]	750 7
Abrasion Aa	57
Photoelastic Constant β (nm/cm/ 10^5Pa)	1.37

Constants of Dispersion Formula	
A_1	1.51372967E+00
A_2	7.02462343E-01
A_3	1.33600982E+00
B_1	7.05246901E-03
B_2	2.49488689E-02
B_3	1.00085908E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	3.0
Phosphate Resistance PR	1.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	5.07
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	4.1	4.6	4.6	4.9	5.1	5.6	6.2
-20~0	4.1	4.7	4.7	5.0	5.2	5.8	6.4
0~20	4.2	4.8	4.8	5.1	5.3	5.9	6.5
20~40	4.3	4.9	4.9	5.2	5.4	6.1	6.7
40~60	4.3	5.0	5.0	5.3	5.6	6.2	6.9
60~80	4.4	5.1	5.1	5.4	5.7	6.4	7.0