

L-LAH90

Code(d) **832401**

Code(e) **837398**

Refractive Index n_d	1.83220 1.832200	Abbe Number ν_d	40.10	Dispersion n_F-n_C	0.020755
Refractive Index n_e	1.837128	Abbe Number ν_e	39.84	Dispersion $n_F-n_{C'}$	0.021011

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.78602
n_{1970}	1.97009	1.79293
n_{1530}	1.52958	1.80058
n_{1129}	1.12864	1.80800
n_t	1.01398	1.81069
n_s	0.85211	1.81568
$n_{A'}$	0.76819	1.81926
n_r	0.70652	1.82262
n_C	0.65627	1.82605
$n_{C'}$	0.64385	1.82701
$n_{\text{He-Ne}}$	0.6328	1.82792
n_D	0.58929	1.83202
n_d	0.58756	1.83220
n_e	0.54607	1.83713
n_F	0.48613	1.84680
$n_{F'}$	0.47999	1.84803
$n_{\text{He-Cd}}$	0.44157	1.85707
n_g	0.435835	1.85866
n_h	0.404656	1.86881
n_i	0.365015	1.88683

Constants of Dispersion Formula	
A_1	1.97595301E+00
A_2	2.83924985E-01
A_3	1.35176368E+00
B_1	1.04276395E-02
B_2	4.27708222E-02
B_3	1.01453710E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	5.2
Phosphate Resistance PR	1.2

Mechanical Properties	
Young's Modulus E (GPa)	114.8
Rigidity Modulus G (GPa)	44.0
Poisson's Ratio σ	0.304
Knoop Hardness Hk(Class)	660 7
Abrasion Aa	80

Partial Dispersions	
n_C-n_t	0.015354
$n_C-n_{A'}$	0.006789
n_d-n_C	0.006153
n_e-n_C	0.011081
n_g-n_d	0.026462
n_g-n_F	0.011860
n_h-n_g	0.010152
n_i-n_g	0.028165
n_C-n_t	0.016322
$n_e-n_{C'}$	0.010113
$n_{F'}-n_e$	0.010898
$n_i-n_{F'}$	0.038801

Relative Partial Dispersions	
$\theta_{C,t}$	0.7398
$\theta_{C,A'}$	0.3271
$\theta_{d,C}$	0.2965
$\theta_{e,C}$	0.5339
$\theta_{g,d}$	1.2750
$\theta_{g,F}$	0.5714
$\theta_{h,g}$	0.4891
$\theta_{i,g}$	1.3570
$\theta'_{C,t}$	0.7768
$\theta'_{e,C'}$	0.4813
$\theta'_{F',e}$	0.5187
$\theta'_{i,F'}$	1.8467

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0050
$\Delta\theta_{C,A'}$	0.0026
$\Delta\theta_{g,d}$	-0.0064
$\Delta\theta_{g,F}$	-0.0052
$\Delta\theta_{i,g}$	-0.0322

Thermal Properties	
Strain Point StP (°C)	578
Annealing Point AP (°C)	597
Transformation Temperature Tg (°C)	615 *
Yield Point At (°C)	654 *
Softening Point SP (°C)	677
Expansion Coefficients (-30~+70°C)	62 *
α (10 ⁻⁷ K ⁻¹) (+100~+300°C)	76 *
Thermal Conductivity λ W/(m·K)	0.839

Coloring			
λ_{80}	410	λ_5	340
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	376	$\lambda_{0.05}$	340

CCI		
B	G	R
0.00	1.32	1.36

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.05
350	0.26
360	0.55
370	0.73
380	0.84
390	0.903
400	0.936
420	0.966
440	0.978
460	0.985
480	0.990
500	0.994
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.998
1000	0.997
1200	0.997
1400	0.996
1600	0.994
1800	0.988
2000	0.969
2200	0.925
2400	0.75

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative (10 ⁻⁶ K ⁻¹)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	5.4	6.4	6.4	6.7	7.1	7.9	8.7
-20~ 0	5.4	6.4	6.5	6.7	7.1	7.9	8.8
0~20	5.5	6.5	6.5	6.8	7.2	8.0	8.9
20~40	5.5	6.5	6.5	6.8	7.2	8.1	9.0
40~60	5.6	6.6	6.7	7.0	7.4	8.3	9.3
60~80	5.8	6.8	6.9	7.2	7.6	8.6	9.6

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	1.93
Specific Gravity d	4.65
Remarks	

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.