S-LAH60MQ

Code(d) **834372**
Code(e) **839369**

Refractive Index	n_d	**1.83400** 1.834000	Abbe Number	ν_d	**37.17**	Dispersion	n_F-n_C	**0.022437**
Refractive Index	n_e	1.839321	Abbe Number	ν_e	36.92	Dispersion	$n_{F'}$-$n_{C'}$	0.022735

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.78810
n_{1970}	1.97009	1.79430
n_{1530}	1.52958	1.80135
n_{1129}	1.12864	1.80854
n_t	1.01398	1.81125
n_s	0.85211	1.81641
$n_{A'}$	0.76819	1.82017
n_r	0.70652	1.82374
n_C	0.65627	1.82739
$n_{C'}$	0.64385	1.82843
$n_{He\text{-}Ne}$	0.6328	1.82940
n_D	0.58929	1.83380
n_d	0.58756	1.83400
n_e	0.54607	1.83932
n_F	0.48613	1.84983
$n_{F'}$	0.47999	1.85116
$n_{He\text{-}Cd}$	0.44157	1.86106
n_g	0.435835	1.86281
n_h	0.404656	1.87401
n_i	0.365015	1.89407

Constants of Dispersion Formula	
A_1	1.95539063E+00
A_2	3.02550219E-01
A_3	1.34311390E+00
B_1	1.09111365E-02
B_2	4.54666700E-02
B_3	1.13580850E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	1.2

Mechanical Properties		
Young's Modulus E (GPa)	95.3	
Rigidity Modulus G (GPa)	36.6	
Poisson's Ratio σ	0.302	
Knoop Hardness Hk[Class]	520	5
Abrasion Aa	160	

Partial Dispersions	
n_C-n_t	0.016137
n_C-$n_{A'}$	0.007222
n_d-n_C	0.006608
n_e-n_C	0.011929
n_g-n_d	0.028810
n_g-n_F	0.012981
n_h-n_g	0.011196
n_i-n_g	0.031262
n_C-n_t	0.017174
n_e-$n_{C'}$	0.010892
$n_{F'}$-n_e	0.011843
n_i-$n_{F'}$	0.042908

Relative Partial Dispersions	
$\theta_{C,t}$	0.7192
$\theta_{C,A'}$	0.3219
$\theta_{d,C}$	0.2945
$\theta_{e,C}$	0.5317
$\theta_{g,d}$	1.2840
$\theta_{g,F}$	0.5786
$\theta_{h,g}$	0.4990
$\theta_{i,g}$	1.3933
$\theta'_{C',t}$	0.7554
$\theta'_{e,C'}$	0.4791
$\theta'_{F',e}$	0.5209
$\theta'_{i,F'}$	1.8873

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	-0.0019
$\Delta\theta_{C,A'}$	0.0010
$\Delta\theta_{g,d}$	-0.0035
$\Delta\theta_{g,F}$	-0.0027
$\Delta\theta_{i,g}$	-0.0205

Thermal Properties		
Strain Point StP (℃)		609
Annealing Point AP (℃)		635
Transformation Temperature Tg (℃)		655
Yield Point At (℃)		688
Softening Point SP (℃)		721
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	85
	(+100~+300℃)	98
Thermal Conductivity λ W/(m·K)		0.701

Coloring			
λ_{80}	425	λ_5	340
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	377	$\lambda_{0.05}$	336

CCI		
B	G	R
0.00	1.58	1.64

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.08
350	0.31
360	0.56
370	0.73
380	0.83
390	0.89
400	0.927
420	0.957
440	0.968
460	0.976
480	0.983
500	0.989
550	0.995
600	0.995
650	0.995
700	0.997
800	0.998
900	0.998
1000	0.998
1200	0.999
1400	0.998
1600	0.995
1800	0.986
2000	0.968
2200	0.927
2400	0.80

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}K^{-1}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	-1.4	-0.6	-0.6	-0.3	0.0	0.8	1.6
-20~ 0	-1.4	-0.6	-0.5	-0.2	0.1	0.9	1.8
0~20	-1.4	-0.5	-0.5	-0.2	0.2	1.1	2.0
20~40	-1.4	-0.5	-0.4	-0.1	0.2	1.1	2.1
40~60	-1.4	-0.4	-0.4	-0.1	0.3	1.2	2.2
60~80	-1.3	-0.4	-0.3	0.0	0.4	1.4	2.4

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	1.36
Specific Gravity d	4.71
Remarks	

OHARA 23-05

※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.