

# S-LAH92

Code(d) **892371**

Code(e) **898369**

Refractive Index $n_d$	<b>1.89190</b> 1.891900	Abbe Number $\nu_d$	<b>37.13</b>	Dispersion $n_F-n_C$	<b>0.024019</b>
Refractive Index $n_e$	1.897597	Abbe Number $\nu_e$	36.88	Dispersion $n_F-n_{C'}$	0.024337

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.84259
$n_{1970}$	1.97009	1.84927
$n_{1530}$	1.52958	1.85686
$n_{1129}$	1.12864	1.86460
$n_t$	1.01398	1.86752
$n_s$	0.85211	1.87305
$n_{A'}$	0.76819	1.87709
$n_r$	0.70652	1.88091
$n_C$	0.65627	1.88482
$n_{C'}$	0.64385	1.88593
$n_{\text{He-Ne}}$	0.6328	1.88698
$n_D$	0.58929	1.89169
$n_d$	0.58756	1.89190
$n_e$	0.54607	1.89760
$n_F$	0.48613	1.90884
$n_{F'}$	0.47999	1.91027
$n_{\text{He-Cd}}$	0.44157	1.92085
$n_g$	0.435835	1.92273
$n_h$	0.404656	1.93469
$n_i$	0.365015	

Constants of Dispersion Formula	
$A_1$	2.10440311E+00
$A_2$	3.58346161E-01
$A_3$	1.63010064E+00
$B_1$	1.08531811E-02
$B_2$	4.43405920E-02
$B_3$	1.23249800E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	123.0
Rigidity Modulus G (GPa)	47.1
Poisson's Ratio $\sigma$	0.306
Knoop Hardness Hk(Class)	700   7
Abrasion Aa	63

Partial Dispersions	
$n_C-n_t$	0.017302
$n_C-n_{A'}$	0.007739
$n_d-n_C$	0.007076
$n_e-n_C$	0.012773
$n_g-n_d$	0.030827
$n_g-n_F$	0.013884
$n_h-n_g$	0.011965
$n_i-n_g$	
$n_C-n_t$	0.018412
$n_e-n_{C'}$	0.011663
$n_{F'}-n_e$	0.012674
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7203
$\theta_{C,A'}$	0.3222
$\theta_{d,C}$	0.2946
$\theta_{e,C}$	0.5318
$\theta_{g,d}$	1.2834
$\theta_{g,F}$	0.5780
$\theta_{h,g}$	0.4981
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7565
$\theta'_{e,C'}$	0.4792
$\theta'_{F',e}$	0.5208
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0006
$\Delta\theta_{C,A'}$	0.0013
$\Delta\theta_{g,d}$	-0.0042
$\Delta\theta_{g,F}$	-0.0034
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	646
Annealing Point AP (°C)	678
Transformation Temperature Tg (°C)	689
Yield Point At (°C)	730
Softening Point SP (°C)	761
Expansion Coefficients (-30~+70°C)	75
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	87
Thermal Conductivity $\lambda$ W/(m·K)	0.873

Coloring			
$\lambda_{80}$		$\lambda_5$	350
$\lambda_{70}$	400		

Internal transmission			
$\lambda_{0.80}$	390	$\lambda_{0.05}$	349

CCI		
B	G	R
0.00	2.55	2.68

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.08
360	0.28
370	0.52
380	0.69
390	0.80
400	0.87
420	0.936
440	0.962
460	0.976
480	0.984
500	0.990
550	0.997
600	0.998
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.998
1600	0.997
1800	0.992
2000	0.977
2200	0.946
2400	0.82

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative ( $10^{-6} \text{K}^{-1}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.8	4.7	4.8	5.1	5.5	6.4	7.4
-20~ 0	3.7	4.7	4.8	5.1	5.5	6.5	7.5
0~20	3.7	4.8	4.8	5.1	5.6	6.6	7.7
20~40	3.7	4.8	4.8	5.2	5.6	6.7	7.8
40~60	3.7	4.9	4.9	5.3	5.7	6.8	8.0
60~80	3.9	5.1	5.2	5.5	6.0	7.1	8.4

Other Properties	
Photoelastic Constant $\beta$ nm/(cm $\cdot$ 10 $^5$ Pa)	1.12
Specific Gravity d	4.87
Remarks	

OHARA 24-01

OHARA Copyright© OHARA INC. All Rights Reserved.

※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.