

# S-LAH53V

Code(d) **806409**

Code(e) **811407**

Refractive Index $n_d$	<b>1.80610</b> 1.806100	Abbe Number $\nu_d$	<b>40.93</b>	Dispersion $n_F-n_C$	<b>0.019695</b>
Refractive Index $n_e$	1.810776	Abbe Number $\nu_e$	40.67	Dispersion $n_F-n_{C'}$	0.019937

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.76201
$n_{1970}$	1.97009	1.76865
$n_{1530}$	1.52958	1.77600
$n_{1129}$	1.12864	1.78309
$n_t$	1.01398	1.78566
$n_s$	0.85211	1.79041
$n_{A'}$	0.76819	1.79381
$n_r$	0.70652	1.79701
$n_C$	0.65627	1.80026
$n_{C'}$	0.64385	1.80118
$n_{\text{He-Ne}}$	0.6328	1.80204
$n_D$	0.58929	1.80593
$n_d$	0.58756	1.80610
$n_e$	0.54607	1.81078
$n_F$	0.48613	1.81995
$n_{F'}$	0.47999	1.82111
$n_{\text{He-Cd}}$	0.44157	1.82969
$n_g$	0.435835	1.83121
$n_h$	0.404656	1.84084
$n_i$	0.365015	1.85798

Constants of Dispersion Formula	
$A_1$	1.96600955E+00
$A_2$	2.05143305E-01
$A_3$	1.23200934E+00
$B_1$	1.07817785E-02
$B_2$	4.63727869E-02
$B_3$	9.76940600E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1135
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	434
Poisson's Ratio $\sigma$	0.309
Knoop Hardness Hk[Class]	650   7
Abrasion Aa	66
Photoelastic Constant $\beta$ nm/(cm· $10^5\text{Pa}$ )	2.13

Partial Dispersions	
$n_C-n_t$	0.014601
$n_C-n_{A'}$	0.006450
$n_d-n_C$	0.005841
$n_e-n_C$	0.010517
$n_g-n_d$	0.025106
$n_g-n_F$	0.011252
$n_h-n_g$	0.009639
$n_i-n_g$	0.026774
$n_C-n_t$	0.015520
$n_e-n_{C'}$	0.009598
$n_F-n_e$	0.010339
$n_i-n_{F'}$	0.036865

Relative Partial Dispersions	
$\theta_{C,t}$	0.7414
$\theta_{C,A'}$	0.3275
$\theta_{d,C}$	0.2966
$\theta_{e,C}$	0.5340
$\theta_{g,d}$	1.2747
$\theta_{g,F}$	0.5713
$\theta_{h,g}$	0.4894
$\theta_{i,g}$	1.3594
$\theta'_{C,t}$	0.7785
$\theta'_{e,C'}$	0.4814
$\theta'_{F,e}$	0.5186
$\theta'_{i,F'}$	1.8491

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0027
$\Delta\theta_{C,A'}$	0.0020
$\Delta\theta_{g,d}$	-0.0050
$\Delta\theta_{g,F}$	-0.0039
$\Delta\theta_{i,g}$	-0.0229

Thermal Properties	
Strain Point StP (°C)	569
Annealing Point AP (°C)	589
Transformation Temperature Tg (°C)	603
Yield Point At (°C)	638
Softening Point SP (°C)	670
Expansion Coefficients (-30~+70°C)	58
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	71
Thermal Conductivity $\lambda$ W/(m·K)	0.859

Coloring			
$\lambda_{80}$	400	$\lambda_5$	345
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	372	$\lambda_{0.05}$	341

CCI		
B	G	R
0.00	0.95	0.98

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.02
350	0.23
360	0.56
370	0.78
380	0.88
390	0.931
400	0.954
420	0.975
440	0.984
460	0.989
480	0.992
500	0.995
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.996
1600	0.995
1800	0.987
2000	0.966
2200	0.916
2400	0.73

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	7.7	8.6	8.7	9.0	9.3	10.1	11.0
-20~ 0	7.8	8.7	8.8	9.1	9.5	10.3	11.3
0~20	7.8	8.8	8.9	9.2	9.6	10.5	11.4
20~40	7.8	8.8	8.9	9.2	9.6	10.6	11.6
40~60	7.9	9.0	9.0	9.4	9.8	10.8	11.8
60~80	8.1	9.2	9.3	9.6	10.0	11.0	12.1

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.41
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.