

# S-LAH53

Code(d) **806409**

Code(e) **811407**

Refractive Index $n_d$	<b>1.80610</b>	Abbe Number $\nu_d$	<b>40.92</b>	Dispersion $n_F-n_C$	<b>0.019697</b>
	1.806098				
Refractive Index $n_e$	1.810775	Abbe Number $\nu_e$	40.67	Dispersion $n_F-n_C'$	0.019935

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.76051
$n_{1970}$	1.97009	1.76764
$n_{1530}$	1.52958	1.77546
$n_{1129}$	1.12864	1.78287
$n_t$	1.01398	1.78551
$n_s$	0.85211	1.79034
$n_{A'}$	0.76819	1.79377
$n_f$	0.70652	1.79699
$n_C$	0.65627	1.80025
$n_{C'}$	0.64385	1.80117
$n_{\text{He-Ne}}$	0.6328	1.80203
$n_D$	0.58929	1.80592
$n_d$	0.58756	1.80610
$n_e$	0.54607	1.81078
$n_F$	0.48613	1.81994
$n_{F'}$	0.47999	1.82110
$n_{\text{He-Cd}}$	0.44157	1.82967
$n_g$	0.435835	1.83117
$n_h$	0.404656	1.84078
$n_i$	0.365015	1.85782

Constants of Dispersion Formula	
$A_1$	1.91811619E+00
$A_2$	2.53724399E-01
$A_3$	1.39473885E+00
$B_1$	1.02147684E-02
$B_2$	4.33176011E-02
$B_3$	1.01938021E+02

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	4.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	112.7
Rigidity Modulus G (GPa)	43.4
Poisson's Ratio $\sigma$	0.299
Knoop Hardness Hk(Class)	640   6
Abrasion Aa	80

Partial Dispersions	
$n_C-n_t$	0.014740
$n_C-n_{A'}$	0.006479
$n_d-n_C$	0.005850
$n_e-n_C$	0.010527
$n_g-n_d$	0.025076
$n_g-n_F$	0.011229
$n_h-n_g$	0.009607
$n_i-n_g$	0.026650
$n_C-n_t$	0.015661
$n_e-n_{C'}$	0.009606
$n_{F'}-n_e$	0.010329
$n_i-n_{F'}$	0.036720

Relative Partial Dispersions	
$\theta_{C,t}$	0.7483
$\theta_{C,A'}$	0.3289
$\theta_{d,C}$	0.2970
$\theta_{e,C}$	0.5344
$\theta_{g,d}$	1.2731
$\theta_{g,F}$	0.5701
$\theta_{h,g}$	0.4877
$\theta_{i,g}$	1.3530
$\theta'_{C,t}$	0.7856
$\theta'_{e,C}$	0.4819
$\theta'_{F',e}$	0.5181
$\theta'_{i,F'}$	1.8420

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0096
$\Delta \theta_{C,A'}$	0.0034
$\Delta \theta_{g,d}$	-0.0066
$\Delta \theta_{g,F}$	-0.0052
$\Delta \theta_{i,g}$	-0.0294

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	610
Yield Point At (°C)	637
Softening Point SP (°C)	687
Expansion Coefficients (-30~+70°C)	59
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	70
Thermal Conductivity $\lambda$ W/(m·K)	0.860

Coloring			
$\lambda_{80}$	405	$\lambda_5$	340
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	370	$\lambda_{0.05}$	340

CCI		
B	G	R
0.00	1.07	1.13

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.06
350	0.38
360	0.65
370	0.80
380	0.88
390	0.925
400	0.947
420	0.969
440	0.979
460	0.985
480	0.989
500	0.993
550	0.996
600	0.996
650	0.997
700	0.998
800	0.998
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.989
2000	0.969
2200	0.915
2400	0.72

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	5.1	6.2	6.2	6.5	6.8	7.6	8.3
-20~ 0	5.2	6.3	6.3	6.6	6.9	7.7	8.5
0~20	5.3	6.4	6.4	6.7	7.1	7.9	8.7
20~40	5.6	6.6	6.7	6.9	7.3	8.1	9.0
40~60	5.8	6.8	6.9	7.2	7.6	8.4	9.4
60~80	6.2	7.1	7.2	7.5	7.8	8.7	9.8

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>9</sup> Pa)	1.96
Specific Gravity d	4.43
Remarks	

OHARA 23-05

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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.