

# S-LAH51

Code(d) **786442**

Code(e) **790439**

Refractive Index $n_d$	<b>1.78590</b> 1.785896	Abbe Number $\nu_d$	<b>44.20</b>	Dispersion $n_F-n_C$	<b>0.017780</b>
Refractive Index $n_e$	1.790123	Abbe Number $\nu_e$	43.95	Dispersion $n_F-n_{C'}$	0.017979

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.74265
$n_{1970}$	1.97009	1.74972
$n_{1530}$	1.52958	1.75740
$n_{1129}$	1.12864	1.76452
$n_t$	1.01398	1.76700
$n_s$	0.85211	1.77150
$n_{A'}$	0.76819	1.77466
$n_r$	0.70652	1.77761
$n_C$	0.65627	1.78058
$n_{C'}$	0.64385	1.78142
$n_{\text{He-Ne}}$	0.6328	1.78221
$n_D$	0.58929	1.78574
$n_d$	0.58756	1.78590
$n_e$	0.54607	1.79012
$n_F$	0.48613	1.79836
$n_{F'}$	0.47999	1.79940
$n_{\text{He-Cd}}$	0.44157	1.80704
$n_g$	0.435835	1.80838
$n_h$	0.404656	1.81687
$n_i$	0.365015	1.83175

Constants of Dispersion Formula	
$A_1$	1.82586991E+00
$A_2$	2.83023349E-01
$A_3$	1.35964319E+00
$B_1$	9.35297152E-03
$B_2$	3.73803057E-02
$B_3$	1.00655798E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1~2
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1129
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	435
Poisson's Ratio $\sigma$	0.297
Knoop Hardness Hk[Class]	660   7
Abrasion Aa	80
Photoelastic Constant $\beta$ nm/(cm· $10^5\text{Pa}$ )	1.88

Partial Dispersions	
$n_C-n_t$	0.013580
$n_C-n_{A'}$	0.005923
$n_d-n_C$	0.005312
$n_e-n_C$	0.009539
$n_g-n_d$	0.022480
$n_g-n_F$	0.010012
$n_h-n_g$	0.008492
$n_i-n_g$	0.023375
$n_C-n_t$	0.014419
$n_e-n_{C'}$	0.008700
$n_F-n_e$	0.009279
$n_i-n_{F'}$	0.032349

Relative Partial Dispersions	
$\theta_{C,t}$	0.7638
$\theta_{C,A'}$	0.3331
$\theta_{d,C}$	0.2988
$\theta_{e,C}$	0.5365
$\theta_{g,d}$	1.2643
$\theta_{g,F}$	0.5631
$\theta_{h,g}$	0.4776
$\theta_{i,g}$	1.3147
$\theta'_{C,t}$	0.8020
$\theta'_{e,C'}$	0.4839
$\theta'_{F,e}$	0.5161
$\theta'_{i,F'}$	1.7993

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0097
$\Delta\theta_{C,A'}$	0.0037
$\Delta\theta_{g,d}$	-0.0086
$\Delta\theta_{g,F}$	-0.0069
$\Delta\theta_{i,g}$	-0.0402

Thermal Properties	
Strain Point StP (°C)	568
Annealing Point AP (°C)	598
Transformation Temperature Tg (°C)	617
Yield Point At (°C)	641
Softening Point SP (°C)	677
Expansion Coefficients (-30~+70°C)	59
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	72
Thermal Conductivity $\lambda$ W/(m·K)	0.826

Coloring			
$\lambda_{80}$	390	$\lambda_5$	335
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	366	$\lambda_{0.05}$	333

CCI		
B	G	R
0.00	0.83	0.82

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	0.01
340	0.17
350	0.51
360	0.73
370	0.84
380	0.910
390	0.942
400	0.961
420	0.977
440	0.984
460	0.989
480	0.993
500	0.995
550	0.998
600	0.997
650	0.997
700	0.998
800	0.998
900	0.997
1000	0.996
1200	0.996
1400	0.991
1600	0.989
1800	0.981
2000	0.957
2200	0.89
2400	0.68

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		6.0		6.3	6.6	7.3	7.8
-20~ 0		6.0		6.3	6.6	7.3	7.9
0~20		6.1		6.4	6.7	7.4	8.1
20~40		6.2		6.5	6.8	7.6	8.3
40~60		6.4		6.7	7.0	7.8	8.6
60~80		6.6		6.9	7.2	8.1	8.9

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.40
Remarks	

OHARA 17-04

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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.