

# S-LAH52Q

Code(d) **800422**

Code(e) **804420**

Refractive Index $n_d$	<b>1.79952</b> 1.799520	Abbe Number $\nu_d$	<b>42.24</b>	Dispersion $n_F-n_C$	<b>0.018928</b>
Refractive Index $n_e$	1.804018	Abbe Number $\nu_e$	41.98	Dispersion $n_F-n_{C'}$	0.019154

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.75708
$n_{1970}$	1.97009	1.76345
$n_{1530}$	1.52958	1.77050
$n_{1129}$	1.12864	1.77732
$n_t$	1.01398	1.77980
$n_s$	0.85211	1.78438
$n_{A'}$	0.76819	1.78767
$n_r$	0.70652	1.79076
$n_C$	0.65627	1.79389
$n_{C'}$	0.64385	1.79478
$n_{\text{He-Ne}}$	0.6328	1.79561
$n_D$	0.58929	1.79935
$n_d$	0.58756	1.79952
$n_e$	0.54607	1.80402
$n_F$	0.48613	1.81282
$n_{F'}$	0.47999	1.81393
$n_{\text{He-Cd}}$	0.44157	1.82212
$n_g$	0.435835	1.82356
$n_h$	0.404656	1.83271
$n_i$	0.365015	1.84883

Constants of Dispersion Formula	
$A_1$	1.91082318E+00
$A_2$	2.39854589E-01
$A_3$	1.16159733E+00
$B_1$	1.03565352E-02
$B_2$	4.13805081E-02
$B_3$	9.66037300E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	52.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1098
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	418
Poisson's Ratio $\sigma$	0.313
Knoop Hardness Hk[Class]	620   6
Abrasion Aa	54
Photoelastic Constant $\beta$ (nm/cm/ $10^5\text{Pa}$ )	2.31

Partial Dispersions	
$n_C-n_t$	0.014094
$n_C-n_{A'}$	0.006224
$n_d-n_C$	0.005627
$n_e-n_C$	0.010125
$n_g-n_d$	0.024043
$n_g-n_F$	0.010742
$n_h-n_g$	0.009149
$n_i-n_g$	0.025268
$n_C-n_t$	0.014980
$n_e-n_{C'}$	0.009239
$n_F-n_e$	0.009915
$n_i-n_{F'}$	0.034898

Relative Partial Dispersions	
$\theta_{C,t}$	0.7446
$\theta_{C,A'}$	0.3288
$\theta_{d,C}$	0.2973
$\theta_{e,C}$	0.5349
$\theta_{g,d}$	1.2702
$\theta_{g,F}$	0.5675
$\theta_{h,g}$	0.4834
$\theta_{i,g}$	1.3350
$\theta'_{C,t}$	0.7821
$\theta'_{e,C'}$	0.4824
$\theta'_{F',e}$	0.5176
$\theta'_{i,F'}$	1.8220

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0003
$\Delta\theta_{C,A'}$	0.0017
$\Delta\theta_{g,d}$	-0.0068
$\Delta\theta_{g,F}$	-0.0056
$\Delta\theta_{i,g}$	-0.0363

Thermal Properties	
Strain Point StP ( $^{\circ}\text{C}$ )	553
Annealing Point AP ( $^{\circ}\text{C}$ )	576
Transformation Temperature Tg ( $^{\circ}\text{C}$ )	598
Yield Point At ( $^{\circ}\text{C}$ )	622
Softening Point SP ( $^{\circ}\text{C}$ )	651
Expansion Coefficients ( $-30\sim+70^{\circ}\text{C}$ )	60
$\alpha$ ( $10^{-7}/^{\circ}\text{C}$ ) ( $+100\sim+300^{\circ}\text{C}$ )	73
Thermal Conductivity k (W/m-K)	0.852

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

Internal transmission			
$\lambda_{0.80}$	365	$\lambda_{0.05}$	334

CCI		
B	G	R
0.00	0.67	0.68

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.13
350	0.46
360	0.73
370	0.86
380	0.926
390	0.954
400	0.969
420	0.982
440	0.988
460	0.992
480	0.995
500	0.997
550	0.999
600	0.998
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.989
2000	0.967
2200	0.924
2400	0.75

Temperature Coefficients of Refractive Index							
Range of Temperature ( $^{\circ}\text{C}$ )	$dn/dT$ relative ( $10^{-6}/^{\circ}\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	8.5	9.5	9.5	9.8	10.2	11.0	11.9
-20~ 0	8.6	9.6	9.6	9.9	10.3	11.2	12.1
0~20	8.7	9.7	9.7	10.1	10.5	11.4	12.3
20~40	8.7	9.8	9.8	10.2	10.6	11.5	12.5
40~60	8.8	9.9	10.0	10.3	10.7	11.7	12.7
60~80	9.0	10.1	10.2	10.5	11.0	12.0	13.1

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.47
Remarks	

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