

# S-LAH63Q

Code(d) **804396**

Code(e) **809393**

Refractive Index $n_d$	<b>1.80440</b> 1.804400	Abbe Number $\nu_d$	<b>39.58</b>	Dispersion $n_F-n_C$	<b>0.020323</b>
Refractive Index $n_e$	1.809222	Abbe Number $\nu_e$	39.31	Dispersion $n_F-n_{C'}$	0.020586

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.76063
$n_{1970}$	1.97009	1.76695
$n_{1530}$	1.52958	1.77401
$n_{1129}$	1.12864	1.78098
$n_t$	1.01398	1.78355
$n_s$	0.85211	1.78834
$n_{A'}$	0.76819	1.79180
$n_r$	0.70652	1.79507
$n_C$	0.65627	1.79840
$n_{C'}$	0.64385	1.79934
$n_{\text{He-Ne}}$	0.6328	1.80023
$n_D$	0.58929	1.80422
$n_d$	0.58756	1.80440
$n_e$	0.54607	1.80922
$n_F$	0.48613	1.81872
$n_{F'}$	0.47999	1.81993
$n_{\text{He-Cd}}$	0.44157	1.82885
$n_g$	0.435835	1.83043
$n_h$	0.404656	1.84052
$n_i$	0.365015	1.85862

Constants of Dispersion Formula	
$A_1$	1.96723017E+00
$A_2$	1.94953915E-01
$A_3$	1.25386282E+00
$B_1$	1.10456086E-02
$B_2$	4.97137061E-02
$B_3$	1.04843520E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1026
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	395
Poisson's Ratio $\sigma$	0.300
Knoop Hardness Hk[Class]	580   6
Abrasion Aa	121
Photoelastic Constant $\beta$ (nm/cm/ $10^5\text{Pa}$ )	1.39

Partial Dispersions	
$n_C-n_t$	0.014851
$n_C-n_{A'}$	0.006597
$n_d-n_C$	0.006003
$n_e-n_C$	0.010825
$n_g-n_d$	0.026030
$n_g-n_F$	0.011710
$n_h-n_g$	0.010090
$n_i-n_g$	0.028188
$n_C-n_t$	0.015794
$n_e-n_{C'}$	0.009882
$n_F-n_e$	0.010704
$n_i-n_{F'}$	0.038692

Relative Partial Dispersions	
$\theta_{C,t}$	0.7307
$\theta_{C,A'}$	0.3246
$\theta_{d,C}$	0.2954
$\theta_{e,C}$	0.5326
$\theta_{g,d}$	1.2808
$\theta_{g,F}$	0.5762
$\theta_{h,g}$	0.4965
$\theta_{i,g}$	1.3870
$\theta'_{C,t}$	0.7672
$\theta'_{e,C'}$	0.4800
$\theta'_{F',e}$	0.5200
$\theta'_{i,F'}$	1.8795

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0017
$\Delta\theta_{C,A'}$	0.0008
$\Delta\theta_{g,d}$	-0.0017
$\Delta\theta_{g,F}$	-0.0012
$\Delta\theta_{i,g}$	-0.0066

Thermal Properties	
Strain Point StP ( $^{\circ}\text{C}$ )	626
Annealing Point AP ( $^{\circ}\text{C}$ )	654
Transformation Temperature Tg ( $^{\circ}\text{C}$ )	669
Yield Point At ( $^{\circ}\text{C}$ )	701
Softening Point SP ( $^{\circ}\text{C}$ )	732
Expansion Coefficients ( $-30\sim+70^{\circ}\text{C}$ )	79
$\alpha$ ( $10^{-7}/^{\circ}\text{C}$ ) ( $+100\sim+300^{\circ}\text{C}$ )	93
Thermal Conductivity k (W/m·K)	0.738

Coloring			
$\lambda_{80}$	415	$\lambda_5$	345
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	378	$\lambda_{0.05}$	343

CCI		
B	G	R
0.00	1.51	1.56

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.01
350	0.14
360	0.44
370	0.69
380	0.82
390	0.89
400	0.927
420	0.959
440	0.973
460	0.981
480	0.987
500	0.991
550	0.996
600	0.996
650	0.996
700	0.997
800	0.998
900	0.998
1000	0.999
1200	0.999
1400	0.998
1600	0.995
1800	0.987
2000	0.968
2200	0.923
2400	0.77

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	0.4	1.2	1.2	1.5	1.8	2.5	3.3
-20~ 0	0.4	1.1	1.2	1.4	1.7	2.5	3.3
0~20	0.4	1.2	1.2	1.5	1.8	2.6	3.5
20~40	0.4	1.2	1.3	1.5	1.9	2.7	3.6
40~60	0.4	1.3	1.3	1.6	2.0	2.8	3.8
60~80	0.5	1.4	1.5	1.7	2.1	3.0	4.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.45
Remarks	

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