

# S-LAH63

Code(d) **804396**

Code(e) **809393**

Refractive Index $n_d$	<b>1.80440</b> 1.804398	Abbe Number $v_d$	<b>39.6</b> 39.59	Dispersion $n_F-n_C$	<b>0.02032</b> 0.020320
Refractive Index $n_e$	1.809221	Abbe Number $v_e$	39.33	Dispersion $n_F'-n_C'$	0.020573

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.75781
$n_{1970}$	1.97009	1.76505
$n_{1530}$	1.52958	1.77300
$n_{1129}$	1.12864	1.78056
$n_t$	1.01398	1.78325
$n_s$	0.85211	1.78820
$n_{A'}$	0.76819	1.79172
$n_r$	0.70652	1.79502
$n_C$	0.65627	1.79838
$n_{C'}$	0.64385	1.79932
$n_{\text{He-Ne}}$	0.6328	1.80021
$n_D$	0.58929	1.80422
$n_d$	0.58756	1.80440
$n_e$	0.54607	1.80922
$n_F$	0.48613	1.81870
$n_{F'}$	0.47999	1.81990
$n_{\text{He-Cd}}$	0.44157	1.82877
$n_g$	0.435835	1.83034
$n_h$	0.404656	1.84033
$n_i$	0.365015	1.85815

Partial Dispersions	
$n_C-n_t$	0.015124
$n_C-n_{A'}$	0.006658
$n_d-n_C$	0.006022
$n_e-n_C$	0.010845
$n_g-n_d$	0.025940
$n_g-n_F$	0.011642
$n_h-n_g$	0.009994
$n_i-n_g$	0.027810
$n_C-n_t$	0.016071
$n_e-n_{C'}$	0.009898
$n_{F'-n_e}$	0.010675
$n_i-n_{F'}$	0.038252

Relative Partial Dispersions	
$\theta_{C,t}$	0.7443
$\theta_{C,A'}$	0.3277
$\theta_{d,C}$	0.2964
$\theta_{e,C}$	0.5337
$\theta_{g,d}$	1.2766
$\theta_{g,F}$	0.5729
$\theta_{h,g}$	0.4918
$\theta_{i,g}$	1.3686
$\theta'_{C,t}$	0.7812
$\theta'_{e,C'}$	0.4811
$\theta'_{F',e}$	0.5189
$\theta'_{i,F}$	1.8593

Thermal Properties	
Strain Point StP (°C)	558
Annealing Point AP (°C)	588
Transformation Temperature Tg (°C)	607
Yield Point At (°C)	630
Softening Point SP (°C)	675
Expansion Coefficients (-30~+70°C)	58
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	70
Thermal Conductivity k (W/m-K)	0.849

Coloring			
$\lambda_{80}$	41	$\lambda_5$	34
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	0.06
350	0.31
360	0.59
370	0.76
380	0.86
390	0.909
400	0.937
420	0.965
440	0.976
460	0.983
480	0.988
500	0.992
550	0.997
600	0.998
650	0.998
700	0.998
800	0.999
900	0.998
1000	0.997
1200	0.997
1400	0.993
1600	0.992
1800	0.984
2000	0.963
2200	0.89
2400	0.70

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0119
$\Delta\theta_{C,A'}$	0.0039
$\Delta\theta_{g,d}$	-0.0059
$\Delta\theta_{g,F}$	-0.0045
$\Delta\theta_{i,g}$	-0.0249

Mechanical Properties	
Young's Modulus E ( $10^8\text{N/m}^2$ )	1121
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	433
Poisson's Ratio $\sigma$	0.295
Knoop Hardness Hk[Class]	640   6
Abrasion Aa	82
Photoelastic Constant $\beta$ (nm/cm/ $10^5\text{Pa}$ )	2.18

Constants of Dispersion Formula	
A <sub>1</sub>	1.89458276E+00
A <sub>2</sub>	2.68702978E-01
A <sub>3</sub>	1.45705526E+00
B <sub>1</sub>	1.02277048E-02
B <sub>2</sub>	4.42801243E-02
B <sub>3</sub>	1.04874927E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	4.2
Phosphate Resistance PR	1.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.34
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$dn/dt$ relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	5.5	6.6	6.6	6.8	7.3	8.0	8.7
-20~0	5.7	6.7	6.7	6.9	7.3	8.1	8.9
0~20	5.8	6.8	6.8	7.0	7.5	8.3	9.1
20~40	5.9	6.9	6.9	7.2	7.6	8.5	9.4
40~60	6.2	7.1	7.2	7.5	7.8	8.8	9.7
60~80	6.4	7.3	7.4	7.7	8.1	9.1	10.1