

# S-LAH55

Code(d) **835427**

Code(e) **839425**

Refractive Index $n_d$	<b>1.83481</b> 1.834807	Abbe Number $\nu_d$	<b>42.7</b> 42.71	Dispersion $n_F-n_C$	<b>0.01954</b> 0.019545
Refractive Index $n_e$	1.839453	Abbe Number $\nu_e$	42.47	Dispersion $n_F-n_{C'}$	0.019767

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.78803
$n_{1970}$	1.97009	1.79558
$n_{1530}$	1.52958	1.80378
$n_{1129}$	1.12864	1.81144
$n_t$	1.01398	1.81413
$n_s$	0.85211	1.81903
$n_{A'}$	0.76819	1.82248
$n_r$	0.70652	1.82571
$n_C$	0.65627	1.82898
$n_{C'}$	0.64385	1.82990
$n_{\text{He-Ne}}$	0.6328	1.83076
$n_D$	0.58929	1.83464
$n_d$	0.58756	1.83481
$n_e$	0.54607	1.83945
$n_F$	0.48613	1.84852
$n_{F'}$	0.47999	1.84966
$n_{\text{He-Cd}}$	0.44157	1.85807
$n_g$	0.435835	1.85955
$n_h$	0.404656	1.86891
$n_i$	0.365015	1.88534

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0122
$\Delta \theta_{C,A'}$	0.0045
$\Delta \theta_{g,d}$	-0.0102
$\Delta \theta_{g,F}$	-0.0082
$\Delta \theta_{i,g}$	-0.0479

Constants of Dispersion Formula	
$A_1$	1.95615766E+00
$A_2$	3.19216215E-01
$A_3$	1.39173189E+00
$B_1$	9.79338965E-03
$B_2$	3.76836296E-02
$B_3$	9.48775271E+01

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.73
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	3.3	4.0	4.0	4.2	4.5	5.1	5.7
-20~ 0	3.4	4.1	4.1	4.4	4.6	5.3	6.0
0~20	3.5	4.2	4.3	4.5	4.8	5.5	6.2
20~40	3.6	4.4	4.5	4.7	5.0	5.7	6.4
40~60	3.7	4.5	4.6	4.9	5.2	5.9	6.7
60~80	3.8	4.7	4.8	5.0	5.4	6.1	6.9

Partial Dispersions	
$n_C-n_t$	0.014841
$n_C-n_{A'}$	0.006490
$n_d-n_C$	0.005832
$n_e-n_C$	0.010478
$n_g-n_d$	0.024741
$n_g-n_F$	0.011028
$n_h-n_g$	0.009363
$n_i-n_g$	0.025790
$n_C-n_t$	0.015762
$n_e-n_{C'}$	0.009557
$n_F-n_e$	0.010210
$n_i-n_F$	0.035675

Thermal Properties	
Strain Point StP (°C)	642
Annealing Point AP (°C)	664
Transformation Temperature Tg (°C)	684
Yield Point At (°C)	711
Softening Point SP (°C)	734
Expansion Coefficients (-30~+70°C)	62
$\alpha$ ( $10^{-7}/^{\circ}\text{C}$ ) (+100~+300°C)	76
Thermal Conductivity k (W/m·K)	0.846

Mechanical Properties	
Young's Modulus E ( $10^8\text{N/m}^2$ )	1249
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	482
Poisson's Ratio $\sigma$	0.296
Knoop Hardness Hk(Class)	750   7
Abrasion Aa	59
Photoelastic Constant $\beta$ (nm/cm/ $10^5\text{Pa}$ )	1.31

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	4.0
Phosphate Resistance PR	1.0

Relative Partial Dispersions	
$\theta_{C,t}$	0.7593
$\theta_{C,A'}$	0.3321
$\theta_{d,C}$	0.2984
$\theta_{e,C}$	0.5361
$\theta_{g,d}$	1.2658
$\theta_{g,F}$	0.5642
$\theta_{h,g}$	0.4790
$\theta_{i,g}$	1.3195
$\theta'_{C,t}$	0.7974
$\theta'_{e,C'}$	0.4835
$\theta'_{F,e}$	0.5165
$\theta'_{i,F}$	1.8048

Coloring			
$\lambda_{80}$	40	$\lambda_5$	32
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	0.01
330	0.18
340	0.44
350	0.65
360	0.78
370	0.86
380	0.913
390	0.941
400	0.958
420	0.974
440	0.982
460	0.988
480	0.991
500	0.994
550	0.998
600	0.998
650	0.998
700	0.998
800	0.998
900	0.998
1000	0.999
1200	0.999
1400	0.996
1600	0.994
1800	0.985
2000	0.962
2200	0.89
2400	0.68