

# S-LAH55V

Code(d) **835427**

Code(e) **839425**

Refractive Index $n_d$	<b>1.83481</b> 1.834807	Abbe Number $\nu_d$	<b>42.73</b>	Dispersion $n_F-n_C$	<b>0.019539</b>
Refractive Index $n_e$	1.839452	Abbe Number $\nu_e$	42.47	Dispersion $n_F-n_C$	0.019764

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.78870
$n_{1970}$	1.97009	1.79602
$n_{1530}$	1.52958	1.80402
$n_{1129}$	1.12864	1.81154
$n_t$	1.01398	1.81420
$n_s$	0.85211	1.81906
$n_{A'}$	0.76819	1.82250
$n_r$	0.70652	1.82572
$n_C$	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	1.85808
$n_g$	0.435835	1.85956
$n_h$	0.404656	1.86893
$n_i$	0.365015	1.88539

Constants of Dispersion Formula	
$A_1$	1.97025325E+00
$A_2$	3.04894140E-01
$A_3$	1.39214665E+00
$B_1$	9.91088134E-03
$B_2$	3.83202295E-02
$B_3$	9.77785249E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	4
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1178
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	470
Poisson's Ratio $\sigma$	0.253
Knoop Hardness Hk[Class]	740   7
Abrasion Aa	59
Photoelastic Constant $\beta$ (nm/cm/ $10^9\text{Pa}$ )	1.30

Partial Dispersions	
$n_C-n_t$	0.014778
$n_C-n_{A'}$	0.006476
$n_d-n_C$	0.005826
$n_e-n_C$	0.010471
$n_g-n_d$	0.024749
$n_g-n_F$	0.011036
$n_h-n_g$	0.009373
$n_i-n_g$	0.025830
$n_C-n_t$	0.015697
$n_e-n_{C'}$	0.009552
$n_F-n_e$	0.010212
$n_i-n_F$	0.035722

Relative Partial Dispersions	
$\theta_{C,t}$	0.7563
$\theta_{C,A'}$	0.3314
$\theta_{d,C}$	0.2982
$\theta_{e,C}$	0.5359
$\theta_{g,d}$	1.2666
$\theta_{g,F}$	0.5648
$\theta_{h,g}$	0.4797
$\theta_{i,g}$	1.3220
$\theta'_{C,t}$	0.7942
$\theta'_{e,C'}$	0.4833
$\theta'_{F,e}$	0.5167
$\theta'_{i,F'}$	1.8074

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0091
$\Delta\theta_{C,A'}$	0.0037
$\Delta\theta_{g,d}$	-0.0094
$\Delta\theta_{g,F}$	-0.0075
$\Delta\theta_{i,g}$	-0.0452

Thermal Properties	
Strain Point StP ( $^{\circ}\text{C}$ )	645
Annealing Point AP ( $^{\circ}\text{C}$ )	672
Transformation Temperature Tg ( $^{\circ}\text{C}$ )	695
Yield Point At ( $^{\circ}\text{C}$ )	718
Softening Point SP ( $^{\circ}\text{C}$ )	749
Expansion Coefficients (-30~+70 $^{\circ}\text{C}$ )	62
$\alpha$ ( $10^{-7}/^{\circ}\text{C}$ ) (+100~+300 $^{\circ}\text{C}$ )	77
Thermal Conductivity k (W/m·K)	0.853

Coloring			
$\lambda_{80}$	400	$\lambda_5$	325
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	363	$\lambda_{0.05}$	327

CCI		
B	G	R
0.00	0.93	0.96

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	0.14
340	0.42
350	0.64
360	0.78
370	0.86
380	0.910
390	0.939
400	0.956
420	0.974
440	0.982
460	0.987
480	0.992
500	0.995
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.995
1800	0.987
2000	0.966
2200	0.909
2400	0.71

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	3.5	4.2	4.3	4.5	4.8	5.4	6.1
-20~ 0	3.5	4.2	4.3	4.5	4.8	5.5	6.2
0~20	3.5	4.2	4.3	4.5	4.8	5.5	6.3
20~40	3.5	4.3	4.3	4.5	4.9	5.6	6.4
40~60	3.5	4.4	4.4	4.7	5.0	5.8	6.6
60~80	3.7	4.5	4.6	4.9	5.2	6.0	6.8

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.73
Remarks	

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