

S-LAH65VS

Code(d) 804465

Code(e) 808463

Refractive Index n_d	1.804 00 1.804 000	Abbe Number ν_d	46.53	Dispersion $n_F - n_C$	0.017 281
Refractive Index n_e	1.808 112	Abbe Number ν_e	46.28	Dispersion $n_{F'} - n_{C'}$	0.017 463

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.761 27
n_{1970}	1.970 09	1.768 33
n_{1530}	1.529 58	1.775 97
n_{1129}	1.128 64	1.783 03
n_t	1.013 98	1.785 48
n_s	0.852 11	1.789 91
$n_{A'}$	0.768 19	1.793 02
n_F	0.706 52	1.795 90
n_C	0.656 27	1.798 82
$n_{C'}$	0.643 85	1.799 64
$n_{\text{He-Ne}}$	0.632 8	1.800 40
n_D	0.589 29	1.803 85
n_d	0.587 56	1.804 00
n_e	0.546 07	1.808 11
n_F	0.486 13	1.816 10
$n_{F'}$	0.479 99	1.817 10
$n_{\text{He-Cd}}$	0.441 57	1.824 45
n_g	0.435 835	1.825 73
n_h	0.404 656	1.833 85
n_i	0.365 015	1.847 92

Constants of Dispersion Formula	
A_1	1.760 684 22E+00
A_2	4.141 289 06E-01
A_3	1.334 154 39E+00
B_1	8.536 071 98E-03
B_2	3.018 263 83E-02
B_3	9.809 421 00E+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	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	122.3
Rigidity Modulus G (GPa)	47.1
Poisson's Ratio σ	0.300
Knoop Hardness Hk[Class]	720
Abrasion Aa	61

Partial Dispersions	
$n_C - n_t$	0.013 334
$n_C - n_{A'}$	0.005 801
$n_d - n_C$	0.005 184
$n_e - n_C$	0.009 296
$n_g - n_d$	0.021 734
$n_g - n_F$	0.009 637
$n_h - n_g$	0.008 114
$n_i - n_g$	0.022 188
$n_{C'} - n_t$	0.014 154
$n_e - n_{C'}$	0.008 476
$n_{F'} - n_e$	0.008 987
$n_i - n_{F'}$	0.030 823

Relative Partial Dispersions	
$\theta_{C,t}$	0.771 6
$\theta_{C,A'}$	0.335 7
$\theta_{d,C}$	0.300 0
$\theta_{e,C}$	0.537 9
$\theta_{g,d}$	1.257 7
$\theta_{g,F}$	0.557 7
$\theta_{h,g}$	0.469 5
$\theta_{i,g}$	1.284 0
$\theta'_{C,t}$	0.810 5
$\theta'_{e,C'}$	0.485 4
$\theta'_{F,e}$	0.514 6
$\theta'_{i,F'}$	1.765 0

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.006 6
$\Delta\theta_{C,A'}$	0.003 4
$\Delta\theta_{g,d}$	-0.010 4
$\Delta\theta_{g,F}$	-0.008 5
$\Delta\theta_{i,g}$	-0.051 4

Coloring			
λ_{80}	380	λ_5	310
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	347	$\lambda_{0.05}$	310
CCI			
B	G	R	
0.00	0.40	0.42	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	0.05
320	0.25
330	0.53
340	0.72
350	0.83
360	0.89
370	0.934
380	0.957
390	0.971
400	0.979
420	0.987
440	0.991
460	0.993
480	0.996
500	0.997
550	0.999
600	0.999
650	0.999
700	0.999
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.998
1 600	0.996
1 800	0.989
2 000	0.968
2 200	0.916
2 400	0.72

Thermal Properties	
Strain Point StP (°C)	648
Annealing Point AP (°C)	677
Transformation Temperature Tg (°C)	696
Yield Point At (°C)	728
Softening Point SP (°C)	745
Expansion Coefficients (-30 °C ~ 70 °C)	65
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	79
Thermal Conductivity λ (W/(m·K))	0.856

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	51
-90 ~ -80	53
-80 ~ -70	54
-70 ~ -60	55
-60 ~ -50	57
-50 ~ -40	58
-40 ~ -30	59
-30 ~ -20	60
-20 ~ -10	61
-10 ~ 0	63
0 ~ 10	64
10 ~ 20	65
20 ~ 30	66
30 ~ 40	67
40 ~ 50	68
50 ~ 60	69
60 ~ 70	70
70 ~ 80	71
80 ~ 90	71
90 ~ 100	72
100 ~ 110	73
110 ~ 120	74
120 ~ 130	75
130 ~ 140	75
140 ~ 150	76
150 ~ 160	77
160 ~ 170	78
170 ~ 180	78
180 ~ 190	79
190 ~ 200	79
200 ~ 210	80
210 ~ 220	81
220 ~ 230	81
230 ~ 240	82
240 ~ 250	82
250 ~ 260	82
260 ~ 270	83
270 ~ 280	83
280 ~ 290	84
290 ~ 300	84

Other Properties	
Photoelastic Constant β nm/(cm ³ 105Pa)	1.27
Specific Gravity d	4.46
Remarks	

Temperature Coefficients of Refractive Index												
Range of Temperature (°C)	$\Delta n_{\text{rel}} / \Delta T$ (10 ⁻⁶ K ⁻¹)											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	2.5	2.7	3.1	3.2	3.3	3.5	3.6	4.1	4.2	4.6	5.1	6.1
-60 ~ -40	2.4	2.6	3.0	3.1	3.2	3.4	3.6	4.1	4.1	4.6	5.1	6.2
-40 ~ -20	2.4	2.6	3.0	3.1	3.1	3.4	3.6	4.1	4.1	4.7	5.2	6.3
-20 ~ 0	2.4	2.6	3.1	3.2	3.3	3.5	3.7	4.2	4.2	4.8	5.4	6.5
0 ~ 20	2.4	2.8	3.2	3.3	3.4	3.6	3.8	4.3	4.4	5.0	5.6	6.7
20 ~ 40	2.6	2.8	3.3	3.5	3.5	3.8	4.0	4.5	4.6	5.1	5.7	7.0
40 ~ 60	2.8	3.0	3.5	3.6	3.7	3.9	4.2	4.7	4.7	5.3	6.0	7.2
60 ~ 80	2.8	3.1	3.6	3.7	3.8	4.0	4.3	4.8	5.0	5.6	6.2	7.5
80 ~ 100	3.0	3.2	3.7	3.9	3.9	4.2	4.5	5.0	5.1	5.7	6.4	7.8
100 ~ 120	3.1	3.4	3.9	4.0	4.1	4.4	4.6	5.2	5.3	5.9	6.6	7.9
120 ~ 140	3.2	3.4	4.0	4.1	4.2	4.5	4.8	5.3	5.4	6.1	6.8	8.2
140 ~ 160	3.2	3.5	4.0	4.2	4.3	4.6	4.9	5.4	5.5	6.2	7.0	8.4
160 ~ 180	3.2	3.5	4.1	4.3	4.3	4.6	4.9	5.5	5.7	6.4	7.2	8.6