

S-LAH52Q

Code(d) **800422**
Code(e) **804420**

Refractive Index n_d	1.799 52 1.799 520	Abbe Number ν_d	42.24	Dispersion $n_F - n_C$	0.018 928
Refractive Index n_e	1.804 018	Abbe Number ν_e	41.98	Dispersion $n_{F'} - n_{C'}$	0.019 154

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.757 08
n_{1970}	1.970 09	1.763 45
n_{1530}	1.529 58	1.770 50
n_{1129}	1.128 64	1.777 32
n_t	1.013 98	1.779 80
n_s	0.852 11	1.784 38
$n_{A'}$	0.768 19	1.787 67
n_F	0.706 52	1.790 76
n_C	0.656 27	1.793 89
$n_{C'}$	0.643 85	1.794 78
n_{He-Ne}	0.632 8	1.795 61
n_D	0.589 29	1.799 35
n_d	0.587 56	1.799 52
n_e	0.546 07	1.804 02
n_F	0.486 13	1.812 82
$n_{F'}$	0.479 99	1.813 93
n_{He-Cd}	0.441 57	1.822 12
n_g	0.435 835	1.823 56
n_h	0.404 656	1.832 71
n_i	0.365 015	1.848 83

Constants of Dispersion Formula	
A_1	1.910 823 18E+00
A_2	2.398 545 89E-01
A_3	1.161 597 33E+00
B_1	1.035 653 52E-02
B_2	4.138 050 81E-02
B_3	9.660 373 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	52.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	109.8
Rigidity Modulus G (GPa)	41.8
Poisson's Ratio σ	0.313
Knoop Hardness Hk[Class]	620
Abrasion Aa	66

Partial Dispersions	
$n_C - n_t$	0.014 094
$n_C - n_{A'}$	0.006 224
$n_d - n_C$	0.005 627
$n_e - n_C$	0.010 125
$n_g - n_d$	0.024 043
$n_g - n_F$	0.010 742
$n_h - n_g$	0.009 149
$n_i - n_g$	0.025 268
$n_{C'} - n_t$	0.014 980
$n_e - n_{C'}$	0.009 239
$n_{F'} - n_e$	0.009 915
$n_i - n_{F'}$	0.034 898

Relative Partial Dispersions	
$\theta_{C,t}$	0.744 6
$\theta_{C,A'}$	0.328 8
$\theta_{d,C}$	0.297 3
$\theta_{e,C}$	0.534 9
$\theta_{g,d}$	1.270 2
$\theta_{g,F}$	0.567 5
$\theta_{h,g}$	0.483 4
$\theta_{i,g}$	1.335 0
$\theta'_{C,t}$	0.782 1
$\theta'_{e,C'}$	0.482 4
$\theta'_{F',e}$	0.517 6
$\theta'_{i,F'}$	1.822 0

Anomalous dispersion	
$\Delta\theta_{C,t}$	-0.000 3
$\Delta\theta_{C,A'}$	0.001 7
$\Delta\theta_{g,d}$	-0.006 8
$\Delta\theta_{g,F}$	-0.005 6
$\Delta\theta_{i,g}$	-0.036 3

Coloring			
λ_{80}	390	λ_5	335
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	365	$\lambda_{0.05}$	334
CCI			
B	G	R	
0.00	0.67	0.68	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	0.13
350	0.46
360	0.73
370	0.86
380	0.926
390	0.954
400	0.969
420	0.982
440	0.988
460	0.992
480	0.995
500	0.997
550	0.999
600	0.998
650	0.999
700	0.999
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.997
1 600	0.996
1 800	0.989
2 000	0.967
2 200	0.924
2 400	0.75

Thermal Properties	
Strain Point StP (°C)	553
Annealing Point AP (°C)	576
Transformation Temperature Tg (°C)	596
Yield Point At (°C)	627
Softening Point SP (°C)	651
Expansion Coefficients (-30 °C ~ 70 °C)	63
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	76
Thermal Conductivity λ (W/(m·K))	0.852

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	48
-90 ~ -80	50
-80 ~ -70	51
-70 ~ -60	52
-60 ~ -50	54
-50 ~ -40	55
-40 ~ -30	56
-30 ~ -20	57
-20 ~ -10	59
-10 ~ 0	60
0 ~ 10	61
10 ~ 20	62
20 ~ 30	63
30 ~ 40	64
40 ~ 50	65
50 ~ 60	66
60 ~ 70	67
70 ~ 80	68
80 ~ 90	69
90 ~ 100	70
100 ~ 110	71
110 ~ 120	71
120 ~ 130	72
130 ~ 140	73
140 ~ 150	74
150 ~ 160	74
160 ~ 170	75
170 ~ 180	76
180 ~ 190	76
190 ~ 200	77
200 ~ 210	77
210 ~ 220	78
220 ~ 230	78
230 ~ 240	79
240 ~ 250	79
250 ~ 260	80
260 ~ 270	80
270 ~ 280	80
280 ~ 290	81
290 ~ 300	81

Other Properties	
Photoelastic Constant β nm/(cm ³ 105Pa)	2.31
Specific Gravity d	4.47
Remarks	

Temperature Coefficients of Refractive Index												
Range of Temperature (°C)	$\Delta n_{rel} / \Delta T$ (10 ⁻⁶ K ⁻¹)											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	7.2	7.5	8.2	8.4	8.4	8.8	9.1	9.8	9.9	10.7	11.4	13.1
-60 ~ -40	7.1	7.4	8.1	8.3	8.4	8.7	9.0	9.7	9.9	10.7	11.5	13.2
-40 ~ -20	7.1	7.5	8.1	8.3	8.4	8.7	9.1	9.8	9.9	10.8	11.6	13.3
-20 ~ 0	7.2	7.5	8.3	8.5	8.6	8.9	9.3	10.0	10.1	10.9	11.9	13.6
0 ~ 20	7.3	7.7	8.4	8.6	8.7	9.1	9.4	10.1	10.2	11.1	12.1	13.9
20 ~ 40	7.5	7.8	8.6	8.9	8.9	9.3	9.7	10.4	10.5	11.5	12.4	14.3
40 ~ 60	7.6	8.0	8.8	9.1	9.1	9.5	9.9	10.7	10.8	11.7	12.7	14.7
60 ~ 80	7.9	8.3	9.0	9.3	9.3	9.7	10.1	10.9	11.2	12.1	13.1	15.1
80 ~ 100	8.1	8.5	9.2	9.5	9.6	10.0	10.4	11.2	11.3	12.3	13.4	15.5
100 ~ 120	8.3	8.7	9.5	9.7	9.8	10.2	10.7	11.5	11.6	12.7	13.7	15.8
120 ~ 140	8.4	8.9	9.7	9.9	10.0	10.5	10.9	11.8	11.9	13.0	14.0	16.1
140 ~ 160	8.6	9.0	9.9	10.1	10.2	10.7	11.1	12.0	12.1	13.2	14.3	16.6
160 ~ 180	8.7	9.1	10.0	10.3	10.4	10.8	11.3	12.2	12.4	13.5	14.7	16.9

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