

S-LAL61Q

Code(d) 741526

Code(e) 744523

Refractive Index n_d	1.741 00 1.741 000	Abbe Number ν_d	52.60	Dispersion $n_F - n_C$	0.014 087
Refractive Index n_e	1.744 357	Abbe Number ν_e	52.36	Dispersion $n_{F'} - n_{C'}$	0.014 216

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.702 06
n_{1970}	1.970 09	1.709 13
n_{1530}	1.529 58	1.716 62
n_{1129}	1.128 64	1.723 22
n_t	1.013 98	1.725 41
n_s	0.852 11	1.729 25
$n_{A'}$	0.768 19	1.731 89
n_F	0.706 52	1.734 31
n_C	0.656 27	1.736 73
$n_{C'}$	0.643 85	1.737 41
n_{He-Ne}	0.632 8	1.738 04
n_D	0.589 29	1.740 87
n_d	0.587 56	1.741 00
n_e	0.546 07	1.744 36
n_F	0.486 13	1.750 82
$n_{F'}$	0.479 99	1.751 63
n_{He-Cd}	0.441 57	1.757 51
n_g	0.435 835	1.758 54
n_h	0.404 656	1.764 97
n_i	0.365 015	1.775 98

Constants of Dispersion Formula	
A_1	1.381 442 25E+00
A_2	5.876 900 89E-01
A_3	1.152 454 65E+00
B_1	6.691 926 52E-03
B_2	2.159 812 33E-02
B_3	8.719 233 00E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	51.0
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	116.5
Rigidity Modulus G (GPa)	45.1
Poisson's Ratio σ	0.292
Knoop Hardness Hk[Class]	710 7
Abrasion Aa	66

Partial Dispersions	
$n_C - n_t$	0.011 323
$n_C - n_{A'}$	0.004 841
$n_d - n_C$	0.004 267
$n_e - n_C$	0.007 624
$n_g - n_d$	0.017 538
$n_g - n_F$	0.007 718
$n_h - n_g$	0.006 432
$n_i - n_g$	0.017 446
$n_{C'} - n_t$	0.012 001
$n_e - n_{C'}$	0.006 946
$n_{F'} - n_e$	0.007 270
$n_i - n_{F'}$	0.024 357

Relative Partial Dispersions	
$\theta_{C,t}$	0.803 8
$\theta_{C,A'}$	0.343 7
$\theta_{d,C}$	0.302 9
$\theta_{e,C}$	0.541 2
$\theta_{g,d}$	1.245 0
$\theta_{g,F}$	0.547 9
$\theta_{h,g}$	0.456 6
$\theta_{i,g}$	1.238 4
$\theta'_{C,t}$	0.844 2
$\theta'_{e,C'}$	0.488 6
$\theta'_{F',e}$	0.511 4
$\theta'_{i,F'}$	1.713 4

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.010 3
$\Delta\theta_{C,A'}$	0.004 1
$\Delta\theta_{g,d}$	-0.010 5
$\Delta\theta_{g,F}$	-0.008 5
$\Delta\theta_{i,g}$	-0.046 2

Coloring			
λ_{80}	360	λ_5	300
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	337	$\lambda_{0.05}$	298
CCI			
B	G	R	
0.00	0.26	0.26	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	0.06
310	0.26
320	0.52
330	0.72
340	0.83
350	0.902
360	0.940
370	0.962
380	0.975
390	0.983
400	0.988
420	0.992
440	0.994
460	0.996
480	0.998
500	0.999
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	0.995
1 600	0.995
1 800	0.986
2 000	0.962
2 200	0.89
2 400	0.66

Thermal Properties	
Strain Point StP (°C)	644
Annealing Point AP (°C)	670
Transformation Temperature Tg (°C)	687
Yield Point At (°C)	713
Softening Point SP (°C)	737
Expansion Coefficients (-30 °C ~ 70 °C)	61
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	74
Thermal Conductivity λ (W/(m·K))	0.850

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	48
-90 ~ -80	49
-80 ~ -70	50
-70 ~ -60	52
-60 ~ -50	53
-50 ~ -40	54
-40 ~ -30	55
-30 ~ -20	56
-20 ~ -10	57
-10 ~ 0	58
0 ~ 10	59
10 ~ 20	60
20 ~ 30	61
30 ~ 40	62
40 ~ 50	63
50 ~ 60	64
60 ~ 70	65
70 ~ 80	66
80 ~ 90	67
90 ~ 100	68
100 ~ 110	68
110 ~ 120	69
120 ~ 130	70
130 ~ 140	71
140 ~ 150	71
150 ~ 160	72
160 ~ 170	73
170 ~ 180	73
180 ~ 190	74
190 ~ 200	75
200 ~ 210	75
210 ~ 220	76
220 ~ 230	76
230 ~ 240	77
240 ~ 250	77
250 ~ 260	78
260 ~ 270	78
270 ~ 280	78
280 ~ 290	79
290 ~ 300	79

Other Properties	
Photoelastic Constant β nm/(cm ³ 105Pa)	1.47
Specific Gravity d	4.09
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	2.8	2.9	3.2	3.3	3.3	3.5	3.6	3.9	4.0	4.4	4.8	5.7
-60 ~ -40	2.7	2.8	3.1	3.2	3.3	3.4	3.5	3.8	3.9	4.3	4.7	5.5
-40 ~ -20	2.7	2.8	3.1	3.2	3.3	3.4	3.6	3.9	3.9	4.3	4.7	5.6
-20 ~ 0	2.8	2.9	3.2	3.3	3.3	3.5	3.6	3.9	4.0	4.5	4.9	5.7
0 ~ 20	2.9	3.0	3.3	3.4	3.4	3.6	3.7	4.1	4.2	4.6	5.0	5.8
20 ~ 40	3.0	3.1	3.4	3.5	3.5	3.7	3.8	4.2	4.2	4.7	5.1	6.0
40 ~ 60	3.1	3.2	3.5	3.6	3.6	3.8	4.0	4.4	4.4	4.8	5.3	6.1
60 ~ 80	3.2	3.4	3.7	3.8	3.8	4.0	4.1	4.4	4.5	4.9	5.3	6.2
80 ~ 100	3.2	3.4	3.7	3.9	3.9	4.1	4.2	4.6	4.6	5.0	5.5	6.4
100 ~ 120	3.3	3.5	3.8	3.9	3.9	4.1	4.3	4.7	4.7	5.1	5.6	6.5
120 ~ 140	3.3	3.5	3.9	4.0	4.0	4.2	4.4	4.7	4.8	5.2	5.6	6.5
140 ~ 160	3.4	3.6	3.9	4.0	4.0	4.2	4.4	4.7	4.8	5.2	5.6	6.6
160 ~ 180	3.4	3.5	3.8	3.9	4.0	4.1	4.3	4.7	4.7	5.1	5.6	6.5

OHARA 25-04