S-LAH64

Code(d) **788474**
Code(e) **792471**

Refractive Index n_d	**1.788 00** 1.788 001	Abbe Number ν_d	**47.37**	Dispersion $n_F - n_C$	**0.016 636**
Refractive Index n_e	1.791 961	Abbe Number ν_e	47.12	Dispersion $n_{F'} - n_{C'}$	0.016 806

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.744 66
n_{1970}	1.970 09	1.752 20
n_{1530}	1.529 58	1.760 26
n_{1129}	1.128 64	1.767 50
n_t	1.013 98	1.769 96
n_s	0.852 11	1.774 33
$n_{A'}$	0.768 19	1.777 37
n_r	0.706 52	1.780 18
n_C	0.656 27	1.783 00
$n_{C'}$	0.643 85	1.783 79
$n_{He\text{-}Ne}$	0.632 8	1.784 53
n_D	0.589 29	1.787 85
n_d	0.587 56	1.788 00
n_e	0.546 07	1.791 96
n_F	0.486 13	1.799 63
$n_{F'}$	0.479 99	1.800 60
$n_{He\text{-}Cd}$	0.441 57	1.807 65
n_g	0.435 835	1.808 88
n_h	0.404 656	1.816 66
n_i	0.365 015	1.830 16

Constants of Dispersion Formula	
A_1	1.830 214 53E+00
A_2	2.915 635 90E-01
A_3	1.285 440 24E+00
B_1	9.048 232 90E-03
B_2	3.307 566 89E-02
B_3	8.936 755 01E+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)	122.4	
Rigidity Modulus G (GPa)	47.3	
Poisson's Ratio σ	0.294	
Knoop Hardness Hk[Class]	750	7
Abrasion Aa	63	

Partial Dispersions	
$n_C - n_t$	0.013 038
$n_C - n_{A'}$	0.005 628
$n_d - n_C$	0.005 003
$n_e - n_C$	0.008 963
$n_g - n_d$	0.020 881
$n_g - n_F$	0.009 248
$n_h - n_g$	0.007 782
$n_i - n_g$	0.021 279
$n_{C'} - n_t$	0.013 830
$n_e - n_{C'}$	0.008 171
$n_{F'} - n_e$	0.008 635
$n_i - n_{F'}$	0.029 565

Relative Partial Dispersions	
$\theta_{C,t}$	0.783 7
$\theta_{C,A'}$	0.338 3
$\theta_{d,C}$	0.300 7
$\theta_{e,C}$	0.538 8
$\theta_{g,d}$	1.255 2
$\theta_{g,F}$	0.555 9
$\theta_{h,g}$	0.467 8
$\theta_{i,g}$	1.279 1
$\theta'_{C,t}$	0.822 9
$\theta'_{e,C'}$	0.486 2
$\theta'_{F,e}$	0.513 8
$\theta'_{i,F'}$	1.759 2

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.014 8
$\Delta\theta_{C,A'}$	0.005 0
$\Delta\theta_{g,d}$	-0.011 1
$\Delta\theta_{g,F}$	-0.008 9
$\Delta\theta_{i,g}$	-0.049 3

Coloring			
λ_{80}	380	λ_5	315
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	354	$\lambda_{0.05}$	317

CCI		
B	G	R
0.00	0.63	0.65

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	0.13
330	0.40
340	0.63
350	0.77
360	0.85
370	0.912
380	0.943
390	0.961
400	0.972
420	0.981
440	0.986
460	0.990
480	0.993
500	0.996
550	0.998
600	0.998
650	0.998
700	0.998
800	0.999
900	0.998
1 000	0.997
1 200	0.996
1 400	0.995
1 600	0.993
1 800	0.987
2 000	0.966
2 200	0.915
2 400	0.68

Thermal Properties		
Strain Point StP (°C)		644
Annealing Point AP (°C)		660
Transformation Temperature Tg (°C)		685
Yield Point At (°C)		711
Softening Point SP (°C)		732
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	62
	(100 °C ~ 300 °C)	76
Thermal Conductivity λ (W/(m·K))		0.856

Linear coefficient of thermal expansion	
Temperature range (°C)	α_l (10^{-7} K^{-1})
-100 ~ -90	49
-90 ~ -80	50
-80 ~ -70	51
-70 ~ -60	53
-60 ~ -50	54
-50 ~ -40	55
-40 ~ -30	56
-30 ~ -20	57
-20 ~ -10	58
-10 ~ 0	59
0 ~ 10	60
10 ~ 20	61
20 ~ 30	62
30 ~ 40	63
40 ~ 50	64
50 ~ 60	65
60 ~ 70	66
70 ~ 80	67
80 ~ 90	68
90 ~ 100	69
100 ~ 110	69
110 ~ 120	70
120 ~ 130	71
130 ~ 140	72
140 ~ 150	72
150 ~ 160	73
160 ~ 170	74
170 ~ 180	74
180 ~ 190	75
190 ~ 200	76
200 ~ 210	76
210 ~ 220	77
220 ~ 230	77
230 ~ 240	78
240 ~ 250	78
250 ~ 260	79
260 ~ 270	79
270 ~ 280	80
280 ~ 290	80
290 ~ 300	80

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.40
Specific Gravity d	4.30
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	2.7	2.8	3.1	3.3	3.4	3.5	3.7	4.0	4.1	4.5	4.9	5.8
-60 ~ -40	2.5	2.6	3.0	3.2	3.2	3.4	3.5	3.9	3.9	4.5	4.9	5.7
-40 ~ -20	2.4	2.6	3.0	3.1	3.1	3.3	3.5	4.0	4.0	4.5	4.9	5.9
-20 ~ 0	2.4	2.6	3.0	3.2	3.2	3.4	3.6	4.0	4.1	4.5	5.0	6.1
0 ~ 20	2.4	2.7	3.1	3.2	3.3	3.5	3.7	4.1	4.2	4.7	5.3	6.3
20 ~ 40	2.5	2.7	3.2	3.4	3.4	3.7	3.9	4.3	4.4	4.9	5.5	6.5
40 ~ 60	2.6	2.8	3.4	3.5	3.6	3.8	4.0	4.5	4.6	5.2	5.7	6.9
60 ~ 80	2.8	3.0	3.5	3.6	3.7	3.9	4.2	4.7	4.8	5.4	6.1	7.2
80 ~ 100	2.8	3.2	3.7	3.8	3.9	4.2	4.4	4.9	5.0	5.6	6.3	7.5
100 ~ 120	3.1	3.3	3.8	4.0	4.1	4.3	4.6	5.2	5.2	5.9	6.6	7.8
120 ~ 140	3.2	3.5	4.0	4.2	4.2	4.5	4.8	5.4	5.4	6.1	6.8	8.2
140 ~ 160	3.3	3.6	4.1	4.3	4.4	4.7	4.9	5.6	5.6	6.4	7.1	8.6
160 ~ 180	3.3	3.6	4.2	4.4	4.5	4.8	5.1	5.7	5.8	6.7	7.4	8.8

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.