S-LAH71

Code(d) **850323**
Code(e) **856320**

Refractive Index n_d	**1.850 26** 1.850 259	Abbe Number ν_d	**32.27**	Dispersion $n_F - n_C$	**0.026 349**
Refractive Index n_e	1.856 493	Abbe Number ν_e	32.03	Dispersion $n_{F'} - n_{C'}$	0.026 744

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.800 95
n_{1970}	1.970 09	1.806 85
n_{1530}	1.529 58	1.813 80
n_{1129}	1.128 64	1.821 33
n_t	1.013 98	1.824 29
n_s	0.852 11	1.830 04
$n_{A'}$	0.768 19	1.834 30
n_r	0.706 52	1.838 38
n_C	0.656 27	1.842 59
$n_{C'}$	0.643 85	1.843 78
$n_{He\text{-}Ne}$	0.632 8	1.844 91
n_D	0.589 29	1.850 03
n_d	0.587 56	1.850 26
n_e	0.546 07	1.856 49
n_F	0.486 13	1.868 93
$n_{F'}$	0.479 99	1.870 53
$n_{He\text{-}Cd}$	0.441 57	1.882 43
n_g	0.435 835	1.884 56
n_h	0.404 656	1.898 27
n_i	0.365 015	

Constants of Dispersion Formula	
A_1	1.982 800 31E+00
A_2	3.167 584 50E-01
A_3	2.444 726 46E+00
B_1	1.189 874 59E-02
B_2	5.271 560 01E-02
B_3	2.132 206 97E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	2.0
Phosphate Resistance PR	1.0

Mechanical Properties		
Young's Modulus E (GPa)	110.0	
Rigidity Modulus G (GPa)	42.9	
Poisson's Ratio σ	0.281	
Knoop Hardness Hk[Class]	590	6
Abrasion Aa	136	

Partial Dispersions	
$n_C - n_t$	0.018 292
$n_C - n_{A'}$	0.008 288
$n_d - n_C$	0.007 673
$n_e - n_C$	0.013 907
$n_g - n_d$	0.034 299
$n_g - n_F$	0.015 623
$n_h - n_g$	0.013 716
$n_i - n_g$	
$n_{C'} - n_t$	0.019 490
$n_e - n_{C'}$	0.012 709
$n_{F'} - n_e$	0.014 035
$n_i - n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.694 2
$\theta_{C,A'}$	0.314 5
$\theta_{d,C}$	0.291 2
$\theta_{e,C}$	0.527 8
$\theta_{g,d}$	1.301 7
$\theta_{g,F}$	0.592 9
$\theta_{h,g}$	0.520 6
$\theta_{i,g}$	
$\theta'_{C,t}$	0.728 8
$\theta'_{e,C'}$	0.475 2
$\theta'_{F,e}$	0.524 8
$\theta'_{i,F'}$	

Anomalous dispersion	
$\Delta\theta_{C,t}$	-0.003 9
$\Delta\theta_{C,A'}$	-0.000 5
$\Delta\theta_{g,d}$	0.004 0
$\Delta\theta_{g,F}$	0.003 6
$\Delta\theta_{i,g}$	

Coloring			
λ_{80}		λ_5	370
λ_{70}	425		

Internal transmission			
$\lambda_{0.80}$	417	$\lambda_{0.05}$	364

CCI		
B	G	R
0.00	6.64	6.89

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	
350	
360	0.01
370	0.11
380	0.29
390	0.49
400	0.65
420	0.83
440	0.913
460	0.945
480	0.963
500	0.976
550	0.992
600	0.995
650	0.995
700	0.997
800	0.998
900	0.999
1 000	0.999
1 200	0.999
1 400	0.999
1 600	0.998
1 800	0.993
2 000	0.989
2 200	0.982
2 400	0.959

Thermal Properties		
Strain Point StP (℃)		656
Annealing Point AP (℃)		685
Transformation Temperature Tg (℃)		704
Yield Point At (℃)		753
Softening Point SP (℃)		802
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	78
	(100 ℃ ~ 300 ℃)	93
Thermal Conductivity λ (W/(m·K))		0.874

Linear coefficient of thermal expansion	
Temperature range (℃)	α_l (10^{-7} K^{-1})
-100 ~ -90	63
-90 ~ -80	64
-80 ~ -70	66
-70 ~ -60	67
-60 ~ -50	68
-50 ~ -40	70
-40 ~ -30	71
-30 ~ -20	72
-20 ~ -10	74
-10 ~ 0	75
0 ~ 10	76
10 ~ 20	77
20 ~ 30	78
30 ~ 40	79
40 ~ 50	80
50 ~ 60	81
60 ~ 70	83
70 ~ 80	84
80 ~ 90	84
90 ~ 100	85
100 ~ 110	86
110 ~ 120	87
120 ~ 130	88
130 ~ 140	89
140 ~ 150	90
150 ~ 160	91
160 ~ 170	91
170 ~ 180	92
180 ~ 190	93
190 ~ 200	93
200 ~ 210	94
210 ~ 220	95
220 ~ 230	95
230 ~ 240	96
240 ~ 250	96
250 ~ 260	97
260 ~ 270	97
270 ~ 280	98
280 ~ 290	98
290 ~ 300	99

Temperature Coefficients of Refractive Index												
Range of Temperature (℃)	$\Delta n_{rel}/\Delta T$ (10^{-6} K^{-1})											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	0.5	0.8	1.4	1.6	1.7	2.0	2.4	3.3	3.4	4.5	5.8	-
-60 ~ -40	0.5	0.8	1.5	1.7	1.8	2.1	2.5	3.3	3.4	4.6	5.9	-
-40 ~ -20	0.6	1.0	1.6	1.8	1.9	2.2	2.6	3.6	3.7	4.8	6.1	-
-20 ~ 0	0.8	1.1	1.7	1.9	2.0	2.4	2.9	3.7	3.9	5.0	6.4	-
0 ~ 20	0.9	1.2	1.9	2.1	2.2	2.6	3.1	4.0	4.1	5.3	6.7	-
20 ~ 40	1.1	1.4	2.1	2.3	2.4	2.8	3.2	4.2	4.3	5.7	7.1	-
40 ~ 60	1.2	1.6	2.3	2.5	2.6	3.0	3.4	4.4	4.5	5.9	7.4	-
60 ~ 80	1.3	1.7	2.5	2.7	2.7	3.2	3.7	4.7	4.8	6.1	7.7	-
80 ~ 100	1.5	1.8	2.5	2.8	2.9	3.3	3.8	4.8	5.0	6.4	7.9	-
100 ~ 120	1.5	1.9	2.6	2.9	3.0	3.4	3.9	4.9	5.1	6.5	8.2	-
120 ~ 140	1.6	1.9	2.7	3.0	3.0	3.5	4.0	5.0	5.2	6.6	8.3	-
140 ~ 160	1.5	1.9	2.7	3.0	3.0	3.5	4.0	5.2	5.2	6.8	8.4	-
160 ~ 180	1.4	1.8	2.6	3.0	3.1	3.6	4.1	5.2	5.3	6.8	8.5	-

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.52
Specific Gravity d	4.36
Remarks	

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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.