S-LAH55V

Code(d) **835427**
Code(e) **839425**

Refractive Index n_d	**1.834 81** 1.834 807	Abbe Number ν_d	**42.73**	Dispersion $n_F - n_C$	**0.019 539**
Refractive Index n_e	1.839 452	Abbe Number ν_e	42.47	Dispersion $n_{F'} - n_{C'}$	0.019 764

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.788 70
n_{1970}	1.970 09	1.796 02
n_{1530}	1.529 58	1.804 02
n_{1129}	1.128 64	1.811 54
n_t	1.013 98	1.814 20
n_s	0.852 11	1.819 06
$n_{A'}$	0.768 19	1.822 50
n_r	0.706 52	1.825 72
n_C	0.656 27	1.828 98
$n_{C'}$	0.643 85	1.829 90
n_{He-Ne}	0.632 8	1.830 76
n_D	0.589 29	1.834 64
n_d	0.587 56	1.834 81
n_e	0.546 07	1.839 45
n_F	0.486 13	1.848 52
$n_{F'}$	0.479 99	1.849 66
n_{He-Cd}	0.441 57	1.858 08
n_g	0.435 835	1.859 56
n_h	0.404 656	1.868 93
n_i	0.365 015	1.885 39

Constants of Dispersion Formula	
A_1	1.970 253 25E+00
A_2	3.048 941 40E-01
A_3	1.392 146 65E+00
B_1	9.910 881 34E-03
B_2	3.832 022 95E-02
B_3	9.777 852 49E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	4
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	1.0

Mechanical Properties		
Young's Modulus E (GPa)	117.8	
Rigidity Modulus G (GPa)	47.0	
Poisson's Ratio σ	0.253	
Knoop Hardness Hk[Class]	720	7
Abrasion Aa	63	

Partial Dispersions	
$n_C - n_t$	0.014 778
$n_C - n_{A'}$	0.006 476
$n_d - n_C$	0.005 826
$n_e - n_C$	0.010 471
$n_g - n_d$	0.024 749
$n_g - n_F$	0.011 036
$n_h - n_g$	0.009 373
$n_i - n_g$	0.025 830
$n_{C'} - n_t$	0.015 697
$n_e - n_{C'}$	0.009 552
$n_{F'} - n_e$	0.010 212
$n_i - n_{F'}$	0.035 722

Relative Partial Dispersions	
$\theta_{C,t}$	0.756 3
$\theta_{C,A'}$	0.331 4
$\theta_{d,C}$	0.298 2
$\theta_{e,C}$	0.535 9
$\theta_{g,d}$	1.266 6
$\theta_{g,F}$	0.564 8
$\theta_{h,g}$	0.479 7
$\theta_{i,g}$	1.322 0
$\theta'_{C',t}$	0.794 2
$\theta'_{e,C'}$	0.483 3
$\theta'_{F',e}$	0.516 7
$\theta'_{i,F'}$	1.807 4

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.009 1
$\Delta\theta_{C,A'}$	0.003 7
$\Delta\theta_{g,d}$	-0.009 4
$\Delta\theta_{g,F}$	-0.007 5
$\Delta\theta_{i,g}$	-0.045 2

Coloring			
λ_{80}	400	λ_5	325
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	363	$\lambda_{0.05}$	327

CCI		
B	G	R
0.00	0.93	0.96

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	0.14
340	0.42
350	0.64
360	0.78
370	0.86
380	0.910
390	0.939
400	0.956
420	0.974
440	0.982
460	0.987
480	0.992
500	0.995
550	0.998
600	0.998
650	0.998
700	0.999
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.997
1 600	0.995
1 800	0.987
2 000	0.966
2 200	0.909
2 400	0.71

Thermal Properties		
Strain Point StP (°C)		645
Annealing Point AP (°C)		672
Transformation Temperature Tg (°C)		697
Yield Point At (°C)		717
Softening Point SP (°C)		749
Expansion Coefficients α_l (10^{-7} K^{-1})	(-30 ℃ ~ 70 ℃)	65
	(100 °C ~ 300 °C)	78
Thermal Conductivity λ (W/(m·K))		0.853

Linear coefficient of thermal expansion	
Temperature range (°C)	α_l (10^{-7} K^{-1})
-100 ～ -90	52
-90 ～ -80	53
-80 ～ -70	54
-70 ～ -60	55
-60 ～ -50	56
-50 ～ -40	58
-40 ～ -30	59
-30 ～ -20	60
-20 ～ -10	61
-10 ～ 0	62
0 ～ 10	63
10 ～ 20	64
20 ～ 30	65
30 ～ 40	66
40 ～ 50	67
50 ～ 60	68
60 ～ 70	68
70 ～ 80	69
80 ～ 90	70
90 ～ 100	71
100 ～ 110	72
110 ～ 120	72
120 ～ 130	73
130 ～ 140	74
140 ～ 150	75
150 ～ 160	75
160 ～ 170	76
170 ～ 180	77
180 ～ 190	77
190 ～ 200	78
200 ～ 210	78
210 ～ 220	79
220 ～ 230	79
230 ～ 240	80
240 ～ 250	80
250 ～ 260	81
260 ～ 270	81
270 ～ 280	82
280 ～ 290	82
290 ～ 300	82

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	1.30
Specific Gravity d	4.73
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	3.0	3.3	3.4	3.6	3.7	3.9	4.3	4.4	5.0	5.5	6.6
-60 ~ -40	2.5	2.7	3.1	3.2	3.3	3.6	3.8	4.2	4.3	4.8	5.5	6.5
-40 ~ -20	2.4	2.6	3.1	3.2	3.3	3.5	3.7	4.2	4.3	4.9	5.5	6.7
-20 ~ 0	2.4	2.6	3.1	3.2	3.2	3.5	3.7	4.4	4.4	5.0	5.7	7.1
0 ~ 20	2.4	2.6	3.1	3.3	3.3	3.6	3.9	4.5	4.5	5.3	6.0	7.3
20 ~ 40	2.5	2.7	3.3	3.4	3.5	3.8	4.0	4.6	4.7	5.4	6.3	7.8
40 ~ 60	2.6	2.8	3.4	3.6	3.6	3.9	4.2	4.9	5.0	5.8	6.6	8.2
60 ~ 80	2.6	2.9	3.5	3.7	3.8	4.1	4.5	5.2	5.3	6.1	6.9	8.6
80 ~ 100	2.8	3.1	3.7	3.9	4.0	4.3	4.7	5.4	5.5	6.5	7.3	9.1
100 ~ 120	2.9	3.3	3.9	4.2	4.2	4.6	4.9	5.7	5.8	6.7	7.6	9.6
120 ~ 140	3.1	3.4	4.1	4.4	4.4	4.8	5.2	6.0	6.1	7.0	8.0	10.1
140 ~ 160	3.2	3.6	4.3	4.5	4.6	5.0	5.4	6.2	6.3	7.3	8.5	10.5
160 ~ 180	3.3	3.7	4.5	4.8	4.9	5.3	5.7	6.6	6.7	7.8	8.8	11.0

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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.