S-LAH88

Code(d) **917316**
Code(e) **923314**

Refractive Index	n_d	**1.91650** 1.916500	Abbe Number	ν_d	**31.60**	Dispersion	n_F-n_C	**0.028999**
Refractive Index	n_e	1.923361	Abbe Number	ν_e	31.38	Dispersion	$n_{F'}$-$n_{C'}$	0.029426

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.85814
n_{1970}	1.97009	1.86607
n_{1530}	1.52958	1.87503
n_{1129}	1.12864	1.88413
n_t	1.01398	1.88756
n_s	0.85211	1.89408
$n_{A'}$	0.76819	1.89884
n_r	0.70652	1.90338
n_C	0.65627	1.90803
$n_{C'}$	0.64385	1.90936
n_{He-Ne}	0.6328	1.91060
n_D	0.58929	1.91625
n_d	0.58756	1.91650
n_e	0.54607	1.92336
n_F	0.48613	1.93703
$n_{F'}$	0.47999	1.93878
n_{He-Cd}	0.44157	1.95185
n_g	0.435835	1.95418
n_h	0.404656	1.96920
n_i	0.365015	

Constants of Dispersion Formula	
A_1	2.12844340E+00
A_2	4.05082139E-01
A_3	1.67918461E+00
B_1	1.17309815E-02
B_2	5.08706599E-02
B_3	1.07091456E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	3.2
Phosphate Resistance PR	1.1

Mechanical Properties	
Young's Modulus E (GPa)	113.5
Rigidity Modulus G (GPa)	45.7
Poisson's Ratio σ	0.242
Knoop Hardness Hk[Class]	670 * 7
Abrasion Aa	69

Partial Dispersions	
n_C-n_t	0.020471
n_C-$n_{A'}$	0.009192
n_d-n_C	0.008465
n_e-n_C	0.015326
n_g-n_d	0.037676
n_g-n_F	0.017142
n_h-n_g	0.015029
n_i-n_g	
$n_{C'}$-n_t	0.021794
n_e-$n_{C'}$	0.014003
$n_{F'}$-n_e	0.015423
n_i-$n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7059
$\theta_{C,A'}$	0.3170
$\theta_{d,C}$	0.2919
$\theta_{e,C}$	0.5285
$\theta_{g,d}$	1.2992
$\theta_{g,F}$	0.5911
$\theta_{h,g}$	0.5183
$\theta_{i,g}$	
$\theta'_{C',t}$	0.7406
$\theta'_{e,C'}$	0.4759
$\theta'_{F',e}$	0.5241
$\theta'_{i,F'}$	

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0110
$\Delta\theta_{C,A'}$	0.0029
$\Delta\theta_{g,d}$	0.0001
$\Delta\theta_{g,F}$	0.0008
$\Delta\theta_{i,g}$	

Thermal Properties		
Strain Point StP (℃)		581
Annealing Point AP (℃)		601
Transformation Temperature Tg (℃)		616
Yield Point At (℃)		642
Softening Point SP (℃)		677
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	57
	(+100~+300℃)	71
Thermal Conductivity λ W/(m·K)		0.894

Coloring			
λ_{80}		λ_5	355
λ_{70}	400		

Internal transmission			
$\lambda_{0.80}$	389	$\lambda_{0.05}$	353

CCI		
B	G	R
0.00	2.51	2.67

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.01
360	0.16
370	0.45
380	0.68
390	0.81
400	0.87
420	0.936
440	0.961
460	0.973
480	0.981
500	0.987
550	0.994
600	0.996
650	0.997
700	0.998
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.995
1600	0.994
1800	0.985
2000	0.963
2200	0.89
2400	0.71

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}K^{-1}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	5.3	6.4	6.5	6.8	7.3	8.5	9.7
-20~ 0	5.4	6.6	6.6	7.0	7.5	8.7	10.1
0~20	5.4	6.7	6.8	7.2	7.7	9.0	10.4
20~40	5.5	6.8	6.9	7.3	7.8	9.1	10.6
40~60	5.6	6.9	7.0	7.4	8.0	9.4	10.9
60~80	5.8	7.1	7.2	7.7	8.3	9.7	11.3

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	1.90
Specific Gravity d	4.74
Remarks	

OHARA 23-05

※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.