

S-LAH92

Code(d) **892371**

Code(e) **898369**

Refractive Index n_d	1.89190 1.891900	Abbe Number ν_d	37.13	Dispersion n_F-n_C	0.024019
Refractive Index n_e	1.897597	Abbe Number ν_e	36.88	Dispersion n_F-n_C'	0.024337

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.84259
n_{1970}	1.97009	1.84927
n_{1530}	1.52958	1.85686
n_{1129}	1.12864	1.86460
n_t	1.01398	1.86752
n_s	0.85211	1.87305
$n_{A'}$	0.76819	1.87709
n_r	0.70652	1.88091
n_C	0.65627	1.88482
$n_{C'}$	0.64385	1.88593
$n_{\text{He-Ne}}$	0.6328	1.88698
n_D	0.58929	1.89169
n_d	0.58756	1.89190
n_e	0.54607	1.89760
n_F	0.48613	1.90884
$n_{F'}$	0.47999	1.91027
$n_{\text{He-Cd}}$	0.44157	1.92085
n_g	0.435835	1.92273
n_h	0.404656	1.93469
n_i	0.365015	

Constants of Dispersion Formula	
A_1	2.10440311E+00
A_2	3.58346161E-01
A_3	1.63010064E+00
B_1	1.08531811E-02
B_2	4.43405920E-02
B_3	1.23249800E+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	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	1230
Rigidity Modulus G (10^9N/m^2)	471
Poisson's Ratio σ	0.306
Knoop Hardness Hk[Class]	650 7
Abrasion Aa	63
Photoelastic Constant β nm/(cm· 10^5Pa)	1.12

Partial Dispersions	
n_C-n_t	0.017302
$n_C-n_{A'}$	0.007739
n_d-n_C	0.007076
n_e-n_C	0.012773
n_g-n_d	0.030827
n_g-n_F	0.013884
n_h-n_g	0.011965
n_i-n_g	
n_C-n_t	0.018412
$n_e-n_{C'}$	0.011663
n_F-n_e	0.012674
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7203
$\theta_{C,A'}$	0.3222
$\theta_{d,C}$	0.2946
$\theta_{e,C}$	0.5318
$\theta_{g,d}$	1.2834
$\theta_{g,F}$	0.5780
$\theta_{h,g}$	0.4981
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7565
$\theta'_{e,C'}$	0.4792
$\theta'_{F,e}$	0.5208
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0006
$\Delta\theta_{C,A'}$	0.0013
$\Delta\theta_{g,d}$	-0.0042
$\Delta\theta_{g,F}$	-0.0034
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	646
Annealing Point AP (°C)	678
Transformation Temperature Tg (°C)	689
Yield Point At (°C)	730
Softening Point SP (°C)	761
Expansion Coefficients (-30~+70°C)	75
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	87
Thermal Conductivity λ W/(m·K)	0.873

Coloring			
λ_{80}		λ_5	350
λ_{70}	400		

Internal transmission			
$\lambda_{0.80}$	390	$\lambda_{0.05}$	349

CCI		
B	G	R
0.00	2.55	2.68

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	0.08
360	0.28
370	0.52
380	0.69
390	0.80
400	0.87
420	0.936
440	0.962
460	0.976
480	0.984
500	0.990
550	0.997
600	0.998
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.998
1600	0.997
1800	0.992
2000	0.977
2200	0.946
2400	0.82

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n/\Delta T$ relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.8	4.7	4.8	5.1	5.5	6.4	7.4
-20~ 0	3.7	4.7	4.8	5.1	5.5	6.5	7.5
0~20	3.7	4.8	4.8	5.1	5.6	6.6	7.7
20~40	3.7	4.8	4.8	5.2	5.6	6.7	7.8
40~60	3.7	4.9	4.9	5.3	5.7	6.8	8.0
60~80	3.9	5.1	5.2	5.5	6.0	7.1	8.4

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.87
Remarks	

OHARA 17-04

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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.