

L-LAH53

Code(d) **806409**

Code(e) **811407**

Refractive Index n_d	1.80625 1.806250	Abbe Number ν_d	40.91	Dispersion n_F-n_C	0.019709
Refractive Index n_e	1.810931	Abbe Number ν_e	40.66	Dispersion n_F-n_C'	0.019946

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.76094
n_{1970}	1.97009	1.76797
n_{1530}	1.52958	1.77569
n_{1129}	1.12864	1.78303
n_t	1.01398	1.78566
n_s	0.85211	1.79048
$n_{A'}$	0.76819	1.79391
n_r	0.70652	1.79713
n_C	0.65627	1.80039
$n_{C'}$	0.64385	1.80132
$n_{\text{He-Ne}}$	0.6328	1.80218
n_D	0.58929	1.80608
n_d	0.58756	1.80625
n_e	0.54607	1.81093
n_F	0.48613	1.82010
$n_{F'}$	0.47999	1.82126
$n_{\text{He-Cd}}$	0.44157	1.82981
n_g	0.435835	1.83132
n_h	0.404656	1.84090
n_i	0.365015	1.85783

Constants of Dispersion Formula	
A_1	1.87409991E+00
A_2	2.97921402E-01
A_3	1.35064285E+00
B_1	9.93318344E-03
B_2	4.05501825E-02
B_3	1.00502200E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	1151
Rigidity Modulus G (10^9N/m^2)	443
Poisson's Ratio σ	0.298
Knoop Hardness Hk[Class]	660 7
Abrasion Aa	83
Photoelastic Constant β nm/(cm · 10^5Pa)	1.88

Partial Dispersions	
n_C-n_t	0.014736
$n_C-n_{A'}$	0.006484
n_d-n_C	0.005856
n_e-n_C	0.010537
n_g-n_d	0.025070
n_g-n_F	0.011217
n_h-n_g	0.009578
n_i-n_g	0.026514
n_C-n_t	0.015658
$n_e-n_{C'}$	0.009615
n_F-n_e	0.010331
$n_i-n_{F'}$	0.036572

Relative Partial Dispersions	
$\theta_{C,t}$	0.7477
$\theta_{C,A'}$	0.3290
$\theta_{d,C}$	0.2971
$\theta_{e,C}$	0.5346
$\theta_{g,d}$	1.2720
$\theta_{g,F}$	0.5691
$\theta_{h,g}$	0.4860
$\theta_{i,g}$	1.3453
$\theta'_{C,t}$	0.7850
$\theta'_{e,C'}$	0.4821
$\theta'_{F,e}$	0.5179
$\theta'_{i,F'}$	1.8336

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0091
$\Delta\theta_{C,A'}$	0.0036
$\Delta\theta_{g,d}$	-0.0077
$\Delta\theta_{g,F}$	-0.0062
$\Delta\theta_{i,g}$	-0.0372

Thermal Properties	
Strain Point StP (°C)	534
Annealing Point AP (°C)	558
Transformation Temperature Tg (°C)	574
Yield Point At (°C)	607
Softening Point SP (°C)	646
Expansion Coefficients (-30~+70°C)	59
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	72
Thermal Conductivity λ W/(m·K)	0.862

Coloring			
λ_{80}	400	λ_5	335
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	367	$\lambda_{0.05}$	338

CCI		
B	G	R
0.00	0.88	0.94

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.16
350	0.47
360	0.70
370	0.83
380	0.89
390	0.929
400	0.950
420	0.970
440	0.979
460	0.985
480	0.989
500	0.993
550	0.997
600	0.997
650	0.998
700	0.998
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.988
2000	0.969
2200	0.919
2400	0.73

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	6.5	7.4	7.4	7.7	8.0	8.8	9.6
-20~ 0	6.6	7.4	7.5	7.7	8.1	8.9	9.7
0~20	6.6	7.5	7.5	7.8	8.2	9.0	9.9
20~40	6.5	7.5	7.5	7.8	8.2	9.1	10.0
40~60	6.6	7.6	7.7	8.0	8.3	9.2	10.2
60~80	6.8	7.8	7.9	8.2	8.6	9.5	10.5

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.49
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.