S-LAH52Q

Code(d) **800422**
Code(e) **804420**

Refractive Index	n_d	**1.79952** 1.799520	Abbe Number	ν_d	**42.24**	Dispersion	n_F-n_C	**0.018928**
Refractive Index	n_e	1.804018	Abbe Number	ν_e	41.98	Dispersion	$n_{F'}$-$n_{C'}$	0.019154

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.75708
n_{1970}	1.97009	1.76345
n_{1530}	1.52958	1.77050
n_{1129}	1.12864	1.77732
n_t	1.01398	1.77980
n_s	0.85211	1.78438
$n_{A'}$	0.76819	1.78767
n_r	0.70652	1.79076
n_C	0.65627	1.79389
$n_{C'}$	0.64385	1.79478
$n_{He\text{-}Ne}$	0.6328	1.79561
n_D	0.58929	1.79935
n_d	0.58756	1.79952
n_e	0.54607	1.80402
n_F	0.48613	1.81282
$n_{F'}$	0.47999	1.81393
$n_{He\text{-}Cd}$	0.44157	1.82212
n_g	0.435835	1.82356
n_h	0.404656	1.83271
n_i	0.365015	1.84883

Constants of Dispersion Formula	
A_1	1.91082318E+00
A_2	2.39854589E-01
A_3	1.16159733E+00
B_1	1.03565352E-02
B_2	4.13805081E-02
B_3	9.66037300E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	52.2
Phosphate Resistance PR	2.0

Mechanical Properties		
Young's Modulus E (GPa)	109.8	
Rigidity Modulus G (GPa)	41.8	
Poisson's Ratio σ	0.313	
Knoop Hardness Hk[Class]	620 *	6
Abrasion Aa	66	

Partial Dispersions	
n_C-n_t	0.014094
n_C-$n_{A'}$	0.006224
n_d-n_C	0.005627
n_e-n_C	0.010125
n_g-n_d	0.024043
n_g-n_F	0.010742
n_h-n_g	0.009149
n_i-n_g	0.025268
n_C-n_t	0.014980
n_e-$n_{C'}$	0.009239
$n_{F'}$-n_e	0.009915
n_i-$n_{F'}$	0.034898

Relative Partial Dispersions	
$\theta_{C,t}$	0.7446
$\theta_{C,A'}$	0.3288
$\theta_{d,C}$	0.2973
$\theta_{e,C}$	0.5349
$\theta_{g,d}$	1.2702
$\theta_{g,F}$	0.5675
$\theta_{h,g}$	0.4834
$\theta_{i,g}$	1.3350
$\theta'_{C',t}$	0.7821
$\theta'_{e,C'}$	0.4824
$\theta'_{F',e}$	0.5176
$\theta'_{i,F'}$	1.8220

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	-0.0003
$\Delta\theta_{C,A'}$	0.0017
$\Delta\theta_{g,d}$	-0.0068
$\Delta\theta_{g,F}$	-0.0056
$\Delta\theta_{i,g}$	-0.0363

Thermal Properties		
Strain Point StP (℃)		553
Annealing Point AP (℃)		576
Transformation Temperature Tg (℃)		598
Yield Point At (℃)		622
Softening Point SP (℃)		651
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	60
	(+100~+300℃)	73
Thermal Conductivity λ W/(m·K)		0.852

Coloring			
λ_{80}	390	λ_5	335
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	365	$\lambda_{0.05}$	334

CCI		
B	G	R
0.00	0.67	0.68

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.13
350	0.46
360	0.73
370	0.86
380	0.926
390	0.954
400	0.969
420	0.982
440	0.988
460	0.992
480	0.995
500	0.997
550	0.999
600	0.998
650	0.999
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.997
1600	0.996
1800	0.989
2000	0.967
2200	0.924
2400	0.75

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	8.5	9.5	9.5	9.8	10.2	11.0	11.9
-20~ 0	8.6	9.6	9.6	9.9	10.3	11.2	12.1
0~20	8.7	9.7	9.7	10.1	10.5	11.4	12.3
20~40	8.7	9.8	9.8	10.2	10.6	11.5	12.5
40~60	8.8	9.9	10.0	10.3	10.7	11.7	12.7
60~80	9.0	10.1	10.2	10.5	11.0	12.0	13.1

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	2.31
Specific Gravity d	4.47
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.