S-LAL 8

Code(d) **713539**
Code(e) **716536**

Refractive Index	n_d	**1.71300**	Abbe Number	ν_d	**53.87**	Dispersion	n_F-n_C	**0.013236**
		1.712995						
Refractive Index	n_e	1.716150	Abbe Number	ν_e	53.64	Dispersion	$n_{F'}$-$n_{C'}$	0.013352

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.67418
n_{1970}	1.97009	1.68155
n_{1530}	1.52958	1.68930
n_{1129}	1.12864	1.69597
n_t	1.01398	1.69813
n_s	0.85211	1.70186
$n_{A'}$	0.76819	1.70438
n_r	0.70652	1.70669
n_C	0.65627	1.70897
$n_{C'}$	0.64385	1.70961
$n_{He\text{-}Ne}$	0.6328	1.71021
n_D	0.58929	1.71288
n_d	0.58756	1.71300
n_e	0.54607	1.71615
n_F	0.48613	1.72221
$n_{F'}$	0.47999	1.72297
$n_{He\text{-}Cd}$	0.44157	1.72848
n_g	0.435835	1.72943
n_h	0.404656	1.73545
n_i	0.365015	1.74575

Constants of Dispersion Formula	
A_1	1.30663291E+00
A_2	5.71377253E-01
A_3	1.24303605E+00
B_1	6.11862448E-03
B_2	2.12721470E-02
B_3	9.06285686E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	52.0
Phosphate Resistance PR	3.0

Mechanical Properties		
Young's Modulus E (GPa)	114.0	
Rigidity Modulus G (GPa)	44.2	
Poisson's Ratio σ	0.289	
Knoop Hardness Hk[Class]	670 ∗	7
Abrasion Aa	81	

Partial Dispersions	
n_C-n_t	0.010846
n_C-$n_{A'}$	0.004591
n_d-n_C	0.004021
n_e-n_C	0.007176
n_g-n_d	0.016440
n_g-n_F	0.007225
n_h-n_g	0.006016
n_i-n_g	0.016311
n_C-n_t	0.011486
n_e-$n_{C'}$	0.006536
$n_{F'}$-n_e	0.006816
n_i-$n_{F'}$	0.022780

Relative Partial Dispersions	
$\theta_{C,t}$	0.8194
$\theta_{C,A'}$	0.3469
$\theta_{d,C}$	0.3038
$\theta_{e,C}$	0.5422
$\theta_{g,d}$	1.2421
$\theta_{g,F}$	0.5459
$\theta_{h,g}$	0.4545
$\theta_{i,g}$	1.2323
$\theta'_{C',t}$	0.8602
$\theta'_{e,C'}$	0.4895
$\theta'_{F',e}$	0.5105
$\theta'_{i,F'}$	1.7061

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0200
$\Delta\theta_{C,A'}$	0.0057
$\Delta\theta_{g,d}$	-0.0107
$\Delta\theta_{g,F}$	-0.0084
$\Delta\theta_{i,g}$	-0.0416

Thermal Properties		
Strain Point StP (℃)		590
Annealing Point AP (℃)		617
Transformation Temperature Tg (℃)		643
Yield Point At (℃)		668
Softening Point SP (℃)		698
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	61
	(+100~+300℃)	74
Thermal Conductivity λ W/(m·K)		0.894

Coloring			
λ_{80}	375	λ_5	295
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	356	$\lambda_{0.05}$	295

CCI		
B	G	R
0.00	0.42	0.39

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	0.03
300	0.07
310	0.15
320	0.28
330	0.44
340	0.60
350	0.74
360	0.84
370	0.905
380	0.944
390	0.965
400	0.977
420	0.988
440	0.991
460	0.994
480	0.996
500	0.997
550	0.998
600	0.996
650	0.997
700	0.997
800	0.998
900	0.997
1000	0.997
1200	0.997
1400	0.991
1600	0.991
1800	0.981
2000	0.955
2200	0.87
2400	0.62

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	3.3	3.6	3.6	3.8	4.0	4.3	4.7
-20~ 0	3.4	3.7	3.8	3.9	4.1	4.5	4.9
0~20	3.5	3.9	3.9	4.0	4.2	4.6	5.0
20~40	3.6	4.0	4.0	4.1	4.3	4.8	5.2
40~60	3.6	4.1	4.1	4.3	4.5	4.9	5.4
60~80	3.7	4.2	4.2	4.4	4.6	5.1	5.5

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	1.75
Specific Gravity d	3.79
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.