S-LAL 7

Code(d) **652585**
Code(e) **654583**

Refractive Index	n_d	**1.65160**	Abbe Number	ν_d	**58.55**	Dispersion	n_F-n_C	**0.011129**
		1.651597						
Refractive Index	n_e	1.654251	Abbe Number	ν_e	58.31	Dispersion	n_F-$n_{C'}$	0.011221

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.61850
n_{1970}	1.97009	1.62479
n_{1530}	1.52958	1.63144
n_{1129}	1.12864	1.63715
n_t	1.01398	1.63900
n_s	0.85211	1.64218
$n_{A'}$	0.76819	1.64432
n_r	0.70652	1.64627
n_C	0.65627	1.64821
$n_{C'}$	0.64385	1.64875
n_{He-Ne}	0.6328	1.64925
n_D	0.58929	1.65150
n_d	0.58756	1.65160
n_e	0.54607	1.65425
n_F	0.48613	1.65934
$n_{F'}$	0.47999	1.65997
n_{He-Cd}	0.44157	1.66457
n_g	0.435835	1.66537
n_h	0.404656	1.67038
n_i	0.365015	1.67892

Constants of Dispersion Formula	
A_1	9.16121247E-01
A_2	7.65948319E-01
A_3	1.27745023E+00
B_1	3.95889743E-03
B_2	1.67547425E-02
B_3	1.10762706E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	5
Weathering Resistance(Surface) Group W(S)	2～3
Acid Resistance(Surface) Group SR	53.0
Phosphate Resistance PR	4.0

Mechanical Properties		
Young's Modulus E (10^8N/m^2)	958	
Rigidity Modulus G (10^8N/m^2)	377	
Poisson's Ratio σ	0.271	
Knoop Hardness Hk[Class]	560	6
Abrasion Aa	141	
Photoelastic Constant β nm/(cm·10^5Pa)		1.72

Partial Dispersions	
n_C-n_t	0.009204
n_C-$n_{A'}$	0.003884
n_d-n_C	0.003390
n_e-n_C	0.006044
n_g-n_d	0.013777
n_g-n_F	0.006038
n_h-n_g	0.005010
n_i-n_g	0.013542
$n_{C'}$-n_t	0.009744
n_e-$n_{C'}$	0.005504
$n_{F'}$-n_e	0.005717
n_i-$n_{F'}$	0.018948

Relative Partial Dispersions	
$\theta_{C,t}$	0.8270
$\theta_{C,A'}$	0.3490
$\theta_{d,C}$	0.3046
$\theta_{e,C}$	0.5431
$\theta_{g,d}$	1.2379
$\theta_{g,F}$	0.5425
$\theta_{h,g}$	0.4502
$\theta_{i,g}$	1.2168
$\theta'_{C',t}$	0.8684
$\theta'_{e,C'}$	0.4905
$\theta'_{F',e}$	0.5095
$\theta'_{i,F'}$	1.6886

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0056
$\Delta\theta_{C,A'}$	0.0022
$\Delta\theta_{g,d}$	-0.0052
$\Delta\theta_{g,F}$	-0.0042
$\Delta\theta_{i,g}$	-0.0179

Thermal Properties		
Strain Point StP (℃)		582
Annealing Point AP (℃)		603
Transformation Temperature Tg (℃)		617
Yield Point At (℃)		658
Softening Point SP (℃)		694
Expansion Coefficients α (10^{-7}/℃)	(-30~+70℃)	67
	(+100~+300℃)	81
Thermal Conductivity λ W/(m·K)		0.825

Coloring			
λ_{80}	345	λ_5	275
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	330	$\lambda_{0.05}$	277

CCI		
B	G	R
0.00	0.18	0.16

Internal Transmittance	
λ(nm)	τ 10mm
280	0.09
290	0.22
300	0.38
310	0.55
320	0.69
330	0.80
340	0.88
350	0.929
360	0.957
370	0.974
380	0.984
390	0.990
400	0.992
420	0.994
440	0.995
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.998
700	0.998
800	0.999
900	0.998
1000	0.998
1200	0.997
1400	0.991
1600	0.993
1800	0.984
2000	0.968
2200	0.903
2400	0.74

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative (10^{-6}/℃)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.5	1.8	1.8	1.9	2.0	2.3	2.6
-20~ 0	1.5	1.8	1.9	2.0	2.1	2.4	2.7
0~20	1.6	1.9	2.0	2.1	2.2	2.5	2.8
20~40	1.8	2.0	2.0	2.2	2.3	2.6	3.0
40~60	1.8	2.1	2.1	2.3	2.4	2.8	3.1
60~80	1.8	2.2	2.2	2.4	2.5	2.9	3.2

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.73
Remarks	

OHARA 17-04

※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.