S-LAL21

Code(d) **703524**
Code(e) **706521**

Refractive Index	n_d	**1.70300** 1.703000	Abbe Number	ν_d **52.38**	Dispersion	n_F-n_C **0.013422**
Refractive Index	n_e	1.706198	Abbe Number	ν_e 52.11	Dispersion	$n_{F'}$-$n_{C'}$ 0.013553

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.66940
n_{1970}	1.97009	1.67490
n_{1530}	1.52958	1.68093
n_{1129}	1.12864	1.68652
n_t	1.01398	1.68846
n_s	0.85211	1.69195
$n_{A'}$	0.76819	1.69440
n_r	0.70652	1.69667
n_C	0.65627	1.69895
$n_{C'}$	0.64385	1.69959
n_{He-Ne}	0.6328	1.70019
n_D	0.58929	1.70288
n_d	0.58756	1.70300
n_e	0.54607	1.70620
n_F	0.48613	1.71237
$n_{F'}$	0.47999	1.71315
n_{He-Cd}	0.44157	1.71878
n_g	0.435835	1.71976
n_h	0.404656	1.72593
n_i	0.365015	1.73649

Constants of Dispersion Formula	
A_1	9.35250779E-01
A_2	9.05988706E-01
A_3	1.43351212E+00
B_1	1.80836047E-02
B_2	4.08452643E-03
B_3	1.38683410E+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 (GPa)	112.9	
Rigidity Modulus G (GPa)	43.6	
Poisson's Ratio σ	0.293	
Knoop Hardness Hk[Class]	700	7
Abrasion Aa	60	

Partial Dispersions	
n_C-n_t	0.010494
n_C-$n_{A'}$	0.004551
n_d-n_C	0.004048
n_e-n_C	0.007246
n_g-n_d	0.016764
n_g-n_F	0.007390
n_h-n_g	0.006165
n_i-n_g	0.016723
n_C-n_t	0.011135
n_e-$n_{C'}$	0.006605
$n_{F'}$-n_e	0.006948
n_i-$n_{F'}$	0.023341

Relative Partial Dispersions	
$\theta_{C,t}$	0.7819
$\theta_{C,A'}$	0.3391
$\theta_{d,C}$	0.3016
$\theta_{e,C}$	0.5399
$\theta_{g,d}$	1.2490
$\theta_{g,F}$	0.5506
$\theta_{h,g}$	0.4593
$\theta_{i,g}$	1.2459
$\theta'_{C',t}$	0.8216
$\theta'_{e,C'}$	0.4873
$\theta'_{F',e}$	0.5127
$\theta'_{i,F'}$	1.7222

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	-0.0105
$\Delta\theta_{C,A'}$	-0.0003
$\Delta\theta_{g,d}$	-0.0069
$\Delta\theta_{g,F}$	-0.0061
$\Delta\theta_{i,g}$	-0.0405

Thermal Properties		
Strain Point StP (℃)		-
Annealing Point AP (℃)		-
Transformation Temperature Tg (℃)		767
Yield Point At (℃)		814
Softening Point SP (℃)		879
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	50
	(+100~+300℃)	61
Thermal Conductivity λ W/(m·K)		0.983

Coloring			
λ_{80}	395	λ_5	320
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	374	$\lambda_{0.05}$	320

CCI		
B	G	R
0.00	1.01	0.99

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	
310	0.01
320	0.05
330	0.15
340	0.30
350	0.48
360	0.65
370	0.77
380	0.85
390	0.909
400	0.942
420	0.975
440	0.986
460	0.991
480	0.994
500	0.996
550	0.998
600	0.997
650	0.997
700	0.996
800	0.995
900	0.992
1000	0.991
1200	0.992
1400	0.989
1600	0.992
1800	0.987
2000	0.979
2200	0.949
2400	0.87

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	6.8	7.4	7.4	7.6	7.8	8.2	8.7
-20~ 0	6.9	7.4	7.5	7.6	7.8	8.3	8.8
0~20	6.9	7.5	7.5	7.7	7.9	8.4	8.9
20~40	6.9	7.5	7.6	7.7	7.9	8.4	9.0
40~60	7.0	7.6	7.6	7.8	8.0	8.6	9.1
60~80	7.1	7.8	7.8	8.0	8.2	8.7	9.3

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	1.64
Specific Gravity d	3.85
Remarks	

OHARA 24-01

※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.