

# S-LAL61

Code(d) **741527**

Code(e) **744524**

Refractive Index $n_d$	<b>1.74100</b> 1.740999	Abbe Number $\nu_d$	<b>52.64</b>	Dispersion $n_F-n_C$	<b>0.014078</b>
Refractive Index $n_e$	1.744354	Abbe Number $\nu_e$	52.41	Dispersion $n_F-n_{C'}$	0.014203

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.70016
$n_{1970}$	1.97009	1.70787
$n_{1530}$	1.52958	1.71598
$n_{1129}$	1.12864	1.72297
$n_t$	1.01398	1.72525
$n_s$	0.85211	1.72918
$n_{A'}$	0.76819	1.73186
$n_r$	0.70652	1.73430
$n_C$	0.65627	1.73673
$n_{C'}$	0.64385	1.73741
$n_{\text{He-Ne}}$	0.6328	1.73804
$n_D$	0.58929	1.74087
$n_d$	0.58756	1.74100
$n_e$	0.54607	1.74435
$n_F$	0.48613	1.75080
$n_{F'}$	0.47999	1.75161
$n_{\text{He-Cd}}$	0.44157	1.75748
$n_g$	0.435835	1.75850
$n_h$	0.404656	1.76491
$n_i$	0.365015	1.77589

Constants of Dispersion Formula	
$A_1$	1.11073292E+00
$A_2$	8.59347773E-01
$A_3$	1.26707433E+00
$B_1$	4.64181248E-03
$B_2$	1.92989261E-02
$B_3$	8.73917698E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1~2
Acid Resistance(Surface) Group SR	51.0
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	1190
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	461
Poisson's Ratio $\sigma$	0.291
Knoop Hardness Hk[Class]	720   7
Abrasion Aa	71
Photoelastic Constant $\beta$ nm/(cm· $10^5\text{Pa}$ )	1.55

Partial Dispersions	
$n_C-n_t$	0.011481
$n_C-n_{A'}$	0.004871
$n_d-n_C$	0.004272
$n_e-n_C$	0.007627
$n_g-n_d$	0.017502
$n_g-n_F$	0.007696
$n_h-n_g$	0.006413
$n_i-n_g$	0.017393
$n_C-n_t$	0.012160
$n_e-n_{C'}$	0.006948
$n_F-n_e$	0.007255
$n_i-n_{F'}$	0.024285

Relative Partial Dispersions	
$\theta_{C,t}$	0.8155
$\theta_{C,A'}$	0.3460
$\theta_{d,C}$	0.3035
$\theta_{e,C}$	0.5418
$\theta_{g,d}$	1.2432
$\theta_{g,F}$	0.5467
$\theta_{h,g}$	0.4555
$\theta_{i,g}$	1.2355
$\theta'_{C,t}$	0.8562
$\theta'_{e,C'}$	0.4892
$\theta'_{F,e}$	0.5108
$\theta'_{i,F'}$	1.7099

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0218
$\Delta\theta_{C,A'}$	0.0063
$\Delta\theta_{g,d}$	-0.0122
$\Delta\theta_{g,F}$	-0.0096
$\Delta\theta_{i,g}$	-0.0487

Thermal Properties	
Strain Point StP (°C)	631
Annealing Point AP (°C)	646
Transformation Temperature Tg (°C)	653
Yield Point At (°C)	688
Softening Point SP (°C)	724
Expansion Coefficients (-30~+70°C)	57
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	70
Thermal Conductivity $\lambda$ W/(m·K)	0.861

Coloring			
$\lambda_{80}$	365	$\lambda_5$	280
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	358	$\lambda_{0.05}$	296

CCI		
B	G	R
0.00	0.58	0.59

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	0.02
300	0.07
310	0.15
320	0.27
330	0.43
340	0.59
350	0.72
360	0.82
370	0.89
380	0.935
390	0.958
400	0.971
420	0.982
440	0.988
460	0.991
480	0.994
500	0.996
550	0.997
600	0.997
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.994
1600	0.994
1800	0.985
2000	0.959
2200	0.88
2400	0.62

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	3.3	3.7	3.7	3.9	4.0	4.4	4.8
-20~ 0	3.4	3.8	3.9	4.0	4.2	4.6	5.0
0~20	3.5	3.9	4.0	4.1	4.3	4.7	5.1
20~40	3.6	4.1	4.1	4.2	4.4	4.9	5.3
40~60	3.7	4.2	4.2	4.4	4.6	5.0	5.5
60~80	3.8	4.3	4.3	4.5	4.7	5.2	5.6

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.04
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.