

# S-LAL 7Q

Code(d) **652585**

Code(e) **654584**

Refractive Index $n_d$	<b>1.65160</b> 1.651600	Abbe Number $\nu_d$	<b>58.54</b>	Dispersion $n_F-n_C$	<b>0.011130</b>
Refractive Index $n_e$	1.654255	Abbe Number $\nu_e$	58.34	Dispersion $n_F-n_{C'}$	0.011215

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.61523
$n_{1970}$	1.97009	1.62265
$n_{1530}$	1.52958	1.63034
$n_{1129}$	1.12864	1.63671
$n_t$	1.01398	1.63870
$n_s$	0.85211	1.64204
$n_{A'}$	0.76819	1.64425
$n_r$	0.70652	1.64624
$n_C$	0.65627	1.64819
$n_{C'}$	0.64385	1.64874
$n_{\text{He-Ne}}$	0.6328	1.64924
$n_D$	0.58929	1.65150
$n_d$	0.58756	1.65160
$n_e$	0.54607	1.65426
$n_F$	0.48613	1.65932
$n_{F'}$	0.47999	1.65995
$n_{\text{He-Cd}}$	0.44157	1.66453
$n_g$	0.435835	1.66532
$n_h$	0.404656	1.67029
$n_i$	0.365015	1.67873

Constants of Dispersion Formula	
$A_1$	9.05277143E-01
$A_2$	7.77955684E-01
$A_3$	1.18137286E+00
$B_1$	1.55606507E-02
$B_2$	2.84718626E-03
$B_3$	8.80737900E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	52.0
Phosphate Resistance PR	4.0

Mechanical Properties	
Young's Modulus E (GPa)	110.8
Rigidity Modulus G (GPa)	43.3
Poisson's Ratio $\sigma$	0.280
Knoop Hardness Hk(Class)	680   7
Abrasion Aa	75

Partial Dispersions	
$n_C-n_t$	0.009488
$n_C-n_{A'}$	0.003943
$n_d-n_C$	0.003408
$n_e-n_C$	0.006063
$n_g-n_d$	0.013721
$n_g-n_F$	0.005999
$n_h-n_g$	0.004966
$n_i-n_g$	0.013410
$n_C-n_t$	0.010033
$n_e-n_{C'}$	0.005518
$n_{F'}-n_e$	0.005697
$n_i-n_{F'}$	0.018779

Relative Partial Dispersions	
$\theta_{C,t}$	0.8525
$\theta_{C,A'}$	0.3543
$\theta_{d,C}$	0.3062
$\theta_{e,C}$	0.5447
$\theta_{g,d}$	1.2328
$\theta_{g,F}$	0.5390
$\theta_{h,g}$	0.4462
$\theta_{i,g}$	1.2049
$\theta'_{C,t}$	0.8946
$\theta'_{e,C'}$	0.4920
$\theta'_{F',e}$	0.5080
$\theta'_{i,F'}$	1.6745

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0312
$\Delta\theta_{C,A'}$	0.0075
$\Delta\theta_{g,d}$	-0.0103
$\Delta\theta_{g,F}$	-0.0078
$\Delta\theta_{i,g}$	-0.0299

Thermal Properties	
Strain Point StP (°C)	580
Annealing Point AP (°C)	601
Transformation Temperature Tg (°C)	620
Yield Point At (°C)	646
Softening Point SP (°C)	683
Expansion Coefficients (-30~+70°C)	55
$\alpha$ ( $10^{-7} \text{K}^{-1}$ ) (+100~+300°C)	70
Thermal Conductivity $\lambda$ W/(m·K)	0.989

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

Internal transmission			
$\lambda_{0.80}$	351	$\lambda_{0.05}$	294

CCI		
B	G	R
0.00	0.32	0.29

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	0.01
290	0.03
300	0.08
310	0.19
320	0.34
330	0.51
340	0.67
350	0.79
360	0.88
370	0.930
380	0.960
390	0.974
400	0.983
420	0.990
440	0.993
460	0.995
480	0.997
500	0.998
550	0.998
600	0.997
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.984
1600	0.989
1800	0.977
2000	0.948
2200	0.83
2400	0.59

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative ( $10^{-6} \text{K}^{-1}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.8	4.2	4.2	4.3	4.4	4.8	5.0
-20~ 0	3.8	4.2	4.2	4.3	4.5	4.8	5.1
0~20	3.8	4.2	4.2	4.4	4.5	4.8	5.2
20~40	3.8	4.2	4.3	4.4	4.5	4.9	5.2
40~60	3.9	4.3	4.4	4.5	4.6	5.0	5.3
60~80	4.1	4.5	4.5	4.7	4.8	5.2	5.6

Other Properties	
Photoelastic Constant $\beta$ nm/(cm·10 <sup>5</sup> Pa)	1.98
Specific Gravity d	3.24
Remarks	

OHARA 24-01

OHARA Copyright© OHARA INC. All Rights Reserved.

※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.