

# S-LAL 7

Code(d) **652585**

Code(e) **654583**

Refractive Index $n_d$	<b>1.65160</b> 1.651597	Abbe Number $\nu_d$	<b>58.55</b>	Dispersion $n_F-n_C$	<b>0.011129</b>
Refractive Index $n_e$	1.654251	Abbe Number $\nu_e$	58.31	Dispersion $n_F-n_C'$	0.011221

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	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
$n_{\text{He-Ne}}$	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
$n_{\text{He-Cd}}$	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 ( $10^9\text{N/m}^2$ )	958
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	377
Poisson's Ratio $\sigma$	0.271
Knoop Hardness Hk[Class]	560   6
Abrasion Aa	136
Photoelastic Constant $\beta$ (nm/cm/ $10^9\text{Pa}$ )	1.72

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dT relative ( $10^{-6}/^\circ\text{C}$ )						
	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

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 $\Delta\theta$ from "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 (°C)	582
Annealing Point AP (°C)	603
Transformation Temperature Tg (°C)	617
Yield Point At (°C)	658
Softening Point SP (°C)	694
Expansion Coefficients (-30~+70°C)	67
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	81
Thermal Conductivity k (W/m·K)	0.825

Coloring			
$\lambda_{80}$	345	$\lambda_5$	275
$\lambda_{70}$			

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

CCI		
B	G	R
0.00	0.18	0.16

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.73
Remarks	

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