

# S-LAL 8

Code(d) **713539**

Code(e) **716536**

Refractive Index $n_d$	<b>1.71300</b>	Abbe Number $v_d$	<b>53.9</b>	Dispersion $n_F-n_C$	<b>0.01324</b>
	1.712995		53.87		0.013236
Refractive Index $n_e$	1.716150	Abbe Number $v_e$	53.64	Dispersion $n_F-n_C'$	0.013352

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.67418
$n_{1970}$	1.97009	1.68155
$n_{1530}$	1.52958	1.68930
$n_{1129}$	1.12864	1.69597
$n_t$	1.01398	1.69813
$n_s$	0.85211	1.70186
$n_{A'}$	0.76819	1.70438
$n_r$	0.70652	1.70669
$n_C$	0.65627	1.70897
$n_{C'}$	0.64385	1.70961
$n_{\text{He-Ne}}$	0.6328	1.71021
$n_D$	0.58929	1.71288
$n_d$	0.58756	1.71300
$n_e$	0.54607	1.71615
$n_F$	0.48613	1.72221
$n_{F'}$	0.47999	1.72297
$n_{\text{He-Cd}}$	0.44157	1.72848
$n_g$	0.435835	1.72943
$n_h$	0.404656	1.73545
$n_i$	0.365015	1.74575

Partial Dispersions	
$n_C-n_t$	0.010846
$n_C-n_{A'}$	0.004591
$n_d-n_C$	0.004021
$n_e-n_C$	0.007176
$n_g-n_d$	0.016440
$n_g-n_F$	0.007225
$n_h-n_g$	0.006016
$n_i-n_g$	0.016311
$n_C-n_t$	0.011486
$n_e-n_{C'}$	0.006536
$n_{F'}-n_e$	0.006816
$n_i-n_{F'}$	0.022780

Relative Partial Dispersions	
$\theta_{C,t}$	0.8194
$\theta_{C,A'}$	0.3469
$\theta_{d,C}$	0.3038
$\theta_{e,C}$	0.5422
$\theta_{g,d}$	1.2421
$\theta_{g,F}$	0.5459
$\theta_{h,g}$	0.4545
$\theta_{i,g}$	1.2323
$\theta'_{C,t}$	0.8602
$\theta'_{e,C'}$	0.4895
$\theta'_{F',e}$	0.5105
$\theta'_{i,F}$	1.7061

Thermal Properties	
Strain Point StP (°C)	590
Annealing Point AP (°C)	617
Transformation Temperature Tg (°C)	643
Yield Point At (°C)	668
Softening Point SP (°C)	698
Expansion Coefficients (-30~+70°C)	61
$\alpha$ (10 <sup>-7</sup> /°C) (+100~+300°C)	74
Thermal Conductivity k (W/m·K)	0.894

Coloring			
$\lambda_{80}$	38	$\lambda_5$	30
$\lambda_{70}$			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	0.03
300	0.07
310	0.15
320	0.28
330	0.44
340	0.60
350	0.74
360	0.84
370	0.905
380	0.944
390	0.965
400	0.977
420	0.988
440	0.991
460	0.994
480	0.996
500	0.997
550	0.998
600	0.996
650	0.997
700	0.997
800	0.998
900	0.997
1000	0.997
1200	0.997
1400	0.991
1600	0.991
1800	0.981
2000	0.955
2200	0.87
2400	0.62

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0200
$\Delta\theta_{C,A'}$	0.0057
$\Delta\theta_{g,d}$	-0.0107
$\Delta\theta_{g,F}$	-0.0084
$\Delta\theta_{i,g}$	-0.0416

Mechanical Properties	
Young's Modulus E (10 <sup>8</sup> N/m <sup>2</sup> )	1140
Rigidity Modulus G (10 <sup>8</sup> N/m <sup>2</sup> )	442
Poisson's Ratio $\sigma$	0.289
Knoop Hardness Hk[Class]	660   7
Abrasion Aa	81
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	1.75

Constants of Dispersion Formula	
A <sub>1</sub>	1.30663291E+00
A <sub>2</sub>	5.71377253E-01
A <sub>3</sub>	1.24303605E+00
B <sub>1</sub>	6.11862448E-03
B <sub>2</sub>	2.12721470E-02
B <sub>3</sub>	9.06285686E+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	3.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.79
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 <sup>-6</sup> /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.3	3.6	3.6	3.8	4.0	4.3	4.7
-20~ 0	3.4	3.7	3.8	3.9	4.1	4.5	4.9
0~20	3.5	3.9	3.9	4.0	4.2	4.6	5.0
20~40	3.6	4.0	4.0	4.1	4.3	4.8	5.2
40~60	3.6	4.1	4.1	4.3	4.5	4.9	5.4
60~80	3.7	4.2	4.2	4.4	4.6	5.1	5.5