S-NSL 5

Code(d) **522598**

Code(e) **525596**

Refractive Index	n_d	**1.52249**	Abbe Number	v_d	**59.8**	Dispersion	n_F-n_C	**0.00874**
		1.522494			59.84			0.008732
Refractive Index	n_e	1.524576	Abbe Number	v_e	59.58	Dispersion	n_F'-$n_{C'}$	0.008805

Refractive Indicies		
λ(μm)		
n_{2325}	2.32542	1.49592
n_{1970}	1.97009	1.50104
n_{1530}	1.52958	1.50646
n_{1129}	1.12864	1.51108
n_t	1.01398	1.51256
n_s	0.85211	1.51509
$n_{A'}$	0.76819	1.51678
n_r	0.70652	1.51831
n_C	0.65627	1.51983
$n_{C'}$	0.64385	1.52026
$n_{He\text{-}Ne}$	0.6328	1.52065
n_D	0.58929	1.52242
n_d	0.58756	1.52249
n_e	0.54607	1.52458
n_F	0.48613	1.52857
$n_{F'}$	0.47999	1.52906
$n_{He\text{-}Cd}$	0.44157	1.53269
n_g	0.435835	1.53332
n_h	0.404656	1.53727
n_i	0.365015	1.54403

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0052
$\Delta\theta_{C,A'}$	0.0013
$\Delta\theta_{g,d}$	-0.0011
$\Delta\theta_{g,F}$	-0.0007
$\Delta\theta_{i,g}$	0.0032

Constants of Dispersion Formula	
A_1	1.04574577E+00
A_2	2.39613026E-01
A_3	1.15906850E+00
B_1	5.85232280E-03
B_2	2.36858752E-02
B_3	1.31329061E+02

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.49
Remarks	

Partial Dispersions	
n_C-n_t	0.007270
n_C-$n_{A'}$	0.003054
n_d-n_C	0.002660
n_e-n_C	0.004742
n_g-n_d	0.010822
n_g-n_F	0.004750
n_h-n_g	0.003952
n_i-n_g	0.010715
n_C-n_t	0.007694
n_e-$n_{C'}$	0.004318
n_F-n_e	0.004487
n_i-$n_{F'}$	0.014968

Thermal Properties		
Strain Point StP (℃)		502
Annealing Point AP (℃)		536
Transformation Temperature Tg (℃)		548
Yield Point At (℃)		596
Softening Point SP (℃)		700
Expansion Coefficients α (10^{-7}/℃)	(-30~+70℃)	82
	(+100~+300℃)	95
Thermal Conductivity k (W/m·K)		1.058

Mechanical Properties		
Young's Modulus E (10^8N/m^2)	691	
Rigidity Modulus G (10^8N/m^2)	303	
Poisson's Ratio σ	0.140	
Knoop Hardness Hk[Class]	540	5
Abrasion Aa	114	
Photoelastic Constant β (nm/cm/10^5Pa)		2.67

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1～2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Relative Partial Dispersions	
$\theta_{C,t}$	0.8326
$\theta_{C,A'}$	0.3497
$\theta_{d,C}$	0.3046
$\theta_{e,C}$	0.5431
$\theta_{g,d}$	1.2393
$\theta_{g,F}$	0.5440
$\theta_{h,g}$	0.4526
$\theta_{i,g}$	1.2271
$\theta'_{C',t}$	0.8738
$\theta'_{e,C'}$	0.4904
$\theta'_{F',e}$	0.5096
$\theta'_{i,F}$	1.6999

Coloring			
λ_{80}	35	λ_5	32
λ_{70}			

Internal Transmittance	
λ(nm)	τ10mm
280	
290	
300	
310	
320	0.04
330	0.32
340	0.67
350	0.86
360	0.941
370	0.972
380	0.984
390	0.992
400	0.995
420	0.996
440	0.996
460	0.996
480	0.997
500	0.998
550	0.998
600	0.998
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.997
1400	0.988
1600	0.992
1800	0.972
2000	0.939
2200	0.86
2400	0.81

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	dn/dt relative (10^{-6}/℃)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	1.0	1.1	1.2	1.2	1.4	1.6	1.9
-20~ 0	1.0	1.2	1.2	1.3	1.4	1.7	2.0
0~20	1.0	1.2	1.3	1.4	1.5	1.8	2.1
20~40	1.0	1.3	1.3	1.4	1.6	1.9	2.2
40~60	1.0	1.4	1.4	1.5	1.6	2.0	2.3
60~80	1.1	1.4	1.4	1.5	1.7	2.0	2.4