

S-LAH89

Code(d) **852408**

Code(e) **856405**

Refractive Index n_d	1.85150 1.851500	Abbe Number ν_d	40.78	Dispersion n_F-n_C	0.020880
Refractive Index n_e	1.856460	Abbe Number ν_e	40.53	Dispersion n_F-n_C	0.021134

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.80561
n_{1970}	1.97009	1.81233
n_{1530}	1.52958	1.81983
n_{1129}	1.12864	1.82718
n_t	1.01398	1.82987
n_s	0.85211	1.83487
$n_{A'}$	0.76819	1.83847
n_r	0.70652	1.84186
n_C	0.65627	1.84530
$n_{C'}$	0.64385	1.84628
$n_{\text{He-Ne}}$	0.6328	1.84719
n_D	0.58929	1.85132
n_d	0.58756	1.85150
n_e	0.54607	1.85646
n_F	0.48613	1.86618
$n_{F'}$	0.47999	1.86741
$n_{\text{He-Cd}}$	0.44157	1.87648
n_g	0.435835	1.87807
n_h	0.404656	1.88822
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.95118827E+00
A_2	3.77607223E-01
A_3	1.47757262E+00
B_1	9.76560799E-03
B_2	3.82232043E-02
B_3	1.12236720E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	2
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (10^9N/m^2)	1208
Rigidity Modulus G (10^8N/m^2)	463
Poisson's Ratio σ	0.303
Knoop Hardness Hk[Class]	660 7
Abrasion Aa	70
Photoelastic Constant β (nm/cm/ 10^9Pa)	1.27

Temperature Coefficients of Refractive Index							
Range of Temperature ($^{\circ}\text{C}$)	dn/dT relative ($10^{-6}/^{\circ}\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	4.0	4.9	4.9	5.2	5.5	6.3	7.1
-20~ 0	4.0	4.9	5.0	5.2	5.6	6.4	7.2
0~20	4.0	4.9	5.0	5.3	5.7	6.5	7.4
20~40	4.0	5.0	5.0	5.3	5.7	6.6	7.5
40~60	4.1	5.1	5.1	5.4	5.8	6.7	7.6
60~80	4.2	5.2	5.3	5.6	6.0	7.0	7.9

Partial Dispersions	
n_C-n_t	0.015434
$n_C-n_{A'}$	0.006834
n_d-n_C	0.006196
n_e-n_C	0.011156
n_g-n_d	0.026575
n_g-n_F	0.011891
n_h-n_g	0.010143
n_i-n_g	
n_C-n_t	0.016409
n_e-n_C	0.010181
n_F-n_e	0.010953
n_i-n_F	

Relative Partial Dispersions	
$\theta_{C,t}$	0.7392
$\theta_{C,A'}$	0.3273
$\theta_{d,C}$	0.2967
$\theta_{e,C}$	0.5343
$\theta_{g,d}$	1.2727
$\theta_{g,F}$	0.5695
$\theta_{h,g}$	0.4858
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7764
$\theta'_{e,C'}$	0.4817
$\theta'_{F,e}$	0.5183
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0012
$\Delta\theta_{C,A'}$	0.0020
$\Delta\theta_{g,d}$	-0.0073
$\Delta\theta_{g,F}$	-0.0060
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP ($^{\circ}\text{C}$)	634
Annealing Point AP ($^{\circ}\text{C}$)	660
Transformation Temperature Tg ($^{\circ}\text{C}$)	669
Yield Point At ($^{\circ}\text{C}$)	702
Softening Point SP ($^{\circ}\text{C}$)	743
Expansion Coefficients (-30~+70 $^{\circ}\text{C}$)	68
α ($10^{-7}/^{\circ}\text{C}$) (+100~+300 $^{\circ}\text{C}$)	80
Thermal Conductivity k (W/m·K)	0.861

Coloring			
λ_{80}		λ_5	340
λ_{70}	380		

Internal transmission			
$\lambda_{0.80}$	376	$\lambda_{0.05}$	339

CCI		
B	G	R
0.00	1.47	1.52

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	0.07
350	0.31
360	0.57
370	0.74
380	0.84
390	0.89
400	0.930
420	0.962
440	0.975
460	0.983
480	0.989
500	0.993
550	0.998
600	0.999
650	0.998
700	0.999
800	0.999
900	0.999
1000	0.999
1200	0.999
1400	0.998
1600	0.997
1800	0.992
2000	0.975
2200	0.938
2400	0.78

Other Properties	
Bubble Quality Group B	
Specific Gravity d	4.70
Remarks	

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