

S-LAL54Q

Code(d) **651562**

Code(e) **654560**

Refractive Index n_d	1.65100 1.651000	Abbe Number ν_d	56.24	Dispersion n_F-n_C	0.011576
Refractive Index n_e	1.653761	Abbe Number ν_e	56.02	Dispersion $n_F-n_{C'}$	0.011670

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.61532
n_{1970}	1.97009	1.62234
n_{1530}	1.52958	1.62966
n_{1129}	1.12864	1.63584
n_t	1.01398	1.63781
n_s	0.85211	1.64117
$n_{A'}$	0.76819	1.64341
n_r	0.70652	1.64545
n_C	0.65627	1.64747
$n_{C'}$	0.64385	1.64803
$n_{\text{He-Ne}}$	0.6328	1.64856
n_D	0.58929	1.65090
n_d	0.58756	1.65100
n_e	0.54607	1.65376
n_F	0.48613	1.65905
$n_{F'}$	0.47999	1.65970
$n_{\text{He-Cd}}$	0.44157	1.66449
n_g	0.435835	1.66532
n_h	0.404656	1.67053
n_i	0.365015	1.67939

Constants of Dispersion Formula	
A_1	9.20085087E-01
A_2	7.58646115E-01
A_3	1.07073096E+00
B_1	1.60829667E-02
B_2	2.92059306E-03
B_3	8.51211200E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	3.0

Mechanical Properties	
Young's Modulus E (GPa)	101.9
Rigidity Modulus G (GPa)	39.6
Poisson's Ratio σ	0.287
Knoop Hardness Hk(Class)	670 7
Abrasion Aa	61

Partial Dispersions	
n_C-n_t	0.009660
$n_C-n_{A'}$	0.004056
n_d-n_C	0.003530
n_e-n_C	0.006291
n_g-n_d	0.014320
n_g-n_F	0.006274
n_h-n_g	0.005206
n_i-n_g	0.014075
n_C-n_t	0.010223
$n_e-n_{C'}$	0.005728
$n_{F'}-n_e$	0.005942
$n_i-n_{F'}$	0.019692

Relative Partial Dispersions	
$\theta_{C,t}$	0.8345
$\theta_{C,A'}$	0.3504
$\theta_{d,C}$	0.3049
$\theta_{e,C}$	0.5435
$\theta_{g,d}$	1.2370
$\theta_{g,F}$	0.5420
$\theta_{h,g}$	0.4497
$\theta_{i,g}$	1.2159
$\theta'_{C,t}$	0.8760
$\theta'_{e,C'}$	0.4908
$\theta'_{F',e}$	0.5092
$\theta'_{i,F'}$	1.6874

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0239
$\Delta\theta_{C,A'}$	0.0064
$\Delta\theta_{g,d}$	-0.0109
$\Delta\theta_{g,F}$	-0.0085
$\Delta\theta_{i,g}$	-0.0382

Thermal Properties	
Strain Point StP (°C)	646
Annealing Point AP (°C)	679
Transformation Temperature Tg (°C)	688
Yield Point At (°C)	718
Softening Point SP (°C)	748
Expansion Coefficients (-30~+70°C)	43
α (10^{-7}K^{-1}) (+100~+300°C)	55
Thermal Conductivity λ W/(m·K)	0.921

Coloring			
λ_{80}	385	λ_5	
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	367	$\lambda_{0.05}$	311

CCI		
B	G	R
0.00	0.62	0.63

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	0.04
320	0.11
330	0.24
340	0.41
350	0.58
360	0.73
370	0.83
380	0.90
390	0.938
400	0.962
420	0.984
440	0.991
460	0.995
480	0.997
500	0.997
550	0.998
600	0.997
650	0.998
700	0.997
800	0.997
900	0.995
1000	0.993
1200	0.994
1400	0.976
1600	0.986
1800	0.973
2000	0.942
2200	0.81
2400	0.58

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative (10^{-6}K^{-1})						
	t	C'	He-Ne	D	e	F'	g
-40~-20	5.9	6.4	6.4	6.5	6.7	7.0	7.3
-20~ 0	5.9	6.3	6.3	6.5	6.6	7.0	7.3
0~20	5.9	6.3	6.4	6.5	6.7	7.0	7.4
20~40	5.9	6.4	6.4	6.6	6.7	7.1	7.5
40~60	6.1	6.5	6.6	6.7	6.9	7.3	7.7
60~80	6.3	6.8	6.8	6.9	7.1	7.5	7.9

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.17
Specific Gravity d	3.36
Remarks	

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※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.