

S-LAL18N

Code(d) **729546**

Code(e) **732544**

Refractive Index n_d	1.72916 1.729157	Abbe Number ν_d	54.59	Dispersion n_F-n_C	0.013356
Refractive Index n_e	1.732341	Abbe Number ν_e	54.37	Dispersion n_F-n_C'	0.013470

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.68932
n_{1970}	1.97009	1.69700
n_{1530}	1.52958	1.70503
n_{1129}	1.12864	1.71187
n_t	1.01398	1.71408
n_s	0.85211	1.71788
$n_{A'}$	0.76819	1.72044
n_f	0.70652	1.72278
n_C	0.65627	1.72509
$n_{C'}$	0.64385	1.72574
$n_{\text{He-Ne}}$	0.6328	1.72634
n_D	0.58929	1.72904
n_d	0.58756	1.72916
n_e	0.54607	1.73234
n_F	0.48613	1.73845
$n_{F'}$	0.47999	1.73921
$n_{\text{He-Cd}}$	0.44157	1.74475
n_g	0.435835	1.74572
n_h	0.404656	1.75176
n_i	0.365015	1.76208

Constants of Dispersion Formula	
A_1	1.43131727E+00
A_2	5.01296855E-01
A_3	1.15464835E+00
B_1	6.82783222E-03
B_2	2.15840329E-02
B_3	8.09832700E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E (GPa)	120.4
Rigidity Modulus G (GPa)	46.7
Poisson's Ratio σ	0.289
Knoop Hardness Hk(Class)	720 7
Abrasion Aa	69

Partial Dispersions	
n_C-n_t	0.011009
$n_C-n_{A'}$	0.004650
n_d-n_C	0.004064
n_e-n_C	0.007248
n_g-n_d	0.016561
n_g-n_F	0.007269
n_h-n_g	0.006042
n_i-n_g	0.016363
n_C-n_t	0.011656
$n_e-n_{C'}$	0.006601
$n_{F'}-n_e$	0.006869
$n_i-n_{F'}$	0.022871

Relative Partial Dispersions	
$\theta_{C,t}$	0.8243
$\theta_{C,A'}$	0.3482
$\theta_{d,C}$	0.3043
$\theta_{e,C}$	0.5427
$\theta_{g,d}$	1.2400
$\theta_{g,F}$	0.5442
$\theta_{h,g}$	0.4524
$\theta_{i,g}$	1.2251
$\theta'_{C,t}$	0.8653
$\theta'_{e,C}$	0.4901
$\theta'_{F,e}$	0.5099
$\theta'_{i,F'}$	1.6979

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta \theta_{C,t}$	0.0215
$\Delta \theta_{C,A'}$	0.0062
$\Delta \theta_{g,d}$	-0.0113
$\Delta \theta_{g,F}$	-0.0089
$\Delta \theta_{i,g}$	-0.0428

Thermal Properties	
Strain Point StP (°C)	632
Annealing Point AP (°C)	655
Transformation Temperature Tg (°C)	685
Yield Point At (°C)	699
Softening Point SP (°C)	731
Expansion Coefficients (-30~+70°C)	59
α (10^{-7}K^{-1}) (+100~+300°C)	69
Thermal Conductivity λ W/(m·K)	0.871

Coloring			
λ_{80}	365	λ_5	280
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	343	$\lambda_{0.05}$	281

CCI		
B	G	R
0.00	0.30	0.31

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	0.04
290	0.21
300	0.30
310	0.32
320	0.55
330	0.68
340	0.78
350	0.86
360	0.912
370	0.946
380	0.967
390	0.978
400	0.984
420	0.991
440	0.994
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.999
700	0.999
800	0.998
900	0.998
1000	0.997
1200	0.996
1400	0.991
1600	0.991
1800	0.982
2000	0.956
2200	0.87
2400	0.60

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	3.3	3.7	3.7	3.8	4.0	4.4	4.7
-20~ 0	3.3	3.7	3.7	3.9	4.0	4.4	4.8
0~20	3.3	3.7	3.8	3.9	4.1	4.5	4.9
20~40	3.3	3.8	3.8	4.0	4.1	4.5	5.0
40~60	3.4	3.8	3.9	4.0	4.2	4.6	5.1
60~80	3.5	4.0	4.0	4.1	4.3	4.8	5.2

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁹ Pa)	1.58
Specific Gravity d	4.18
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.