

ZF4	728283	$n_d = 1.72825$	$v_d = 28.32$	$n_F - n_C = 0.025716$
		$n_e = 1.73432$	$v_e = 28.10$	$n_{F'} - n_{C'} = 0.026133$

Refractive Indices		
	λ (nm)	n_λ
n_{2325}	2325.42	1.68348
n_{1970}	1970.09	1.68834
n_{1530}	1529.58	1.69423
n_{1129}	1128.64	1.70086
n_{1064}	1064.00	1.70230
n_t	1013.98	1.70355
n_s	852.11	1.70887
$n_{A'}$	768.19	1.71289
n_r	706.52	1.71678
n_C	656.27	1.72082
$n_{C'}$	643.85	1.72198
n_{He-Ne}	632.80	1.72307
n_D	589.29	1.72804
n_d	587.56	1.72825
n_e	546.07	1.73432
n_F	486.13	1.74654
$n_{F'}$	479.99	1.74811
n_g	435.84	1.76193
n_h	404.66	1.77555
n_i	365.01	1.80097

Constants of Dispersion Formula	
A_0	2.87717417E+00
A_1	-9.11236503E-03
A_2	3.30792997E-02
A_3	2.36796622E-03
A_4	-1.69344300E-04
A_5	1.80959601E-05

Density	
ρ (g/cm ³)	4.52

Solarization	
$\Delta\lambda$ (%)	-0.2

Relative Partial Dispersion	
$P_{d,C}$	0.2889
$P_{e,d}$	0.2360
$P_{g,F}$	0.5985
$P'_{d,c'}$	0.2399
$P'_{e,d}$	0.2323
$P'_{g,F'}$	0.5288

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	0.0006
$\Delta P_{g,F}$	0.0019
$\Delta P_{C,t}$	-0.0058
$\Delta P_{C,s}$	-0.0037

Thermal Properties	
T _g (°C)	417
T _s (°C)	452
T ₁₀ ^{14.5} (°C)	353
T ₁₀ ¹³ (°C)	391
$\alpha_{50/80^\circ C}$ (10 ⁻⁷ /K)	92
$\alpha_{100/300^\circ C}$ (10 ⁻⁷ /K)	105
λ (W/(m·K))	1.03

Mechanical Properties	
HK (10 ⁷ Pa)	356
F _A	219
E (GPa)	54.0
G (GPa)	21.9
μ	0.235
σ_b (MPa)	
B (10 ⁻¹² /Pa)	1.85

Chemical Properties (grade)	
RC (S)	1
RA (S)	3
D _W	1
D _A	3
R _{OH} (S)	2
RP (S)	2

Expansion Coefficient α (×10 ⁻⁷ /K)	
°C	α
-50/-40	86
-40/-30	88
-30/-20	89
-20/-10	90
-10/0	91
0/10	92
10/20	93
20/30	94
30/40	94
40/50	95
50/60	95
60/70	96
70/80	96
80/90	97
90/100	97
100/110	98
110/120	99
120/130	100
130/140	101
140/150	102
150/160	102

Internal Transmittance		
λ (nm)	τ_{5mm}	τ_{10mm}
2400	0.946	0.888
2200	0.959	0.918
2000	0.983	0.961
1800	0.991	0.980
1600	0.998	0.997
1400	0.998	0.997
1200	0.998	0.997
1060	0.998	0.997
1000	0.998	0.997
950	0.998	0.997
900	0.998	0.997
850	0.998	0.997
800	0.998	0.997
750	0.998	0.997
700	0.998	0.997
650	0.998	0.997
600	0.998	0.997
550	0.998	0.997
500	0.998	0.997
480	0.997	0.994
460	0.996	0.991
440	0.993	0.986
420	0.989	0.976
400	0.972	0.945
390	0.955	0.911
380	0.925	0.855
370	0.865	0.746
360	0.725	0.524
350	0.415	0.171
340		
330		
320		
310		
300		
290		
280		

Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	395/345
Coloration of Internal Transmittance	
$\lambda\tau_{80}/\lambda\tau_5$	374/345

Range of Temperature (°C)	Temperature Coefficients of Refractive Index									
	dn/dt relative (×10 ⁻⁶ / °C)									
	t	s	C	C'	He-Ne	d	e	F	F'	g
-60 ~ -40	0.3	0.3	0.3	0.3	0.4	1.1	1.3	1.9	2.0	2.9
-40 ~ -20	0.4	0.4	0.4	0.4	0.5	1.2	1.6	2.2	2.3	3.4
-20 ~ 0	0.5	0.6	0.6	0.6	0.7	1.3	1.8	2.7	2.8	4.1
0 ~ 20	0.3	0.6	0.7	0.7	0.8	1.5	2.0	3.0	3.0	4.5
20 ~ 40	0.3	0.6	0.9	1.0	1.1	1.6	2.3	3.2	3.2	4.8
40 ~ 60	0.2	0.7	1.2	1.3	1.4	1.8	2.4	3.5	3.6	4.9
60 ~ 80	0.2	0.9	1.5	1.5	1.5	2.0	2.6	3.9	4.0	5.7
80 ~ 100	0.3	0.9	1.6	1.6	1.7	2.1	2.8	4.2	4.3	6.1
100 ~ 120	0.4	1.0	1.7	1.8	1.9	2.3	2.8	4.4	4.4	6.3
120 ~ 140	0.4	1.0	1.8	1.9	2.0	2.7	3.1	4.6	4.6	6.5
140 ~ 160	0.6	1.2	2.0	2.1	2.2	2.8	3.2	4.8	4.8	6.7

Constants of dn/dt		
D ₀	D ₁	D ₂
-3.35E-06	1.29E-08	-3.14E-11
E ₀	E ₁	λ_{TK}
8.30E-07	1.50E-09	2.96E-01