

<b>ZF1</b>	<b>648338</b>	$n_d = 1.64769$	$v_d = 33.84$	$n_F - n_C = 0.019140$
		$n_e = 1.65223$	$v_e = 33.58$	$n_{F'} - n_{C'} = 0.019421$

Refractive Indices		
	$\lambda$ (nm)	$n_\lambda$
$n_{2325}$	2325.42	1.61010
$n_{1970}$	1970.09	1.61487
$n_{1530}$	1529.58	1.62046
$n_{1129}$	1128.64	1.62633
$n_{1064}$	1064.00	1.62755
$n_t$	1013.98	1.62858
$n_s$	852.11	1.63287
$n_{A'}$	768.19	1.63602
$n_r$	706.52	1.63902
$n_C$	656.27	1.64210
$n_{C'}$	643.85	1.64297
$n_{He-Ne}$	632.80	1.64380
$n_D$	589.29	1.64753
$n_d$	587.56	1.64769
$n_e$	546.07	1.65223
$n_F$	486.13	1.66124
$n_{F'}$	479.99	1.66239
$n_g$	435.84	1.67252
$n_h$	404.66	1.68238
$n_i$	365.01	1.70035

Relative Partial Dispersion	
$P_{d,C}$	0.2921
$P_{e,d}$	0.2372
$P_{g,F}$	0.5893
$P'_{d,c'}$	0.2430
$P'_{e,d}$	0.2338
$P'_{g,F'}$	0.5216

Chemical Properties (grade)	
RC (S)	1
RA (S)	2
$D_W$	1
$D_A$	2
$R_{OH}$ (S)	1
RP (S)	2

Internal Transmittance		
$\lambda$ (nm)	$\tau_{5mm}$	$\tau_{10mm}$
2400	0.931	0.867
2200	0.950	0.900
2000	0.987	0.974
1800	0.995	0.990
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
750	0.999	0.998
700	0.999	0.998
650	0.999	0.998
600	0.999	0.998
550	0.999	0.998
500	0.999	0.998
480	0.999	0.998
460	0.999	0.998
440	0.998	0.996
420	0.997	0.994
400	0.995	0.992
390	0.992	0.986
380	0.986	0.976
370	0.979	0.961
360	0.949	0.914
350	0.895	0.811
340	0.732	0.541
330	0.343	0.120
320		
310		
300		
290		
280		

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	-0.0008
$\Delta P_{g,F}$	0.0019
$\Delta P_{C,t}$	0.0023
$\Delta P_{C,s}$	0.0006

Expansion Coefficient $\alpha$ ( $\times 10^{-7}/K$ )	
$^{\circ}C$	$\alpha$
-50/-40	78
-40/-30	81
-30/-20	83
-20/-10	84
-10/0	86
0/10	87
10/20	88
20/30	89
30/40	90
40/50	91
50/60	92
60/70	92
70/80	93
80/90	94
90/100	95
100/110	96
110/120	97
120/130	98
130/140	99
140/150	100
150/160	101

Thermal Properties	
$T_g$ ( $^{\circ}C$ )	428
$T_s$ ( $^{\circ}C$ )	478
$T_{10}^{14.5}$ ( $^{\circ}C$ )	388
$T_{10}^{13}$ ( $^{\circ}C$ )	403
$\alpha_{50/80^{\circ}C}$ ( $10^{-7}/K$ )	88
$\alpha_{100/300^{\circ}C}$ ( $10^{-7}/K$ )	102
$\lambda$ (W/(m·K))	0.88

Mechanical Properties	
HK ( $10^7 Pa$ )	395
$F_A$	198
E (GPa)	55.2
G (GPa)	22.3
$\mu$	0.236
$\sigma_b$ (MPa)	
B ( $10^{-12}/Pa$ )	2.40

Constants of Dispersion Formula	
$A_0$	2.63523951E+00
$A_1$	-8.81500293E-03
$A_2$	2.60315994E-02
$A_3$	8.16500390E-04
$A_4$	6.27737485E-06
$A_5$	4.11832992E-06

Density		Solarization	
$\rho$ (g/cm <sup>3</sup> )	3.85	$\Delta\lambda$ (%)	-1.4

Range of Temperature ( $^{\circ}C$ )	Temperature Coefficients of Refractive Index									
	dn/dt relative ( $\times 10^{-6} / ^{\circ}C$ )									
	t	s	C	C'	He-Ne	d	e	F	F'	g
-60~-40	2.4	2.8	3.0	3.0	3.1	3.3	3.6	4.3	4.3	5.2
-40~-20	2.4	2.8	3.0	3.1	3.1	3.4	3.6	4.3	4.4	5.2
-20~0	2.4	2.8	3.1	3.1	3.2	3.4	3.7	4.4	4.5	5.2
0~20	2.4	2.8	3.1	3.1	3.2	3.4	3.7	4.5	4.5	5.5
20~40	2.4	2.9	3.2	3.2	3.2	3.5	3.8	4.6	4.7	5.5
40~60	2.5	2.9	3.3	3.3	3.3	3.6	3.9	4.8	4.8	5.8
60~80	2.7	3.1	3.4	3.5	3.6	3.8	4.1	5.0	5.1	6.0
80~100	2.8	3.2	3.6	3.7	3.7	4.0	4.4	5.2	5.3	6.3
100~120	2.9	3.3	3.8	3.9	3.9	4.1	4.6	5.4	5.4	6.6
120~140	3.1	3.4	3.9	4.0	4.0	4.3	4.8	5.5	5.6	6.8
140~160	3.1	3.5	4.1	4.1	4.2	4.4	5.0	5.7	5.8	7.1

Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	360/330
Coloration of Internal Transmittance	
$\lambda\tau_{80}/\lambda\tau_5$	349/327

Constants of dn/dt		
$D_0$	$D_1$	$D_2$
1.23E-06	1.30E-08	-1.05E-11
$E_0$	$E_1$	$\lambda_{TK}$
6.78E-07	6.73E-10	2.81E-01