

**SCHOTT**  
glass made of ideas

## Optical Glass

Data Sheets



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## Explanations

### Refractive indices

The refractive indices  $n$  are listed for a maximum of 23 wavelengths in the range between 248.2 nm and 2325.4 nm.

### Constants of the dispersion formula

From the Sellmeier dispersion formula

$$n^2(\lambda) - 1 = \frac{B_1 \lambda^2}{\lambda^2 - C_1} + \frac{B_2 \lambda^2}{\lambda^2 - C_2} + \frac{B_3 \lambda^2}{\lambda^2 - C_3}$$

the refractive indices for any wavelength within the range from the near UV to 2.3  $\mu\text{m}$  can be calculated with the help of the constants  $B_1, B_2, B_3$ , and  $C_1, C_2, C_3$ .

### Constants of the formula $dn/dT$

The temperature dependence of the refractive index can be calculated using the following formula:

$$\frac{dn_{\text{abs}}(\lambda, T)}{dT} = \frac{n^2(\lambda, T_0) - 1}{2 n(\lambda, T_0)} \left( D_0 + 2 D_1 \Delta T + 3 D_2 \Delta T^2 + \frac{E_0 + 2 E_1 \Delta T}{\lambda^2 - \lambda_{\text{TK}}^2} \right)$$

The constants are valid for a temperature range from  $-100^\circ\text{C}$  to  $+140^\circ\text{C}$  and a wavelength range from 0.365  $\mu\text{m}$  to 1.014  $\mu\text{m}$ . The temperature coefficients in the data sheets are guideline values.

### Temperature coefficient of refraction

$\Delta n_{\text{rel}} / \Delta T$  referring to air at normal pressure 1013.3 mbar

$\Delta n_{\text{abs}} / \Delta T$  referring to vacuum

### Internal transmittance $\tau_i$

The internal transmittance in the wavelength range between 250 nm and 2500 nm is listed for thickness of 10 and 25 mm. The internal transmittance and color code listed in the data sheet represent median values from several melts of one glass type. For HT and HTultra grade, the internal transmittance in the visible spectrum includes guaranteed minimum values.

### Color code

The color code lists the wavelength  $\lambda_{80}$  and  $\lambda_5$  at which the transmittance is 0.80 and 0.05 at 10 mm thickness. The values are rounded off to 10 nm and denoted by eliminating the first digit. For high index glass types with  $nd > 1.83$ , the data of the color codes (marked by \*) refers to the transmittance values 0.70 and 0.05 ( $\lambda_{70}$  and  $\lambda_5$ ).

### Relative partial dispersion

The relative partial dispersions  $P_{xy}$  and  $P'_{xy}$  for the wavelengths  $x$  and  $y$  are derived from the equations.

$$P_{xy} = \frac{n_x - n_y}{n_F - n_C} \quad \text{und} \quad P'_{xy} = \frac{n_x - n_y}{n_{F'} - n_{C'}}$$

### Deviation of the relative partial dispersion from the "normal line" $\Delta P$

The term  $\Delta P_{xy}$  quantitatively describes a deviation relation of the dispersion from the "normal glasses".

## Other characteristics

$\alpha_{-30/+70}$	= The coefficient of thermal expansion in the temperature range between $-30^{\circ}\text{C}$ und $+70^{\circ}\text{C}$ in $10^{-6}/\text{K}$
$\alpha_{20/300}$	= The coefficient of linear thermal expansion in the temperature range between $+20^{\circ}\text{C}$ und $+300^{\circ}\text{C}$ in $10^{-6}/\text{K}$
Tg	= Transformation temperature in $^{\circ}\text{C}$
$T_{10^{13.0}}$	= Temperature of the glass in $^{\circ}\text{C}$ at a viscosity of $10^{13}$ dPa·s
$T_{10^{7.6}}$	= Temperature of the glass in $^{\circ}\text{C}$ at a viscosity of $10^{7.6}$ dPa·s
$c_p$	= average specific heat capacity in $\text{J}/(\text{g}\cdot\text{K})$
$\lambda$	= Thermal conductivity in $\text{W}/(\text{m}\cdot\text{K})$
AT*	= Yield point/sag temperature in $^{\circ}\text{C}$
$\rho$	= Density in $\text{g}/\text{cm}^3$
E	= Elasticity modulus in $10^3$ N/mm <sup>2</sup>
$\mu$	= Poisson's ratio
K	= Stress optical coefficient in $10^{-6}$ mm <sup>2</sup> /N
HK	= Knoop hardness
HG	= Grindability class (ISO 12844)
Abrasion Aa*	= Grindability according to JOGIS**
CR	= Climatic resistance Resistance to moisture in the air expressed in CR classes 1 (high) to 4 (low).
FR	= Stain resistance Resistance to stain formation expressed in FR classes 0 (high) to 5 (low).
SR	= Acid resistance Resistance to acid solutions expressed in SR classes 1 (high) to 4 (low) and 51 to 53 (very low).
AR	= Alkali resistance Resistance to alkaline solutions expressed in AR classes 1 (high) to 4 (low).
PR	= Phosphate resistance Resistance to alkaline phosphate containing solutions expressed in PR classes 1 (high) to 4 (low).
SR-J*	= Acid resistance class according to JOGIS**
WR-J*	= Water resistance class according to JOGIS**

\* only precision molding glasses

\*\* JOGIS = Japanese Optical Glass Industrial Standards

## FK5HTi 487705.245

$n_d = 1.48748$	$v_d = 70.47$	$n_F - n_C = 0.006918$
$n_e = 1.48913$	$v_e = 70.29$	$n_{F'} - n_{C'} = 0.006959$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.46180
$n_{1970.1}$	1970.1	1.46738
$n_{1529.6}$	1529.6	1.47312
$n_{1060.0}$	1060.0	1.47855
$n_t$	1014.0	1.47912
$n_s$	852.1	1.48137
$n_r$	706.5	1.48409
$n_C$	656.3	1.48534
$n_{C'}$	643.8	1.48568
$n_{632.8}$	632.8	1.48600
$n_D$	589.3	1.48742
$n_d$	587.6	1.48748
$n_e$	546.1	1.48913
$n_F$	486.1	1.49225
$n_{F'}$	480.0	1.49264
$n_g$	435.8	1.49591
$n_h$	404.7	1.49892
$n_i$	365.0	1.50398
$n_{334.1}$	334.1	1.50935
$n_{312.6}$	312.6	1.51423
$n_{296.7}$	296.7	1.51861
$n_{280.4}$	280.4	1.52409
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.683	0.385
2325	0.830	0.628
1970	0.971	0.930
1530	0.986	0.965
1060	0.999	0.998
700	0.999	0.997
660	0.998	0.995
620	0.998	0.994
580	0.998	0.995
546	0.998	0.995
500	0.998	0.994
460	0.998	0.995
436	0.998	0.996
420	0.999	0.997
405	0.999	0.997
400	0.999	0.997
390	0.999	0.997
380	0.998	0.996
370	0.999	0.996
365	0.998	0.996
350	0.998	0.994
334	0.996	0.989
320	0.992	0.979
310	0.983	0.958
300	0.959	0.900
290	0.896	0.760
280	0.764	0.510
270	0.546	0.220
260	0.302	0.050
250	0.120	0.002

Relative Partial Dispersion	
$P_{s,t}$	0.3253
$P_{C,s}$	0.5742
$P_{d,C}$	0.3098
$P_{e,d}$	0.2388
$P_{g,F}$	0.5288
$P_{i,h}$	0.7315
$P'_{s,t}$	0.3234
$P'_{C',s}$	0.6203
$P'_{d,C'}$	0.2584
$P'_{e,d}$	0.2374
$P'_{g,F'}$	0.4703
$P'_{i,h}$	0.7271

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0202
$\Delta P_{C,s}$	0.0070
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0036
$\Delta P_{i,g}$	0.0321

Constants of Dispersion Formula	
$B_1$	0.90936218
$B_2$	0.279077054
$B_3$	0.891813298
$C_1$	0.0052014247
$C_2$	0.0158938446
$C_3$	95.9109448

Constants of Dispersion $dn/dT$	
$D_0$	$-7.47 \cdot 10^{-6}$
$D_1$	$1.58 \cdot 10^{-8}$
$D_2$	$-1.23 \cdot 10^{-11}$
$E_0$	$3.58 \cdot 10^{-7}$
$E_1$	$4.03 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.164

Color Code	
$\lambda_{80}/\lambda_5$	29/25
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
i-line glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.0
$T_g [^\circ C]$	466
$T_{10}^{13.0} [^\circ C]$	469
$T_{10}^{7.6} [^\circ C]$	672
$c_p [J/(g \cdot K)]$	0.808
$\lambda [W/(m \cdot K)]$	0.925
$\rho [g/cm^3]$	2.45
$E [10^3 N/mm^2]$	62
$\mu$	0.232
$K [10^{-6} mm^2/N]$	2.91
$HK_{0.1/20}$	520
<b>HG</b>	
<b>CR</b>	2
<b>FR</b>	1
<b>SR</b>	4
<b>AR</b>	2
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-1.6	-1.2	-0.9	-3.6	-3.3	-3.0
+20/ +40	-1.5	-1.1	-0.7	-2.7	-2.4	-2.0
+60/ +80	-1.3	-0.8	-0.4	-2.3	-1.8	-1.5

## N-FK5 487704.245

$n_d = 1.48749$	$v_d = 70.41$	$n_F - n_C = 0.006924$
$n_e = 1.48914$	$v_e = 70.23$	$n_{F'} - n_{C'} = 0.006965$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.46181
$n_{1970.1}$	1970.1	1.46738
$n_{1529.6}$	1529.6	1.47312
$n_{1060.0}$	1060.0	1.47855
$n_t$	1014.0	1.47912
$n_s$	852.1	1.48137
$n_r$	706.5	1.48410
$n_C$	656.3	1.48535
$n_{C'}$	643.8	1.48569
$n_{632.8}$	632.8	1.48601
$n_D$	589.3	1.48743
$n_d$	587.6	1.48749
$n_e$	546.1	1.48914
$n_F$	486.1	1.49227
$n_{F'}$	480.0	1.49266
$n_g$	435.8	1.49593
$n_h$	404.7	1.49894
$n_i$	365.0	1.50401
$n_{334.1}$	334.1	1.50939
$n_{312.6}$	312.6	1.51428
$n_{296.7}$	296.7	1.51867
$n_{280.4}$	280.4	1.52415
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.679	0.380
2325	0.831	0.630
1970	0.971	0.930
1530	0.986	0.965
1060	0.999	0.998
700	0.998	0.995
660	0.996	0.991
620	0.996	0.990
580	0.996	0.991
546	0.996	0.991
500	0.996	0.989
460	0.996	0.990
436	0.997	0.992
420	0.997	0.993
405	0.998	0.994
400	0.998	0.994
390	0.998	0.994
380	0.996	0.991
370	0.997	0.992
365	0.997	0.992
350	0.995	0.988
334	0.991	0.977
320	0.980	0.950
310	0.954	0.890
300	0.896	0.760
290	0.758	0.500
280	0.504	0.180
270	0.221	0.020
260	0.060	
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3252
$P_{C,s}$	0.5740
$P_{d,C}$	0.3097
$P_{e,d}$	0.2388
$P_{g,F}$	0.5290
$P_{i,h}$	0.7319
$P'_{s,t}$	0.3232
$P'_{C',s}$	0.6201
$P'_{d,C'}$	0.2584
$P'_{e,d}$	0.2374
$P'_{g,F'}$	0.4704
$P'_{i,h}$	0.7276

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0202
$\Delta P_{C,s}$	0.0070
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0036
$\Delta P_{i,g}$	0.0322

Constants of Dispersion Formula	
$B_1$	0.844309338
$B_2$	0.344147824
$B_3$	0.910790213
$C_1$	0.00475111955
$C_2$	0.0149814849
$C_3$	97.8600293

Constants of Dispersion $dn/dT$	
$D_0$	$-7.24 \cdot 10^{-6}$
$D_1$	$1.58 \cdot 10^{-8}$
$D_2$	$-9.51 \cdot 10^{-12}$
$E_0$	$3.51 \cdot 10^{-7}$
$E_1$	$4.61 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.156

Color Code	
$\lambda_{80}/\lambda_5$	30/26
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding, step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.0
$T_g [^\circ C]$	466
$T_{10}^{13.0} [^\circ C]$	469
$T_{10}^{7.6} [^\circ C]$	672
$c_p [J/(g \cdot K)]$	0.808
$\lambda [W/(m \cdot K)]$	0.925
$AT [^\circ C]$	557
$\rho [g/cm^3]$	2.45
$E [10^3 N/mm^2]$	62
$\mu$	0.232
$K [10^{-6} mm^2/N]$	2.91
$HK_{0.1/20}$	520
$HG$	3
$Abrasion Aa$	109
$CR$	2
$FR$	1
$SR$	4
$AR$	2
$PR$	2.3
$SR-J$	5
$WR-J$	4

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-1.5	-1.2	-0.9	-3.5	-3.2	-2.9
+20/ +40	-1.4	-1.0	-0.6	-2.6	-2.3	-2.0
+60/ +80	-1.2	-0.7	-0.3	-2.2	-1.8	-1.4



## N-FK51A 487845.368

$n_d = 1.48656$	$v_d = 84.47$	$n_F - n_C = 0.005760$
$n_e = 1.48794$	$v_e = 84.07$	$n_{F'} - n_{C'} = 0.005804$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.46958
$n_{1970.1}$	1970.1	1.47271
$n_{1529.6}$	1529.6	1.47608
$n_{1060.0}$	1060.0	1.47959
$n_t$	1014.0	1.47999
$n_s$	852.1	1.48165
$n_r$	706.5	1.48379
$n_C$	656.3	1.48480
$n_{C'}$	643.8	1.48508
$n_{632.8}$	632.8	1.48534
$n_D$	589.3	1.48651
$n_d$	587.6	1.48656
$n_e$	546.1	1.48794
$n_F$	486.1	1.49056
$n_{F'}$	480.0	1.49088
$n_g$	435.8	1.49364
$n_h$	404.7	1.49618
$n_i$	365.0	1.50046
$n_{334.1}$	334.1	1.50501
$n_{312.6}$	312.6	1.50911
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.891	0.750
2325	0.933	0.840
1970	0.976	0.940
1530	0.992	0.980
1060	0.998	0.994
700	0.998	0.995
660	0.998	0.995
620	0.998	0.996
580	0.999	0.997
546	0.999	0.997
500	0.998	0.996
460	0.997	0.993
436	0.997	0.992
420	0.997	0.992
405	0.997	0.993
400	0.997	0.993
390	0.997	0.992
380	0.995	0.988
370	0.990	0.976
365	0.985	0.963
350	0.948	0.875
334	0.831	0.630
320	0.618	0.300
310	0.428	0.120
300	0.262	0.035
290	0.137	0.010
280	0.058	
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2879
$P_{C,s}$	0.5465
$P_{d,C}$	0.3062
$P_{e,d}$	0.2388
$P_{g,F}$	0.5359
$P_{i,h}$	0.7429
$P'_{s,t}$	0.2858
$P'_{C',s}$	0.5909
$P'_{d,C'}$	0.2554
$P'_{e,d}$	0.2370
$P'_{g,F'}$	0.4759
$P'_{i,h}$	0.7373

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.1112
$\Delta P_{C,s}$	-0.0533
$\Delta P_{F,e}$	0.0110
$\Delta P_{g,F}$	0.0342
$\Delta P_{i,g}$	0.1675

Constants of Dispersion Formula	
$B_1$	0.971247817
$B_2$	0.216901417
$B_3$	0.904651666
$C_1$	0.00472301995
$C_2$	0.0153575612
$C_3$	168.68133

Constants of Dispersion $dn/dT$	
$D_0$	$-1.83 \cdot 10^{-5}$
$D_1$	$-7.89 \cdot 10^{-9}$
$D_2$	$-1.63 \cdot 10^{-12}$
$E_0$	$3.74 \cdot 10^{-7}$
$E_1$	$3.46 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.15

Color Code	
$\lambda_{80}/\lambda_5$	34/28
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding, step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	12.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	14.8
$T_g [^\circ C]$	464
$T_{10}^{13.0} [^\circ C]$	463
$T_{10}^{7.6} [^\circ C]$	527
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.760
$AT [^\circ C]$	503
$\rho [g/cm^3]$	3.68
$E [10^3 N/mm^2]$	73
$\mu$	0.302
$K [10^{-6} mm^2/N]$	0.70
$HK_{0.1/20}$	345
$HG$	6
$Abrasion Aa$	528
$CR$	1
$FR$	0
$SR$	52.3
$AR$	2.2
$PR$	4.3
$SR-J$	3
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-4.9	-4.6	-4.3	-6.9	-6.6	-6.4
+20/ +40	-6.0	-5.7	-5.3	-7.3	-7.0	-6.7
+60/ +80	-6.5	-6.2	-5.8	-7.5	-7.2	-6.9

## N-FK58 456909.365

$n_d = 1.45600$	$v_d = 90.90$	$n_F - n_C = 0.005017$
$n_e = 1.45720$	$v_e = 90.47$	$n_{F'} - n_{C'} = 0.005053$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.44114
$n_{1970.1}$	1970.1	1.44388
$n_{1529.6}$	1529.6	1.44683
$n_{1060.0}$	1060.0	1.44991
$n_t$	1014.0	1.45026
$n_s$	852.1	1.45171
$n_r$	706.5	1.45358
$n_C$	656.3	1.45446
$n_{C'}$	643.8	1.45471
$n_{632.8}$	632.8	1.45494
$n_D$	589.3	1.45596
$n_d$	587.6	1.45600
$n_e$	546.1	1.45720
$n_F$	486.1	1.45948
$n_{F'}$	480.0	1.45976
$n_g$	435.8	1.46216
$n_h$	404.7	1.46436
$n_i$	365.0	1.46807
$n_{334.1}$	334.1	1.47199
$n_{312.6}$	312.6	0.00000
$n_{296.7}$	296.7	0.00000
$n_{280.4}$	280.4	0.00000
$n_{248.3}$	248.3	0.00000

Constants of Dispersion Formula	
$B_1$	0.738042712
$B_2$	0.363371967
$B_3$	0.989296264
$C_1$	0.00339065607
$C_2$	0.0117551189
$C_3$	212.842145

Constants of Dispersion $dn/dT$	
$D_0$	$-2.05 \cdot 10^{-5}$
$D_1$	$-6.33 \cdot 10^{-9}$
$D_2$	$4.13 \cdot 10^{-11}$
$E_0$	$3.84 \cdot 10^{-7}$
$E_1$	$1.63 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.073

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-5.4	-5.1	-4.8	-7.3	-7.1	-6.8
+20/ +40	-6.5	-6.2	-5.9	-7.7	-7.4	-7.2
+60/ +80	-6.8	-6.5	-6.2	-7.8	-7.5	-7.3

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.997	0.993
2325	0.998	0.996
1970	0.999	0.998
1530	0.999	0.998
1060	0.998	0.995
700	0.997	0.993
660	0.997	0.993
620	0.997	0.994
580	0.998	0.994
546	0.998	0.995
500	0.998	0.994
460	0.997	0.992
436	0.996	0.991
420	0.996	0.991
405	0.996	0.991
400	0.996	0.991
390	0.996	0.990
380	0.995	0.987
370	0.992	0.980
365	0.990	0.975
350	0.976	0.940
334	0.928	0.830
320	0.821	0.610
310	0.693	0.400
300	0.525	0.200
290	0.364	0.080
280	0.239	0.028
270	0.152	0.010
260	0.109	0.005
250	0.090	

Color Code	
$\lambda_{80} / \lambda_5$	33/--
(*= $\lambda_{70} / \lambda_5$ )	

Remarks
XLD glass

Relative Partial Dispersion	
$P_{s,t}$	0.2894
$P_{C,s}$	0.5481
$P_{d,C}$	0.3066
$P_{e,d}$	0.2388
$P_{g,F}$	0.5347
$P_{i,h}$	0.7387
$P'_{s,t}$	0.2873
$P'_{C',s}$	0.5927
$P'_{d,C'}$	0.2557
$P'_{e,d}$	0.2371
$P'_{g,F'}$	0.4749
$P'_{i,h}$	0.7334

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.1386
$\Delta P_{C,s}$	-0.0667
$\Delta P_{F,e}$	0.0140
$\Delta P_{g,F}$	0.0438
$\Delta P_{i,g}$	0.2157

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6} / K]$	13.7
$\alpha_{+20/+300^\circ C} [10^{-6} / K]$	15.7
$T_g [^\circ C]$	445
$T_{10}^{13.0} [^\circ C]$	448
$T_{10}^{7.6} [^\circ C]$	508
$c_p [J/(g \cdot K)]$	0.710
$\lambda [W/(m \cdot K)]$	0.760
AT [°C]	475
$\rho [g/cm^3]$	3.65
$E [10^3 N/mm^2]$	70
$\mu$	0.300
$K [10^{-6} mm^2/N]$	0.54
HK <sub>0.1/20</sub>	372
HG	
CR	1
FR	1
SR	52.3
AR	3.3
PR	4.3
SR-J	4
WR-J	1



## N-PK51 529770.386

$n_d = 1.52855$	$v_d = 76.98$	$n_F - n_C = 0.006867$
$n_e = 1.53019$	$v_e = 76.58$	$n_{F'} - n_{C'} = 0.006923$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.50987
$n_{1970.1}$	1970.1	1.51312
$n_{1529.6}$	1529.6	1.51665
$n_{1060.0}$	1060.0	1.52045
$n_t$	1014.0	1.52089
$n_s$	852.1	1.52278
$n_r$	706.5	1.52527
$n_C$	656.3	1.52646
$n_{C'}$	643.8	1.52680
$n_{632.8}$	632.8	1.52711
$n_D$	589.3	1.52849
$n_d$	587.6	1.52855
$n_e$	546.1	1.53019
$n_F$	486.1	1.53333
$n_{F'}$	480.0	1.53372
$n_g$	435.8	1.53704
$n_h$	404.7	1.54010
$n_i$	365.0	1.54527
$n_{334.1}$	334.1	1.55079
$n_{312.6}$	312.6	1.55579
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.919	0.810
2325	0.941	0.860
1970	0.976	0.940
1530	0.994	0.985
1060	0.998	0.994
700	0.997	0.992
660	0.996	0.991
620	0.997	0.992
580	0.998	0.995
546	0.998	0.996
500	0.997	0.993
460	0.995	0.988
436	0.994	0.984
420	0.994	0.984
405	0.994	0.986
400	0.994	0.986
390	0.994	0.984
380	0.989	0.973
370	0.982	0.955
365	0.976	0.940
350	0.933	0.840
334	0.815	0.600
320	0.601	0.280
310	0.398	0.100
300	0.209	0.020
290	0.063	
280	0.010	
270	0.001	
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2750
$P_{C,s}$	0.5360
$P_{d,C}$	0.3046
$P_{e,d}$	0.2387
$P_{g,F}$	0.5401
$P_{i,h}$	0.7535
$P'_{s,t}$	0.2727
$P'_{C',s}$	0.5797
$P'_{d,C'}$	0.2540
$P'_{e,d}$	0.2367
$P'_{g,F'}$	0.4794
$P'_{i,h}$	0.7473

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0991
$\Delta P_{C,s}$	-0.0463
$\Delta P_{F,e}$	0.0088
$\Delta P_{g,F}$	0.0258
$\Delta P_{i,g}$	0.1203

Constants of Dispersion Formula	
$B_1$	1.15610775
$B_2$	0.153229344
$B_3$	0.785618966
$C_1$	0.00585597402
$C_2$	0.0194072416
$C_3$	140.537046

Constants of Dispersion $dn/dT$	
$D_0$	$-1.98 \cdot 10^{-5}$
$D_1$	$-6.06 \cdot 10^{-9}$
$D_2$	$1.60 \cdot 10^{-11}$
$E_0$	$4.16 \cdot 10^{-7}$
$E_1$	$5.01 \cdot 10^{-10}$
$\lambda_{TK}$ [ $\mu$ m]	0.134

Color Code	
$\lambda_{80}/\lambda_5$	34/29
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding, step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	12.4
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	14.1
$T_g$ [ $^\circ C$ ]	487
$T_{10}^{13.0}$ [ $^\circ C$ ]	488
$T_{10}^{7.6}$ [ $^\circ C$ ]	568
$c_p$ [J/(g·K)]	0.620
$\lambda$ [W/(m·K)]	0.650
AT [ $^\circ C$ ]	528
$\rho$ [g/cm <sup>3</sup> ]	3.86
E [ $10^3$ N/mm <sup>2</sup> ]	74
$\mu$	0.295
K [ $10^{-6}$ mm <sup>2</sup> /N]	0.54
HK <sub>0.1/20</sub>	415
HG	6
Abrasion Aa	592
CR	1
FR	0
SR	52.3
AR	3.3
PR	4.3
SR-J	3
WR-J	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	-6.0	-5.7	-5.4	-8.1	-7.8	-7.5
+20/ +40	-7.1	-6.7	-6.4	-8.4	-8.1	-7.7
+60/ +80	-7.5	-7.1	-6.7	-8.6	-8.2	-7.8

## N-PK52A 497816.370

$n_d = 1.49700$	$v_d = 81.61$	$n_F - n_C = 0.006090$
$n_e = 1.49845$	$v_e = 81.21$	$n_{F'} - n_{C'} = 0.006138$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.47966
$n_{1970.1}$	1970.1	1.48279
$n_{1529.6}$	1529.6	1.48616
$n_{1060.0}$	1060.0	1.48971
$n_t$	1014.0	1.49012
$n_s$	852.1	1.49184
$n_r$	706.5	1.49408
$n_C$	656.3	1.49514
$n_{C'}$	643.8	1.49544
$n_{632.8}$	632.8	1.49571
$n_D$	589.3	1.49695
$n_d$	587.6	1.49700
$n_e$	546.1	1.49845
$n_F$	486.1	1.50123
$n_{F'}$	480.0	1.50157
$n_g$	435.8	1.50450
$n_h$	404.7	1.50720
$n_i$	365.0	1.51175
$n_{334.1}$	334.1	1.51658
$n_{312.6}$	312.6	1.52096
$n_{296.7}$	296.7	1.52489
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.987	0.967
2325	0.991	0.978
1970	0.996	0.990
1530	0.998	0.994
1060	0.998	0.994
700	0.997	0.993
660	0.997	0.993
620	0.998	0.995
580	0.999	0.997
546	0.999	0.997
500	0.998	0.996
460	0.997	0.992
436	0.996	0.990
420	0.996	0.990
405	0.997	0.992
400	0.997	0.992
390	0.997	0.992
380	0.996	0.989
370	0.992	0.980
365	0.988	0.970
350	0.950	0.880
334	0.831	0.630
320	0.618	0.300
310	0.428	0.120
300	0.250	0.040
290	0.120	0.010
280	0.044	
270	0.014	
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2819
$P_{C,s}$	0.5417
$P_{d,C}$	0.3055
$P_{e,d}$	0.2388
$P_{g,F}$	0.5377
$P_{i,h}$	0.7470
$P'_{s,t}$	0.2797
$P'_{C',s}$	0.5858
$P'_{d,C'}$	0.2548
$P'_{e,d}$	0.2369
$P'_{g,F'}$	0.4774
$P'_{i,h}$	0.7412

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.1084
$\Delta P_{C,s}$	-0.0514
$\Delta P_{F,e}$	0.0103
$\Delta P_{g,F}$	0.0311
$\Delta P_{i,g}$	0.1497

Constants of Dispersion Formula	
$B_1$	1.029607
$B_2$	0.1880506
$B_3$	0.736488165
$C_1$	0.00516800155
$C_2$	0.0166658798
$C_3$	138.964129

Constants of Dispersion $dn/dT$	
$D_0$	$-1.97 \cdot 10^{-5}$
$D_1$	$-5.50 \cdot 10^{-9}$
$D_2$	$5.28 \cdot 10^{-12}$
$E_0$	$3.60 \cdot 10^{-7}$
$E_1$	$2.45 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.172

Color Code	
$\lambda_{80}/\lambda_5$	34/28
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	13.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	15.0
$T_g [^\circ C]$	467
$T_{10}^{13.0} [^\circ C]$	467
$T_{10}^{7.6} [^\circ C]$	538
$c_p [J/(g \cdot K)]$	0.670
$\lambda [W/(m \cdot K)]$	0.730
$AT [^\circ C]$	520
$\rho [g/cm^3]$	3.70
$E [10^3 N/mm^2]$	71
$\mu$	0.298
$K [10^{-6} mm^2/N]$	0.67
$HK_{0.1/20}$	355
$HG$	6
<b>Abrasion Aa</b>	526
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	52.3
<b>AR</b>	3.3
<b>PR</b>	4.3
<b>SR-J</b>	4
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-5.7	-5.4	-5.1	-7.7	-7.4	-7.1
+20/ +40	-6.7	-6.4	-6.0	-8.0	-7.7	-7.4
+60/ +80	-7.1	-6.8	-6.4	-8.1	-7.8	-7.5

**N-PSK3**  
**552635.291**

$n_d = 1.55232$	$v_d = 63.46$	$n_F - n_C = 0.008704$
$n_e = 1.55440$	$v_e = 63.23$	$n_{F'} - n_{C'} = 0.008767$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.52375
$n_{1970.1}$	1970.1	1.52954
$n_{1529.6}$	1529.6	1.53558
$n_{1060.0}$	1060.0	1.54154
$n_t$	1014.0	1.54218
$n_s$	852.1	1.54482
$n_r$	706.5	1.54811
$n_C$	656.3	1.54965
$n_{C'}$	643.8	1.55008
$n_{632.8}$	632.8	1.55048
$n_D$	589.3	1.55224
$n_d$	587.6	1.55232
$n_e$	546.1	1.55440
$n_F$	486.1	1.55835
$n_{F'}$	480.0	1.55885
$n_g$	435.8	1.56302
$n_h$	404.7	1.56688
$n_i$	365.0	1.57342
$n_{334.1}$	334.1	1.58041
$n_{312.6}$	312.6	1.58679
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	0.88727211
$B_2$	0.489592425
$B_3$	1.04865296
$C_1$	0.00469824067
$C_2$	0.0161818463
$C_3$	104.374975

Constants of Dispersion dn/dT	
$D_0$	$2.03 \cdot 10^{-6}$
$D_1$	$1.19 \cdot 10^{-8}$
$D_2$	$2.46 \cdot 10^{-11}$
$E_0$	$3.14 \cdot 10^{-7}$
$E_1$	$2.45 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.235

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	2.6	3.1	3.6	0.6	1.0	1.5
+20/ +40	2.5	3.0	3.5	1.2	1.6	2.1
+60/ +80	2.7	3.2	3.8	1.7	2.2	2.7

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.648	0.338
2325	0.809	0.588
1970	0.949	0.877
1530	0.991	0.978
1060	0.999	0.997
700	0.998	0.995
660	0.997	0.993
620	0.997	0.992
580	0.997	0.993
546	0.997	0.993
500	0.996	0.990
460	0.995	0.987
436	0.994	0.986
420	0.994	0.986
405	0.995	0.987
400	0.994	0.986
390	0.993	0.983
380	0.991	0.977
370	0.988	0.971
365	0.985	0.964
350	0.967	0.920
334	0.915	0.800
320	0.770	0.520
310	0.583	0.260
300	0.325	0.060
290	0.123	
280	0.026	
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	33/28
(*= $\lambda_{70} / \lambda_5$ )	
Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.3023
$P_{C,s}$	0.5555
$P_{d,C}$	0.3069
$P_{e,d}$	0.2386
$P_{g,F}$	0.5365
$P_{i,h}$	0.7509
$P'_{s,t}$	0.3001
$P'_{C',s}$	0.6002
$P'_{d,C'}$	0.2559
$P'_{e,d}$	0.2369
$P'_{g,F'}$	0.4767
$P'_{i,h}$	0.7454

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0118
$\Delta P_{C,s}$	0.0047
$\Delta P_{F,e}$	-0.0005
$\Delta P_{g,F}$	-0.0005
$\Delta P_{i,g}$	0.0016

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6} / K]$	6.2
$\alpha_{+20/+300^\circ C} [10^{-6} / K]$	7.3
$T_g [^\circ C]$	599
$T_{10}^{13.0} [^\circ C]$	597
$T_{10}^{7.6} [^\circ C]$	736
$c_p [J/(g \cdot K)]$	0.682
$\lambda [W/(m \cdot K)]$	0.990
$\rho [g/cm^3]$	2.91
$E [10^3 N/mm^2]$	84
$\mu$	0.226
$K [10^{-6} mm^2/N]$	2.48
$HK_{0.1/20}$	630
<b>HG</b>	2
<b>CR</b>	3
<b>FR</b>	0
<b>SR</b>	2.2
<b>AR</b>	2
<b>PR</b>	2

## N-PSK53A 618634.357

$n_d = 1.61800$	$v_d = 63.39$	$n_F - n_C = 0.009749$
$n_e = 1.62033$	$v_e = 63.10$	$n_{F'} - n_{C'} = 0.009831$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59015
$n_{1970.1}$	1970.1	1.59528
$n_{1529.6}$	1529.6	1.60073
$n_{1060.0}$	1060.0	1.60641
$n_t$	1014.0	1.60706
$n_s$	852.1	1.60979
$n_r$	706.5	1.61334
$n_C$	656.3	1.61503
$n_{C'}$	643.8	1.61550
$n_{632.8}$	632.8	1.61595
$n_D$	589.3	1.61791
$n_d$	587.6	1.61800
$n_e$	546.1	1.62033
$n_F$	486.1	1.62478
$n_{F'}$	480.0	1.62534
$n_g$	435.8	1.63007
$n_h$	404.7	1.63445
$n_i$	365.0	1.64190
$n_{334.1}$	334.1	1.64991
$n_{312.6}$	312.6	1.65724
$n_{296.7}$	296.7	1.66390
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.609	0.290
2325	0.764	0.510
1970	0.915	0.800
1530	0.982	0.956
1060	0.998	0.994
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.998	0.994
546	0.998	0.995
500	0.997	0.992
460	0.994	0.986
436	0.993	0.982
420	0.992	0.979
405	0.988	0.970
400	0.985	0.964
390	0.976	0.940
380	0.959	0.900
370	0.928	0.830
365	0.905	0.780
350	0.776	0.530
334	0.525	0.200
320	0.230	0.030
310	0.061	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2797
$P_{C,s}$	0.5380
$P_{d,C}$	0.3044
$P_{e,d}$	0.2385
$P_{g,F}$	0.5424
$P_{i,h}$	0.7642
$P'_{s,t}$	0.2774
$P'_{C',s}$	0.5816
$P'_{d,C'}$	0.2538
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4815
$P'_{i,h}$	0.7578

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0279
$\Delta P_{C,s}$	-0.0127
$\Delta P_{F,e}$	0.0020
$\Delta P_{g,F}$	0.0052
$\Delta P_{i,g}$	0.0208

Constants of Dispersion Formula	
$B_1$	1.38121836
$B_2$	0.196745645
$B_3$	0.886089205
$C_1$	0.00706416337
$C_2$	0.0233251345
$C_3$	97.4847345

Color Code	
$\lambda_{80}/\lambda_5$	36/31
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
step 0.5 available	

Constants of Dispersion dn/dT	
$D_0$	$-9.28 \cdot 10^{-6}$
$D_1$	$7.19 \cdot 10^{-9}$
$D_2$	$1.45 \cdot 10^{-12}$
$E_0$	$4.06 \cdot 10^{-7}$
$E_1$	$3.17 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.19

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.8
$T_g [^\circ C]$	606
$T_{10}^{13.0} [^\circ C]$	609
$T_{10}^{7.6} [^\circ C]$	699
$c_p [J/(g \cdot K)]$	0.590
$\lambda [W/(m \cdot K)]$	0.640
$AT [^\circ C]$	647
$\rho [g/cm^3]$	3.57
$E [10^3 N/mm^2]$	76
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.16
$HK_{0.1/20}$	415
$HG$	6
$Abrasion Aa$	284
$CR$	1
$FR$	1
$SR$	53.3
$AR$	2.3
$PR$	4.3
$SR-J$	5
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-2.6	-2.1	-1.6	-4.7	-4.3	-3.8
+20/ +40	-2.9	-2.4	-1.8	-4.3	-3.8	-3.3
+60/ +80	-2.9	-2.3	-1.8	-4.0	-3.5	-2.9

## SCHOTT N-BK 7® 517642.251

$n_d = 1.51680$	$v_d = 64.17$	$n_F - n_C = 0.008054$
$n_e = 1.51872$	$v_e = 63.96$	$n_{F'} - n_{C'} = 0.008110$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48921
$n_{1970.1}$	1970.1	1.49495
$n_{1529.6}$	1529.6	1.50091
$n_{1060.0}$	1060.0	1.50669
$n_t$	1014.0	1.50731
$n_s$	852.1	1.50980
$n_r$	706.5	1.51289
$n_C$	656.3	1.51432
$n_{C'}$	643.8	1.51472
$n_{632.8}$	632.8	1.51509
$n_D$	589.3	1.51673
$n_d$	587.6	1.51680
$n_e$	546.1	1.51872
$n_F$	486.1	1.52238
$n_{F'}$	480.0	1.52283
$n_g$	435.8	1.52668
$n_h$	404.7	1.53024
$n_i$	365.0	1.53627
$n_{334.1}$	334.1	1.54272
$n_{312.6}$	312.6	1.54862
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.665	0.360
2325	0.793	0.560
1970	0.933	0.840
1530	0.992	0.980
1060	0.999	0.997
700	0.998	0.996
660	0.998	0.994
620	0.998	0.994
580	0.998	0.995
546	0.998	0.996
500	0.998	0.994
460	0.997	0.993
436	0.997	0.992
420	0.997	0.993
405	0.997	0.993
400	0.997	0.992
390	0.996	0.989
380	0.993	0.983
370	0.991	0.977
365	0.988	0.971
350	0.967	0.920
334	0.905	0.780
320	0.770	0.520
310	0.574	0.250
300	0.292	0.050
290	0.063	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3098
$P_{C,s}$	0.5612
$P_{d,C}$	0.3076
$P_{e,d}$	0.2386
$P_{g,F}$	0.5349
$P_{i,h}$	0.7483
$P'_{s,t}$	0.3076
$P'_{C',s}$	0.6062
$P'_{d,C'}$	0.2566
$P'_{e,d}$	0.2370
$P'_{g,F'}$	0.4754
$P'_{i,h}$	0.7432

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0216
$\Delta P_{C,s}$	0.0087
$\Delta P_{F,e}$	-0.0009
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	0.0035

Constants of Dispersion Formula	
$B_1$	1.03961212
$B_2$	0.231792344
$B_3$	1.01046945
$C_1$	0.00600069867
$C_2$	0.0200179144
$C_3$	103.560653

Constants of Dispersion $dn/dT$	
$D_0$	$1.86 \cdot 10^{-6}$
$D_1$	$1.31 \cdot 10^{-8}$
$D_2$	$-1.37 \cdot 10^{-11}$
$E_0$	$4.34 \cdot 10^{-7}$
$E_1$	$6.27 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.17

Color Code	
$\lambda_{80}/\lambda_5$	33/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.3
$T_g [^\circ C]$	557
$T_{10}^{13.0} [^\circ C]$	557
$T_{10}^{7.6} [^\circ C]$	719
$c_p [J/(g \cdot K)]$	0.858
$\lambda [W/(m \cdot K)]$	1.114
$\rho [g/cm^3]$	2.51
$E [10^3 N/mm^2]$	82
$\mu$	0.206
$K [10^{-6} mm^2/N]$	2.77
$HK_{0.1/20}$	610
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2.3
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	2.9	3.3	0.3	0.8	1.2
+20/ +40	2.4	3.0	3.5	1.1	1.6	2.1
+60/ +80	2.5	3.1	3.7	1.5	2.1	2.7

## N-BK7HT 517642.251

$n_d = 1.51680$	$v_d = 64.17$	$n_F - n_C = 0.008054$
$n_e = 1.51872$	$v_e = 63.96$	$n_{F'} - n_{C'} = 0.008110$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48921
$n_{1970.1}$	1970.1	1.49495
$n_{1529.6}$	1529.6	1.50091
$n_{1060.0}$	1060.0	1.50669
$n_t$	1014.0	1.50731
$n_s$	852.1	1.50980
$n_r$	706.5	1.51289
$n_C$	656.3	1.51432
$n_{C'}$	643.8	1.51472
$n_{632.8}$	632.8	1.51509
$n_D$	589.3	1.51673
$n_d$	587.6	1.51680
$n_e$	546.1	1.51872
$n_F$	486.1	1.52238
$n_{F'}$	480.0	1.52283
$n_g$	435.8	1.52668
$n_h$	404.7	1.53024
$n_i$	365.0	1.53627
$n_{334.1}$	334.1	1.54272
$n_{312.6}$	312.6	1.54862
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.752	0.490
2325	0.845	0.657
1970	0.954	0.888
1530	0.995	0.987
1060	0.999	0.999
700	0.999	0.998
660	0.999	0.997
620	0.999	0.997
580	0.999	0.998
546	0.999	0.998
500	0.999	0.997
460	0.998	0.996
436	0.998	0.996
420	0.998	0.996
405	0.998	0.996
400	0.998	0.996
390	0.998	0.994
380	0.997	0.992
370	0.996	0.989
365	0.994	0.985
350	0.985	0.964
334	0.948	0.875
320	0.815	0.600
310	0.567	0.242
300	0.221	0.023
290	0.040	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3098
$P_{C,s}$	0.5612
$P_{d,C}$	0.3076
$P_{e,d}$	0.2386
$P_{g,F}$	0.5349
$P_{i,h}$	0.7483
$P'_{s,t}$	0.3076
$P'_{C',s}$	0.6062
$P'_{d,C'}$	0.2566
$P'_{e,d}$	0.2370
$P'_{g,F'}$	0.4754
$P'_{i,h}$	0.7432

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0216
$\Delta P_{C,s}$	0.0087
$\Delta P_{F,e}$	-0.0009
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	0.0035

Constants of Dispersion Formula	
$B_1$	1.03961212
$B_2$	0.231792344
$B_3$	1.01046945
$C_1$	0.00600069867
$C_2$	0.0200179144
$C_3$	103.560653

Constants of Dispersion $dn/dT$	
$D_0$	$1.86 \cdot 10^{-6}$
$D_1$	$1.31 \cdot 10^{-8}$
$D_2$	$-1.37 \cdot 10^{-11}$
$E_0$	$4.34 \cdot 10^{-7}$
$E_1$	$6.27 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.17

Color Code	
$\lambda_{80}/\lambda_5$	33/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.3
$T_g [^\circ C]$	557
$T_{10}^{13.0} [^\circ C]$	557
$T_{10}^{7.6} [^\circ C]$	719
$c_p [J/(g \cdot K)]$	0.858
$\lambda [W/(m \cdot K)]$	1.114
$\rho [g/cm^3]$	2.51
$E [10^3 N/mm^2]$	82
$\mu$	0.206
$K [10^{-6} mm^2/N]$	2.77
$HK_{0.1/20}$	610
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2.3
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	2.9	3.3	0.3	0.8	1.2
+20/ +40	2.4	3.0	3.5	1.1	1.6	2.1
+60/ +80	2.5	3.1	3.7	1.5	2.1	2.7

## N-BK7HTi 517642.251

$n_d = 1.51680$	$v_d = 64.17$	$n_F - n_C = 0.008054$
$n_e = 1.51872$	$v_e = 63.96$	$n_{F'} - n_{C'} = 0.008110$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48921
$n_{1970.1}$	1970.1	1.49495
$n_{1529.6}$	1529.6	1.50091
$n_{1060.0}$	1060.0	1.50669
$n_t$	1014.0	1.50731
$n_s$	852.1	1.50980
$n_r$	706.5	1.51289
$n_C$	656.3	1.51432
$n_{C'}$	643.8	1.51472
$n_{632.8}$	632.8	1.51509
$n_D$	589.3	1.51673
$n_d$	587.6	1.51680
$n_e$	546.1	1.51872
$n_F$	486.1	1.52238
$n_{F'}$	480.0	1.52283
$n_g$	435.8	1.52668
$n_h$	404.7	1.53024
$n_i$	365.0	1.53627
$n_{334.1}$	334.1	1.54272
$n_{312.6}$	312.6	1.54862
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.752	0.490
2325	0.845	0.657
1970	0.954	0.888
1530	0.995	0.987
1060	0.999	0.999
700	0.999	0.998
660	0.999	0.997
620	0.999	0.997
580	0.999	0.998
546	0.999	0.998
500	0.999	0.997
460	0.998	0.996
436	0.998	0.996
420	0.998	0.996
405	0.998	0.996
400	0.998	0.996
390	0.998	0.994
380	0.997	0.992
370	0.996	0.989
365	0.994	0.985
350	0.985	0.964
334	0.948	0.875
320	0.815	0.600
310	0.567	0.242
300	0.221	0.023
290	0.040	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3098
$P_{C,s}$	0.5612
$P_{d,C}$	0.3076
$P_{e,d}$	0.2386
$P_{g,F}$	0.5349
$P_{i,h}$	0.7483
$P'_{s,t}$	0.3076
$P'_{C',s}$	0.6062
$P'_{d,C'}$	0.2566
$P'_{e,d}$	0.2370
$P'_{g,F'}$	0.4754
$P'_{i,h}$	0.7432

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0216
$\Delta P_{C,s}$	0.0087
$\Delta P_{F,e}$	-0.0009
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	0.0035

Constants of Dispersion Formula	
$B_1$	1.03961212
$B_2$	0.231792344
$B_3$	1.01046945
$C_1$	0.00600069867
$C_2$	0.0200179144
$C_3$	103.560653

Constants of Dispersion $dn/dT$	
$D_0$	$1.86 \cdot 10^{-6}$
$D_1$	$1.31 \cdot 10^{-8}$
$D_2$	$-1.37 \cdot 10^{-11}$
$E_0$	$4.34 \cdot 10^{-7}$
$E_1$	$6.27 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.17

Color Code	
$\lambda_{80}/\lambda_5$	33/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
i-line glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.3
$T_g [^\circ C]$	557
$T_{10}^{13.0} [^\circ C]$	557
$T_{10}^{7.6} [^\circ C]$	719
$c_p [J/(g \cdot K)]$	0.858
$\lambda [W/(m \cdot K)]$	1.114
$\rho [g/cm^3]$	2.51
$E [10^3 N/mm^2]$	82
$\mu$	0.206
$K [10^{-6} mm^2/N]$	2.77
$HK_{0.1/20}$	610
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2.3
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	2.9	3.3	0.3	0.8	1.2
+20/ +40	2.4	3.0	3.5	1.1	1.6	2.1
+60/ +80	2.5	3.1	3.7	1.5	2.1	2.7



## N-BK10 498670.239

$n_d = 1.49782$	$v_d = 66.95$	$n_F - n_C = 0.007435$
$n_e = 1.49960$	$v_e = 66.78$	$n_{F'} - n_{C'} = 0.007481$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.47060
$n_{1970.1}$	1970.1	1.47647
$n_{1529.6}$	1529.6	1.48252
$n_{1060.0}$	1060.0	1.48827
$n_t$	1014.0	1.48887
$n_s$	852.1	1.49127
$n_r$	706.5	1.49419
$n_C$	656.3	1.49552
$n_{C'}$	643.8	1.49589
$n_{632.8}$	632.8	1.49623
$n_D$	589.3	1.49775
$n_d$	587.6	1.49782
$n_e$	546.1	1.49960
$n_F$	486.1	1.50296
$n_{F'}$	480.0	1.50337
$n_g$	435.8	1.50690
$n_h$	404.7	1.51014
$n_i$	365.0	1.51561
$n_{334.1}$	334.1	1.52144
$n_{312.6}$	312.6	1.52674
$n_{296.7}$	296.7	1.53151
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.739	0.470
2325	0.872	0.710
1970	0.980	0.950
1530	0.992	0.980
1060	0.998	0.996
700	0.998	0.995
660	0.997	0.993
620	0.997	0.992
580	0.997	0.993
546	0.997	0.993
500	0.996	0.991
460	0.996	0.990
436	0.996	0.989
420	0.996	0.989
405	0.996	0.990
400	0.996	0.990
390	0.996	0.989
380	0.994	0.985
370	0.994	0.986
365	0.994	0.986
350	0.991	0.978
334	0.978	0.947
320	0.941	0.860
310	0.872	0.710
300	0.707	0.420
290	0.414	0.110
280	0.123	
270	0.010	
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3224
$P_{C,s}$	0.5716
$P_{d,C}$	0.3093
$P_{e,d}$	0.2387
$P_{g,F}$	0.5303
$P_{i,h}$	0.7360
$P'_{s,t}$	0.3204
$P'_{C',s}$	0.6174
$P'_{d,C'}$	0.2580
$P'_{e,d}$	0.2373
$P'_{g,F'}$	0.4716
$P'_{i,h}$	0.7315

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0314
$\Delta P_{C,s}$	0.0126
$\Delta P_{F,e}$	-0.0012
$\Delta P_{g,F}$	-0.0008
$\Delta P_{i,g}$	0.0091

Constants of Dispersion Formula	
$B_1$	0.888308131
$B_2$	0.328964475
$B_3$	0.984610769
$C_1$	0.00516900822
$C_2$	0.0161190045
$C_3$	99.7575331

Constants of Dispersion $dn/dT$	
$D_0$	$3.32 \cdot 10^{-6}$
$D_1$	$1.72 \cdot 10^{-8}$
$D_2$	$-2.05 \cdot 10^{-11}$
$E_0$	$3.57 \cdot 10^{-7}$
$E_1$	$3.90 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.169

Color Code	
$\lambda_{80}/\lambda_5$	31/27
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.6
$T_g [^\circ C]$	551
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	753
$c_p [J/(g \cdot K)]$	0.810
$\lambda [W/(m \cdot K)]$	1.320
$\rho [g/cm^3]$	2.39
$E [10^3 N/mm^2]$	71
$\mu$	0.203
$K [10^{-6} mm^2/N]$	3.21
$HK_{0.1/20}$	560
$HG$	4
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.7	3.1	3.5	0.7	1.1	1.4
+20/ +40	2.9	3.4	3.8	1.6	2.1	2.5
+60/ +80	3.1	3.7	4.1	2.1	2.6	3.1

## P-BK7 516641.243

$n_d = 1.51640$	$v_d = 64.06$	$n_F - n_C = 0.008061$
$n_e = 1.51832$	$v_e = 63.87$	$n_{F'} - n_{C'} = 0.008115$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48811
$n_{1970.1}$	1970.1	1.49407
$n_{1529.6}$	1529.6	1.50025
$n_{1060.0}$	1060.0	1.50620
$n_t$	1014.0	1.50683
$n_s$	852.1	1.50936
$n_r$	706.5	1.51248
$n_C$	656.3	1.51392
$n_{C'}$	643.8	1.51431
$n_{632.8}$	632.8	1.51469
$n_D$	589.3	1.51633
$n_d$	587.6	1.51640
$n_e$	546.1	1.51832
$n_F$	486.1	1.52198
$n_{F'}$	480.0	1.52243
$n_g$	435.8	1.52628
$n_h$	404.7	1.52982
$n_i$	365.0	1.53583
$n_{334.1}$	334.1	1.54227
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.733	0.460
2325	0.867	0.700
1970	0.967	0.920
1530	0.992	0.979
1060	0.999	0.999
700	0.999	0.997
660	0.999	0.997
620	0.999	0.997
580	0.999	0.997
546	0.999	0.997
500	0.998	0.996
460	0.998	0.995
436	0.998	0.994
420	0.997	0.994
405	0.997	0.993
400	0.997	0.992
390	0.996	0.990
380	0.994	0.986
370	0.992	0.979
365	0.989	0.973
350	0.971	0.930
334	0.882	0.730
320	0.565	0.240
310	0.180	0.020
300	0.004	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3143
$P_{C,s}$	0.5649
$P_{d,C}$	0.3082
$P_{e,d}$	0.2387
$P_{g,F}$	0.5335
$P_{i,h}$	0.7455
$P'_{s,t}$	0.3122
$P'_{C',s}$	0.6102
$P'_{d,C'}$	0.2571
$P'_{e,d}$	0.2371
$P'_{g,F'}$	0.4742
$P'_{i,h}$	0.7405

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0303
$\Delta P_{C,s}$	0.0126
$\Delta P_{F,e}$	-0.0016
$\Delta P_{g,F}$	-0.0025
$\Delta P_{i,g}$	-0.0017

Constants of Dispersion Formula	
$B_1$	1.18318503
$B_2$	0.0871756426
$B_3$	1.03133701
$C_1$	0.00722141956
$C_2$	0.0268216805
$C_3$	101.702362

Constants of Dispersion $dn/dT$	
$D_0$	
$D_1$	
$D_2$	
$E_0$	
$E_1$	
$\lambda_{TK}$ [ $\mu\text{m}$ ]	

Color Code	
$\lambda_{80}/\lambda_5$	33/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	6.0
$\alpha_{+20/+300^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	7.3
$T_g$ [ $^\circ\text{C}$ ]	498
$T_{10}^{13.0}$ [ $^\circ\text{C}$ ]	498
$T_{10}^{7.6}$ [ $^\circ\text{C}$ ]	657
$c_p$ [ $\text{J}/(\text{g}\cdot\text{K})$ ]	0.870
$\lambda$ [ $\text{W}/(\text{m}\cdot\text{K})$ ]	1.130
$AT$ [ $^\circ\text{C}$ ]	546
$\rho$ [ $\text{g}/\text{cm}^3$ ]	2.43
$E$ [ $10^3 \text{N}/\text{mm}^2$ ]	85
$\mu$	0.202
$K$ [ $10^{-6} \text{mm}^2/\text{N}$ ]	2.77
$HK_{0.1/20}$	627
$HG$	
$Abrasion Aa$	66
$CR$	1
$FR$	0
$SR$	1
$AR$	2.3
$PR$	2.3
$SR-J$	1
$WR-J$	4

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/\text{K}$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/\text{K}$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20						
+20/ +40						
+60/ +80						

**K7**  
**511604.253**

$n_d = 1.51112$	$v_d = 60.41$	$n_F - n_C = 0.008461$
$n_e = 1.51314$	$v_e = 60.15$	$n_{F'} - n_{C'} = 0.008531$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48553
$n_{1970.1}$	1970.1	1.49046
$n_{1529.6}$	1529.6	1.49565
$n_{1060.0}$	1060.0	1.50091
$n_t$	1014.0	1.50150
$n_s$	852.1	1.50394
$n_r$	706.5	1.50707
$n_C$	656.3	1.50854
$n_{C'}$	643.8	1.50895
$n_{632.8}$	632.8	1.50934
$n_D$	589.3	1.51105
$n_d$	587.6	1.51112
$n_e$	546.1	1.51314
$n_F$	486.1	1.51700
$n_{F'}$	480.0	1.51748
$n_g$	435.8	1.52159
$n_h$	404.7	1.52540
$n_i$	365.0	1.53189
$n_{334.1}$	334.1	1.53891
$n_{312.6}$	312.6	1.54537
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.650	0.340
2325	0.758	0.500
1970	0.910	0.790
1530	0.992	0.980
1060	0.998	0.994
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.994
546	0.998	0.994
500	0.997	0.993
460	0.996	0.990
436	0.996	0.990
420	0.996	0.990
405	0.996	0.990
400	0.996	0.990
390	0.995	0.988
380	0.993	0.983
370	0.990	0.976
365	0.988	0.971
350	0.976	0.940
334	0.905	0.780
320	0.707	0.420
310	0.398	0.100
300	0.090	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2880
$P_{C,s}$	0.5436
$P_{d,C}$	0.3049
$P_{e,d}$	0.2385
$P_{g,F}$	0.5422
$P_{i,h}$	0.7677
$P'_{s,t}$	0.2857
$P'_{C',s}$	0.5874
$P'_{d,C'}$	0.2542
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4814
$P'_{i,h}$	0.7614

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0001
$\Delta P_{C,s}$	-0.0001
$\Delta P_{F,e}$	0.0000
$\Delta P_{g,F}$	0.0000
$\Delta P_{i,g}$	-0.0001

Constants of Dispersion Formula	
$B_1$	1.1273555
$B_2$	0.124412303
$B_3$	0.827100531
$C_1$	0.00720341707
$C_2$	0.0269835916
$C_3$	100.384588

Color Code	
$\lambda_{80}/\lambda_5$	33/30
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Constants of Dispersion $dn/dT$	
$D_0$	$-1.67 \cdot 10^{-6}$
$D_1$	$8.80 \cdot 10^{-9}$
$D_2$	$-2.86 \cdot 10^{-11}$
$E_0$	$5.42 \cdot 10^{-7}$
$E_1$	$7.81 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.172

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.7
$T_g [^\circ C]$	513
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	712
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	2.53
$E [10^3 N/mm^2]$	69
$\mu$	0.214
$K [10^{-6} mm^2/N]$	2.95
$HK_{0.1/20}$	520
<b>HG</b>	3
<b>CR</b>	3
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	1
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.0	1.6	2.1	-1.0	-0.4	0.1
+20/ +40	0.9	1.6	2.2	-0.4	0.2	0.9
+60/ +80	0.8	1.6	2.3	-0.2	0.6	1.2

**K10**  
**501564.252**

$n_d = 1.50137$	$v_d = 56.41$	$n_F - n_C = 0.008888$
$n_e = 1.50349$	$v_e = 56.15$	$n_{F'} - n_{C'} = 0.008967$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.47507
$n_{1970.1}$	1970.1	1.48008
$n_{1529.6}$	1529.6	1.48536
$n_{1060.0}$	1060.0	1.49076
$n_t$	1014.0	1.49137
$n_s$	852.1	1.49389
$n_r$	706.5	1.49713
$n_C$	656.3	1.49867
$n_{C'}$	643.8	1.49910
$n_{632.8}$	632.8	1.49950
$n_D$	589.3	1.50129
$n_d$	587.6	1.50137
$n_e$	546.1	1.50349
$n_F$	486.1	1.50756
$n_{F'}$	480.0	1.50807
$n_g$	435.8	1.51243
$n_h$	404.7	1.51649
$n_i$	365.0	1.52350
$n_{334.1}$	334.1	1.53120
$n_{312.6}$	312.6	1.53844
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.770	0.520
2325	0.831	0.630
1970	0.937	0.850
1530	0.993	0.983
1060	0.998	0.996
700	0.999	0.997
660	0.998	0.994
620	0.997	0.993
580	0.997	0.993
546	0.997	0.992
500	0.996	0.991
460	0.996	0.990
436	0.995	0.988
420	0.995	0.988
405	0.995	0.987
400	0.994	0.986
390	0.993	0.982
380	0.989	0.973
370	0.986	0.966
365	0.983	0.958
350	0.963	0.910
334	0.877	0.720
320	0.626	0.310
310	0.370	0.130
300	0.140	0.020
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2835
$P_{C,s}$	0.5385
$P_{d,C}$	0.3037
$P_{e,d}$	0.2382
$P_{g,F}$	0.5475
$P_{i,h}$	0.7888
$P'_{s,t}$	0.2810
$P'_{C',s}$	0.5817
$P'_{d,C'}$	0.2531
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4860
$P'_{i,h}$	0.7819

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0094
$\Delta P_{C,s}$	0.0041
$\Delta P_{F,e}$	-0.0007
$\Delta P_{g,F}$	-0.0015
$\Delta P_{i,g}$	-0.0048

Constants of Dispersion Formula	
$B_1$	1.15687082
$B_2$	0.0642625444
$B_3$	0.872376139
$C_1$	0.00809424251
$C_2$	0.0386051284
$C_3$	104.74773

Constants of Dispersion $dn/dT$	
$D_0$	$4.86 \cdot 10^{-6}$
$D_1$	$1.72 \cdot 10^{-8}$
$D_2$	$-3.02 \cdot 10^{-11}$
$E_0$	$3.82 \cdot 10^{-7}$
$E_1$	$4.53 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.26

Color Code	
$\lambda_{80}/\lambda_5$	33/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	459
$T_{10}^{13.0} [^\circ C]$	453
$T_{10}^{7.6} [^\circ C]$	691
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	1.120
$\rho [g/cm^3]$	2.52
$E [10^3 N/mm^2]$	65
$\mu$	0.190
$K [10^{-6} mm^2/N]$	3.12
$HK_{0.1/20}$	470
<b>HG</b>	4
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1
<b>PR</b>	1.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.3	3.9	4.5	1.3	1.8	2.4
+20/ +40	3.6	4.2	4.9	2.3	2.9	3.6
+60/ +80	3.8	4.5	5.2	2.8	3.4	4.2

## N-K5 522595.259

$n_d = 1.52249$	$v_d = 59.48$	$n_F - n_C = 0.008784$
$n_e = 1.52458$	$v_e = 59.22$	$n_{F'} - n_{C'} = 0.008858$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.49656
$n_{1970.1}$	1970.1	1.50146
$n_{1529.6}$	1529.6	1.50664
$n_{1060.0}$	1060.0	1.51197
$n_t$	1014.0	1.51257
$n_s$	852.1	1.51507
$n_r$	706.5	1.51829
$n_C$	656.3	1.51982
$n_{C'}$	643.8	1.52024
$n_{632.8}$	632.8	1.52064
$n_D$	589.3	1.52241
$n_d$	587.6	1.52249
$n_e$	546.1	1.52458
$n_F$	486.1	1.52860
$n_{F'}$	480.0	1.52910
$n_g$	435.8	1.53338
$n_h$	404.7	1.53734
$n_i$	365.0	1.54412
$n_{334.1}$	334.1	1.55145
$n_{312.6}$	312.6	1.55821
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.776	0.530
2325	0.847	0.660
1970	0.946	0.870
1530	0.994	0.986
1060	0.998	0.995
700	0.998	0.994
660	0.997	0.992
620	0.997	0.993
580	0.998	0.995
546	0.998	0.995
500	0.997	0.993
460	0.996	0.991
436	0.996	0.991
420	0.996	0.991
405	0.996	0.989
400	0.995	0.988
390	0.994	0.984
380	0.991	0.977
370	0.985	0.962
365	0.982	0.956
350	0.950	0.880
334	0.831	0.630
320	0.536	0.210
310	0.221	0.020
300	0.058	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2843
$P_{C,s}$	0.5404
$P_{d,C}$	0.3044
$P_{e,d}$	0.2384
$P_{g,F}$	0.5438
$P_{i,h}$	0.7717
$P'_{s,t}$	0.2819
$P'_{C',s}$	0.5839
$P'_{d,C'}$	0.2538
$P'_{e,d}$	0.2364
$P'_{g,F'}$	0.4828
$P'_{i,h}$	0.7653

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0025
$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0000
$\Delta P_{i,g}$	-0.0019

Constants of Dispersion Formula	
$B_1$	1.08511833
$B_2$	0.199562005
$B_3$	0.930511663
$C_1$	0.00661099503
$C_2$	0.024110866
$C_3$	111.982777

Constants of Dispersion $dn/dT$	
$D_0$	$-4.13 \cdot 10^{-7}$
$D_1$	$1.03 \cdot 10^{-8}$
$D_2$	$-3.40 \cdot 10^{-11}$
$E_0$	$4.73 \cdot 10^{-7}$
$E_1$	$5.19 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.213

Color Code	
$\lambda_{80}/\lambda_5$	34/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	8.2
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	9.6
$T_g$ [°C]	546
$T_{10}^{13.0}$ [°C]	540
$T_{10}^{7.6}$ [°C]	720
$c_p$ [J/(g·K)]	0.783
$\lambda$ [W/(m·K)]	0.950
$\rho$ [g/cm <sup>3</sup> ]	2.59
$E$ [ $10^3$ N/mm <sup>2</sup> ]	71
$\mu$	0.224
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	3.03
$HK_{0.1/20}$	530
$HG$	3
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.5	2.1	2.6	-0.6	0.0	0.5
+20/ +40	1.4	2.1	2.7	0.1	0.7	1.4
+60/ +80	1.4	2.1	2.8	0.4	1.1	1.8

## N-ZK7 508612.249

$n_d = 1.50847$	$v_d = 61.19$	$n_F - n_C = 0.008310$
$n_e = 1.51045$	$v_e = 60.98$	$n_{F'} - n_{C'} = 0.008370$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.48062
$n_{1970.1}$	1970.1	1.48637
$n_{1529.6}$	1529.6	1.49233
$n_{1060.0}$	1060.0	1.49813
$n_t$	1014.0	1.49876
$n_s$	852.1	1.50129
$n_r$	706.5	1.50445
$n_C$	656.3	1.50592
$n_{C'}$	643.8	1.50633
$n_{632.8}$	632.8	1.50671
$n_D$	589.3	1.50840
$n_d$	587.6	1.50847
$n_e$	546.1	1.51045
$n_F$	486.1	1.51423
$n_{F'}$	480.0	1.51470
$n_g$	435.8	1.51869
$n_h$	404.7	1.52238
$n_i$	365.0	1.52865
$n_{334.1}$	334.1	1.53538
$n_{312.6}$	312.6	1.54155
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.657	0.350
2325	0.847	0.660
1970	0.971	0.930
1530	0.990	0.976
1060	0.998	0.994
700	0.998	0.996
660	0.998	0.994
620	0.998	0.994
580	0.998	0.995
546	0.998	0.995
500	0.997	0.993
460	0.995	0.988
436	0.994	0.984
420	0.992	0.981
405	0.991	0.977
400	0.990	0.975
390	0.987	0.969
380	0.982	0.956
370	0.976	0.940
365	0.971	0.930
350	0.941	0.860
334	0.852	0.670
320	0.686	0.390
310	0.492	0.170
300	0.221	0.030
290	0.032	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3049
$P_{C,s}$	0.5570
$P_{d,C}$	0.3069
$P_{e,d}$	0.2386
$P_{g,F}$	0.5370
$P_{i,h}$	0.7543
$P'_{s,t}$	0.3027
$P'_{C',s}$	0.6017
$P'_{d,C'}$	0.2560
$P'_{e,d}$	0.2369
$P'_{g,F'}$	0.4771
$P'_{i,h}$	0.7488

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0267
$\Delta P_{C,s}$	0.0115
$\Delta P_{F,e}$	-0.0017
$\Delta P_{g,F}$	-0.0039
$\Delta P_{i,g}$	-0.0129

Constants of Dispersion Formula	
$B_1$	1.07715032
$B_2$	0.168079109
$B_3$	0.851889892
$C_1$	0.00676601657
$C_2$	0.0230642817
$C_3$	89.0498778

Constants of Dispersion $dn/dT$	
$D_0$	$1.15 \cdot 10^{-5}$
$D_1$	$1.73 \cdot 10^{-8}$
$D_2$	$-8.06 \cdot 10^{-11}$
$E_0$	$4.32 \cdot 10^{-7}$
$E_1$	$7.05 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.179

Color Code	
$\lambda_{80}/\lambda_5$	34/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	4.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	5.2
$T_g [^\circ C]$	539
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	721
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	1.042
$\rho [g/cm^3]$	2.49
$E [10^3 N/mm^2]$	70
$\mu$	0.214
$K [10^{-6} mm^2/N]$	3.63
$HK_{0.1/20}$	530
<b>HG</b>	4
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	1.2
<b>PR</b>	2.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	5.9	6.5	7.0	3.9	4.5	4.9
+20/ +40	6.4	7.0	7.6	5.1	5.7	6.3
+60/ +80	6.4	7.2	7.8	5.4	6.2	6.8

## N-BAK1 573576.319

$n_d = 1.57250$	$v_d = 57.55$	$n_F - n_C = 0.009948$
$n_e = 1.57487$	$v_e = 57.27$	$n_{F'} - n_{C'} = 0.010039$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54556
$n_{1970.1}$	1970.1	1.55032
$n_{1529.6}$	1529.6	1.55543
$n_{1060.0}$	1060.0	1.56088
$n_t$	1014.0	1.56152
$n_s$	852.1	1.56421
$n_r$	706.5	1.56778
$n_C$	656.3	1.56949
$n_{C'}$	643.8	1.56997
$n_{632.8}$	632.8	1.57041
$n_D$	589.3	1.57241
$n_d$	587.6	1.57250
$n_e$	546.1	1.57487
$n_F$	486.1	1.57943
$n_{F'}$	480.0	1.58000
$n_g$	435.8	1.58488
$n_h$	404.7	1.58941
$n_i$	365.0	1.59716
$n_{334.1}$	334.1	1.60554
$n_{312.6}$	312.6	1.61326
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.806	0.584
2325	0.877	0.721
1970	0.960	0.903
1530	0.994	0.986
1060	0.998	0.996
700	0.999	0.997
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.997	0.992
460	0.996	0.990
436	0.996	0.989
420	0.996	0.990
405	0.996	0.990
400	0.996	0.990
390	0.995	0.988
380	0.993	0.983
370	0.991	0.977
365	0.987	0.969
350	0.971	0.930
334	0.924	0.820
320	0.799	0.570
310	0.609	0.290
300	0.345	0.070
290	0.102	
280	0.014	
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2712
$P_{C,s}$	0.5301
$P_{d,C}$	0.3029
$P_{e,d}$	0.2384
$P_{g,F}$	0.5472
$P_{i,h}$	0.7788
$P'_{s,t}$	0.2687
$P'_{C',s}$	0.5730
$P'_{d,C'}$	0.2525
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4855
$P'_{i,h}$	0.7717

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0167
$\Delta P_{C,s}$	-0.0069
$\Delta P_{F,e}$	0.0006
$\Delta P_{g,F}$	0.0002
$\Delta P_{i,g}$	-0.0075

Constants of Dispersion Formula	
$B_1$	1.12365662
$B_2$	0.309276848
$B_3$	0.881511957
$C_1$	0.00644742752
$C_2$	0.0222284402
$C_3$	107.297751

Constants of Dispersion $dn/dT$	
$D_0$	$1.86 \cdot 10^{-7}$
$D_1$	$1.29 \cdot 10^{-8}$
$D_2$	$-1.87 \cdot 10^{-11}$
$E_0$	$5.25 \cdot 10^{-7}$
$E_1$	$5.46 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.182

Color Code	
$\lambda_{80}/\lambda_5$	33/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	7.6
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	8.6
$T_g$ [°C]	592
$T_{10}^{13.0}$ [°C]	592
$T_{10}^{7.6}$ [°C]	746
$c_p$ [J/(g·K)]	0.687
$\lambda$ [W/(m·K)]	0.795
$\rho$ [g/cm <sup>3</sup> ]	3.19
$E$ [ $10^3$ N/mm <sup>2</sup> ]	73
$\mu$	0.252
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.62
$HK_{0.1/20}$	530
$HG$	2
$CR$	2
$FR$	1
$SR$	3.3
$AR$	1.2
$PR$	2

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.7	2.4	3.0	-0.4	0.2	0.8
+20/ +40	1.8	2.5	3.2	0.4	1.2	1.8
+60/ +80	1.9	2.7	3.5	0.9	1.7	2.4



## N-BAK2 540597.286

$n_d = 1.53996$	$v_d = 59.71$	$n_F - n_C = 0.009043$
$n_e = 1.54212$	$v_e = 59.44$	$n_{F'} - n_{C'} = 0.009120$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.51387
$n_{1970.1}$	1970.1	1.51871
$n_{1529.6}$	1529.6	1.52385
$n_{1060.0}$	1060.0	1.52919
$n_t$	1014.0	1.52980
$n_s$	852.1	1.53234
$n_r$	706.5	1.53564
$n_C$	656.3	1.53721
$n_{C'}$	643.8	1.53765
$n_{632.8}$	632.8	1.53806
$n_D$	589.3	1.53988
$n_d$	587.6	1.53996
$n_e$	546.1	1.54212
$n_F$	486.1	1.54625
$n_{F'}$	480.0	1.54677
$n_g$	435.8	1.55117
$n_h$	404.7	1.55525
$n_i$	365.0	1.56221
$n_{334.1}$	334.1	1.56971
$n_{312.6}$	312.6	1.57660
$n_{296.7}$	296.7	1.58287
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.758	0.500
2325	0.831	0.630
1970	0.937	0.850
1530	0.994	0.984
1060	0.999	0.997
700	0.998	0.996
660	0.998	0.995
620	0.998	0.994
580	0.998	0.995
546	0.998	0.995
500	0.998	0.994
460	0.997	0.992
436	0.997	0.992
420	0.997	0.993
405	0.997	0.993
400	0.997	0.993
390	0.997	0.992
380	0.996	0.990
370	0.996	0.989
365	0.994	0.986
350	0.988	0.971
334	0.963	0.910
320	0.867	0.700
310	0.693	0.400
300	0.398	0.100
290	0.158	
280	0.040	
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2810
$P_{C,s}$	0.5382
$P_{d,C}$	0.3042
$P_{e,d}$	0.2385
$P_{g,F}$	0.5437
$P_{i,h}$	0.7695
$P'_{s,t}$	0.2787
$P'_{C',s}$	0.5817
$P'_{d,C'}$	0.2536
$P'_{e,d}$	0.2364
$P'_{g,F'}$	0.4826
$P'_{i,h}$	0.7630

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0089
$\Delta P_{C,s}$	-0.0039
$\Delta P_{F,e}$	0.0004
$\Delta P_{g,F}$	0.0004
$\Delta P_{i,g}$	-0.0027

### Other Properties

$\alpha_{-30/+70^\circ\text{C}} [10^{-6}/\text{K}]$	8.0
$\alpha_{+20/+300^\circ\text{C}} [10^{-6}/\text{K}]$	9.0
$T_g [^\circ\text{C}]$	554
$T_{10}^{13.0} [^\circ\text{C}]$	550
$T_{10}^{7.6} [^\circ\text{C}]$	727
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.920
$\rho [g/cm^3]$	2.86
$E [10^3 N/mm^2]$	71
$\mu$	0.233
$K [10^{-6} mm^2/N]$	2.60
$HK_{0.1/20}$	530
HG	2
CR	2
FR	0
SR	1
AR	1
PR	2.3

Constants of Dispersion Formula	
$B_1$	1.01662154
$B_2$	0.319903051
$B_3$	0.937232995
$C_1$	0.00592383763
$C_2$	0.0203828415
$C_3$	113.118417

Constants of Dispersion dn/dT	
$D_0$	$-1.45 \cdot 10^{-6}$
$D_1$	$1.10 \cdot 10^{-8}$
$D_2$	$4.89 \cdot 10^{-12}$
$E_0$	$5.16 \cdot 10^{-7}$
$E_1$	$3.05 \cdot 10^{-10}$
$\lambda_{TK} [\mu\text{m}]$	0.164

Color Code	
$\lambda_{80}/\lambda_5$	32/28
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/\text{K}]$			$\Delta n_{abs}/\Delta T [10^{-6}/\text{K}]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.1	1.8	2.3	-0.9	-0.3	0.2
+20/ +40	1.0	1.7	2.3	-0.3	0.3	0.9
+60/ +80	1.1	1.8	2.4	0.1	0.8	1.4

## N-BAK4 569560.305

$n_d = 1.56883$	$v_d = 55.98$	$n_F - n_C = 0.010162$
$n_e = 1.57125$	$v_e = 55.70$	$n_{F'} - n_{C'} = 0.010255$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54044
$n_{1970.1}$	1970.1	1.54561
$n_{1529.6}$	1529.6	1.55111
$n_{1060.0}$	1060.0	1.55688
$n_t$	1014.0	1.55755
$n_s$	852.1	1.56034
$n_r$	706.5	1.56400
$n_C$	656.3	1.56575
$n_{C'}$	643.8	1.56624
$n_{632.8}$	632.8	1.56670
$n_D$	589.3	1.56874
$n_d$	587.6	1.56883
$n_e$	546.1	1.57125
$n_F$	486.1	1.57591
$n_{F'}$	480.0	1.57649
$n_g$	435.8	1.58149
$n_h$	404.7	1.58614
$n_i$	365.0	1.59415
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.782	0.540
2325	0.872	0.710
1970	0.959	0.900
1530	0.993	0.982
1060	0.998	0.995
700	0.999	0.997
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.998	0.996
500	0.998	0.994
460	0.996	0.989
436	0.995	0.988
420	0.995	0.987
405	0.993	0.983
400	0.992	0.980
390	0.987	0.967
380	0.976	0.940
370	0.954	0.890
365	0.933	0.840
350	0.787	0.550
334	0.345	0.070
320	0.012	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2749
$P_{C,s}$	0.5321
$P_{d,C}$	0.3029
$P_{e,d}$	0.2383
$P_{g,F}$	0.5487
$P_{i,h}$	0.7879
$P'_{s,t}$	0.2724
$P'_{C',s}$	0.5750
$P'_{d,C'}$	0.2524
$P'_{e,d}$	0.2361
$P'_{g,F'}$	0.4869
$P'_{i,h}$	0.7807

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0034
$\Delta P_{C,s}$	-0.0013
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0010
$\Delta P_{i,g}$	-0.0087

Constants of Dispersion Formula	
$B_1$	1.28834642
$B_2$	0.132817724
$B_3$	0.945395373
$C_1$	0.00779980626
$C_2$	0.0315631177
$C_3$	105.965875

Color Code	
$\lambda_{80}/\lambda_5$	36/33
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$3.06 \cdot 10^{-6}$
$D_1$	$1.44 \cdot 10^{-8}$
$D_2$	$-2.23 \cdot 10^{-11}$
$E_0$	$5.46 \cdot 10^{-7}$
$E_1$	$6.05 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.189

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.9
$T_g [^\circ C]$	581
$T_{10}^{13.0} [^\circ C]$	569
$T_{10}^{7.6} [^\circ C]$	725
$c_p [J/(g \cdot K)]$	0.680
$\lambda [W/(m \cdot K)]$	0.880
$\rho [g/cm^3]$	3.05
$E [10^3 N/mm^2]$	77
$\mu$	0.240
$K [10^{-6} mm^2/N]$	2.90
$HK_{0.1/20}$	550
HG	2
CR	1
FR	0
SR	1.2
AR	1
PR	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.0	3.7	4.4	0.9	1.5	2.2
+20/ +40	3.1	3.9	4.7	1.8	2.6	3.3
+60/ +80	3.3	4.2	5.0	2.2	3.1	3.9

## N-BAK4HT 569560.305

$n_d = 1.56883$	$v_d = 55.98$	$n_F - n_C = 0.010162$
$n_e = 1.57125$	$v_e = 55.70$	$n_{F'} - n_{C'} = 0.010255$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54044
$n_{1970.1}$	1970.1	1.54561
$n_{1529.6}$	1529.6	1.55111
$n_{1060.0}$	1060.0	1.55688
$n_t$	1014.0	1.55755
$n_s$	852.1	1.56034
$n_r$	706.5	1.56400
$n_C$	656.3	1.56575
$n_{C'}$	643.8	1.56624
$n_{632.8}$	632.8	1.56670
$n_D$	589.3	1.56874
$n_d$	587.6	1.56883
$n_e$	546.1	1.57125
$n_F$	486.1	1.57591
$n_{F'}$	480.0	1.57649
$n_g$	435.8	1.58149
$n_h$	404.7	1.58614
$n_i$	365.0	1.59415
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.854	0.673
2325	0.920	0.811
1970	0.979	0.949
1530	0.996	0.991
1060	0.999	0.998
700	0.998	0.996
660	0.998	0.996
620	0.998	0.996
580	0.998	0.996
546	0.998	0.996
500	0.998	0.995
460	0.997	0.993
436	0.997	0.992
420	0.996	0.991
405	0.994	0.985
400	0.993	0.983
390	0.989	0.972
380	0.979	0.949
370	0.959	0.900
365	0.941	0.859
350	0.812	0.595
334	0.390	0.095
320	0.015	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2749
$P_{C,s}$	0.5321
$P_{d,C}$	0.3029
$P_{e,d}$	0.2383
$P_{g,F}$	0.5487
$P_{i,h}$	0.7879
$P'_{s,t}$	0.2724
$P'_{C',s}$	0.5750
$P'_{d,C'}$	0.2524
$P'_{e,d}$	0.2361
$P'_{g,F'}$	0.4869
$P'_{i,h}$	0.7807

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0034
$\Delta P_{C,s}$	-0.0013
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0010
$\Delta P_{i,g}$	-0.0087

Constants of Dispersion Formula	
$B_1$	1.28834642
$B_2$	0.132817724
$B_3$	0.945395373
$C_1$	0.00779980626
$C_2$	0.0315631177
$C_3$	105.965875

Constants of Dispersion $dn/dT$	
$D_0$	$3.06 \cdot 10^{-6}$
$D_1$	$1.44 \cdot 10^{-8}$
$D_2$	$-2.23 \cdot 10^{-11}$
$E_0$	$5.46 \cdot 10^{-7}$
$E_1$	$6.05 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.189

Color Code	
$\lambda_{80}/\lambda_5$	36/33
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.9
$T_g [^\circ C]$	581
$T_{10}^{13.0} [^\circ C]$	569
$T_{10}^{7.6} [^\circ C]$	725
$c_p [J/(g \cdot K)]$	0.680
$\lambda [W/(m \cdot K)]$	0.880
$\rho [g/cm^3]$	3.05
$E [10^3 N/mm^2]$	77
$\mu$	0.240
$K [10^{-6} mm^2/N]$	2.90
$HK_{0.1/20}$	550
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1.2
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.0	3.7	4.4	0.9	1.5	2.2
+20/ +40	3.1	3.9	4.7	1.8	2.6	3.3
+60/ +80	3.3	4.2	5.0	2.2	3.1	3.9

## N-BAF4 606437.289

$n_d = 1.60568$	$v_d = 43.72$	$n_F - n_C = 0.013853$
$n_e = 1.60897$	$v_e = 43.43$	$n_{F'} - n_{C'} = 0.014021$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57092
$n_{1970.1}$	1970.1	1.57685
$n_{1529.6}$	1529.6	1.58323
$n_{1060.0}$	1060.0	1.59016
$n_t$	1014.0	1.59099
$n_s$	852.1	1.59452
$n_r$	706.5	1.59926
$n_C$	656.3	1.60157
$n_{C'}$	643.8	1.60222
$n_{632.8}$	632.8	1.60282
$n_D$	589.3	1.60556
$n_d$	587.6	1.60568
$n_e$	546.1	1.60897
$n_F$	486.1	1.61542
$n_{F'}$	480.0	1.61624
$n_g$	435.8	1.62336
$n_h$	404.7	1.63022
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.707	0.420
2325	0.837	0.640
1970	0.954	0.890
1530	0.991	0.977
1060	0.998	0.994
700	0.998	0.994
660	0.996	0.991
620	0.996	0.990
580	0.997	0.992
546	0.997	0.992
500	0.994	0.985
460	0.988	0.971
436	0.983	0.959
420	0.976	0.940
405	0.959	0.900
400	0.946	0.870
390	0.901	0.770
380	0.804	0.580
370	0.601	0.280
365	0.442	0.130
350	0.012	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2545
$P_{C,s}$	0.5089
$P_{d,C}$	0.2972
$P_{e,d}$	0.2372
$P_{g,F}$	0.5733
$P_{i,h}$	
$P'_{s,t}$	0.2515
$P'_{C',s}$	0.5491
$P'_{d,C'}$	0.2473
$P'_{e,d}$	0.2344
$P'_{g,F'}$	0.5081
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0110
$\Delta P_{C,s}$	0.0041
$\Delta P_{F,e}$	0.0002
$\Delta P_{g,F}$	0.0030
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.42056328
$B_2$	0.102721269
$B_3$	1.14380976
$C_1$	0.00942015382
$C_2$	0.0531087291
$C_3$	110.278856

Color Code	
$\lambda_{80}/\lambda_5$	39/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}} [10^{-6}/\text{K}]$	7.2
$\alpha_{+20/+300^\circ\text{C}} [10^{-6}/\text{K}]$	8.3
$T_g [^\circ\text{C}]$	580
$T_{10}^{13.0} [^\circ\text{C}]$	580
$T_{10}^{7.6} [^\circ\text{C}]$	709
$c_p [\text{J}/(\text{g}\cdot\text{K})]$	0.740
$\lambda [\text{W}/(\text{m}\cdot\text{K})]$	1.020
$\rho [\text{g}/\text{cm}^3]$	2.89
$E [10^3 \text{N}/\text{mm}^2]$	85
$\mu$	0.231
$K [10^{-6} \text{mm}^2/\text{N}]$	2.58
$\text{HK}_{0.1/20}$	610
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1.2
<b>PR</b>	1.3

Constants of Dispersion $dn/dT$	
$D_0$	$9.39 \cdot 10^{-7}$
$D_1$	$1.24 \cdot 10^{-8}$
$D_2$	$-9.00 \cdot 10^{-12}$
$E_0$	$6.17 \cdot 10^{-7}$
$E_1$	$8.42 \cdot 10^{-10}$
$\lambda_{TK} [\mu\text{m}]$	0.242

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{\text{rel}}/\Delta T [10^{-6}/\text{K}]$			$\Delta n_{\text{abs}}/\Delta T [10^{-6}/\text{K}]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.2	3.1	4.1	0.1	0.9	1.9
+20/ +40	2.2	3.3	4.5	0.9	1.9	3.0
+60/ +80	2.4	3.6	4.9	1.3	2.5	3.8

## N-BAF10 670471.375

$n_d = 1.67003$	$v_d = 47.11$	$n_F - n_C = 0.014222$
$n_e = 1.67341$	$v_e = 46.83$	$n_{F'} - n_{C'} = 0.014380$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.63524
$n_{1970.1}$	1970.1	1.64094
$n_{1529.6}$	1529.6	1.64714
$n_{1060.0}$	1060.0	1.65404
$n_t$	1014.0	1.65488
$n_s$	852.1	1.65849
$n_r$	706.5	1.66339
$n_C$	656.3	1.66578
$n_{C'}$	643.8	1.66645
$n_{632.8}$	632.8	1.66708
$n_D$	589.3	1.66990
$n_d$	587.6	1.67003
$n_e$	546.1	1.67341
$n_F$	486.1	1.68000
$n_{F'}$	480.0	1.68083
$n_g$	435.8	1.68801
$n_h$	404.7	1.69480
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.727	0.450
2325	0.857	0.680
1970	0.967	0.920
1530	0.992	0.980
1060	0.998	0.994
700	0.998	0.994
660	0.996	0.990
620	0.996	0.991
580	0.996	0.990
546	0.996	0.990
500	0.992	0.981
460	0.987	0.967
436	0.981	0.954
420	0.976	0.940
405	0.959	0.900
400	0.950	0.880
390	0.915	0.800
380	0.847	0.660
370	0.720	0.440
365	0.626	0.310
350	0.176	0.010
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2539
$P_{C,s}$	0.5122
$P_{d,C}$	0.2989
$P_{e,d}$	0.2377
$P_{g,F}$	0.5629
$P_{i,h}$	
$P'_{s,t}$	0.2511
$P'_{C',s}$	0.5533
$P'_{d,C'}$	0.2489
$P'_{e,d}$	0.2351
$P'_{g,F'}$	0.4990
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0024
$\Delta P_{C,s}$	-0.0005
$\Delta P_{F,e}$	-0.0003
$\Delta P_{g,F}$	-0.0016
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.5851495
$B_2$	0.143559385
$B_3$	1.08521269
$C_1$	0.00926681282
$C_2$	0.0424489805
$C_3$	105.613573

Color Code	
$\lambda_{80}/\lambda_5$	39/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$3.79 \cdot 10^{-6}$
$D_1$	$1.28 \cdot 10^{-8}$
$D_2$	$-1.42 \cdot 10^{-11}$
$E_0$	$5.84 \cdot 10^{-7}$
$E_1$	$7.60 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.22

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.0
$T_g [^\circ C]$	660
$T_{10}^{13.0} [^\circ C]$	652
$T_{10}^{7.6} [^\circ C]$	790
$c_p [J/(g \cdot K)]$	0.560
$\lambda [W/(m \cdot K)]$	0.780
$\rho [g/cm^3]$	3.75
$E [10^3 N/mm^2]$	89
$\mu$	0.271
$K [10^{-6} mm^2/N]$	2.37
$HK_{0.1/20}$	620
<b>HG</b>	4
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	4.3
<b>AR</b>	1.3
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.7	4.7	5.6	1.5	2.4	3.3
+20/ +40	3.8	4.9	6.0	2.4	3.5	4.5
+60/ +80	4.0	5.2	6.4	2.9	4.1	5.3

## N-BAF51 652450.333

$n_d = 1.65224$	$v_d = 44.96$	$n_F - n_C = 0.014507$
$n_e = 1.65569$	$v_e = 44.67$	$n_{F'} - n_{C'} = 0.014677$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.61873
$n_{1970.1}$	1970.1	1.62390
$n_{1529.6}$	1529.6	1.62961
$n_{1060.0}$	1060.0	1.63619
$n_t$	1014.0	1.63701
$n_s$	852.1	1.64059
$n_r$	706.5	1.64551
$n_C$	656.3	1.64792
$n_{C'}$	643.8	1.64860
$n_{632.8}$	632.8	1.64924
$n_D$	589.3	1.65211
$n_d$	587.6	1.65224
$n_e$	546.1	1.65569
$n_F$	486.1	1.66243
$n_{F'}$	480.0	1.66328
$n_g$	435.8	1.67065
$n_h$	404.7	1.67766
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.746	0.480
2325	0.831	0.630
1970	0.946	0.870
1530	0.992	0.980
1060	0.997	0.993
700	0.997	0.993
660	0.996	0.990
620	0.996	0.990
580	0.997	0.992
546	0.996	0.991
500	0.994	0.985
460	0.988	0.970
436	0.982	0.956
420	0.976	0.940
405	0.963	0.910
400	0.954	0.890
390	0.924	0.820
380	0.862	0.690
370	0.739	0.470
365	0.642	0.330
350	0.209	0.020
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2463
$P_{C,s}$	0.5055
$P_{d,C}$	0.2977
$P_{e,d}$	0.2376
$P_{g,F}$	0.5670
$P_{i,h}$	
$P'_{s,t}$	0.2435
$P'_{C',s}$	0.5460
$P'_{d,C'}$	0.2479
$P'_{e,d}$	0.2349
$P'_{g,F'}$	0.5024
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0064
$\Delta P_{C,s}$	-0.0022
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0012
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.51503623
$B_2$	0.153621958
$B_3$	1.15427909
$C_1$	0.00942734715
$C_2$	0.04308265
$C_3$	124.889868

Constants of Dispersion $dn/dT$	
$D_0$	$-2.84 \cdot 10^{-7}$
$D_1$	$1.04 \cdot 10^{-8}$
$D_2$	$-1.80 \cdot 10^{-11}$
$E_0$	$7.01 \cdot 10^{-7}$
$E_1$	$8.47 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.219

Color Code	
$\lambda_{80}/\lambda_5$	39/34
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.5
$T_g [^\circ C]$	569
$T_{10}^{13.0} [^\circ C]$	574
$T_{10}^{7.6} [^\circ C]$	712
$c_p [J/(g \cdot K)]$	0.840
$\lambda [W/(m \cdot K)]$	0.670
$\rho [g/cm^3]$	3.33
$E [10^3 N/mm^2]$	91
$\mu$	0.262
$K [10^{-6} mm^2/N]$	2.22
$HK_{0.1/20}$	560
$HG$	5
$CR$	2
$FR$	0
$SR$	5.4
$AR$	1.3
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.7	2.8	3.8	-0.5	0.5	1.5
+20/ +40	1.7	2.9	4.1	0.3	1.5	2.7
+60/ +80	1.8	3.1	4.4	0.7	2.0	3.3

## N-BAF52 609466.305

$n_d = 1.60863$	$v_d = 46.60$	$n_F - n_C = 0.013061$
$n_e = 1.61173$	$v_e = 46.30$	$n_{F'} - n_{C'} = 0.013211$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57475
$n_{1970.1}$	1970.1	1.58067
$n_{1529.6}$	1529.6	1.58702
$n_{1060.0}$	1060.0	1.59381
$n_t$	1014.0	1.59461
$n_s$	852.1	1.59801
$n_r$	706.5	1.60254
$n_C$	656.3	1.60473
$n_{C'}$	643.8	1.60535
$n_{632.8}$	632.8	1.60593
$n_D$	589.3	1.60852
$n_d$	587.6	1.60863
$n_e$	546.1	1.61173
$n_F$	486.1	1.61779
$n_{F'}$	480.0	1.61856
$n_g$	435.8	1.62521
$n_h$	404.7	1.63157
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.686	0.390
2325	0.831	0.630
1970	0.954	0.890
1530	0.990	0.975
1060	0.998	0.994
700	0.997	0.993
660	0.996	0.990
620	0.996	0.989
580	0.996	0.990
546	0.996	0.989
500	0.992	0.980
460	0.987	0.967
436	0.981	0.954
420	0.975	0.938
405	0.959	0.900
400	0.950	0.880
390	0.915	0.800
380	0.842	0.650
370	0.672	0.370
365	0.536	0.210
350	0.048	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2600
$P_{C,s}$	0.5147
$P_{d,C}$	0.2985
$P_{e,d}$	0.2374
$P_{g,F}$	0.5678
$P_{i,h}$	
$P'_{s,t}$	0.2571
$P'_{C',s}$	0.5555
$P'_{d,C'}$	0.2485
$P'_{e,d}$	0.2348
$P'_{g,F'}$	0.5035
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0087
$\Delta P_{C,s}$	0.0031
$\Delta P_{F,e}$	0.0002
$\Delta P_{g,F}$	0.0024
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.43903433
$B_2$	0.0967046052
$B_3$	1.09875818
$C_1$	0.00907800128
$C_2$	0.050821208
$C_3$	105.691856

Constants of Dispersion $dn/dT$	
$D_0$	$1.15 \cdot 10^{-6}$
$D_1$	$1.27 \cdot 10^{-8}$
$D_2$	$-5.08 \cdot 10^{-12}$
$E_0$	$5.64 \cdot 10^{-7}$
$E_1$	$6.38 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.238

Color Code	
$\lambda_{80}/\lambda_5$	39/35
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.9
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.8
$T_g [^\circ C]$	594
$T_{10}^{13.0} [^\circ C]$	596
$T_{10}^{7.6} [^\circ C]$	716
$c_p [J/(g \cdot K)]$	0.680
$\lambda [W/(m \cdot K)]$	0.960
$\rho [g/cm^3]$	3.05
$E [10^3 N/mm^2]$	86
$\mu$	0.237
$K [10^{-6} mm^2/N]$	2.42
$HK_{0.1/20}$	600
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1.3
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.3	3.1	4.0	0.2	0.9	1.8
+20/ +40	2.3	3.3	4.3	0.9	1.9	2.9
+60/ +80	2.5	3.6	4.7	1.4	2.5	3.6



## N-BALF4 580539.311

$n_d = 1.57956$	$v_d = 53.87$	$n_F - n_C = 0.010759$
$n_e = 1.58212$	$v_e = 53.59$	$n_{F'} - n_{C'} = 0.010863$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55068
$n_{1970.1}$	1970.1	1.55577
$n_{1529.6}$	1529.6	1.56124
$n_{1060.0}$	1060.0	1.56707
$n_t$	1014.0	1.56776
$n_s$	852.1	1.57065
$n_r$	706.5	1.57447
$n_C$	656.3	1.57631
$n_{C'}$	643.8	1.57683
$n_{632.8}$	632.8	1.57731
$n_D$	589.3	1.57946
$n_d$	587.6	1.57956
$n_e$	546.1	1.58212
$n_F$	486.1	1.58707
$n_{F'}$	480.0	1.58769
$n_g$	435.8	1.59301
$n_h$	404.7	1.59799
$n_i$	365.0	1.60658
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.804	0.580
2325	0.887	0.740
1970	0.967	0.920
1530	0.994	0.984
1060	0.997	0.993
700	0.999	0.997
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.998	0.995
500	0.997	0.993
460	0.994	0.986
436	0.993	0.983
420	0.992	0.981
405	0.988	0.970
400	0.985	0.964
390	0.976	0.940
380	0.959	0.900
370	0.924	0.820
365	0.891	0.750
350	0.679	0.380
334	0.158	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2687
$P_{C,s}$	0.5265
$P_{d,C}$	0.3019
$P_{e,d}$	0.2382
$P_{g,F}$	0.5520
$P_{i,h}$	0.7986
$P'_{s,t}$	0.2661
$P'_{C',s}$	0.5689
$P'_{d,C'}$	0.2515
$P'_{e,d}$	0.2359
$P'_{g,F'}$	0.4897
$P'_{i,h}$	0.7909

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0053
$\Delta P_{C,s}$	-0.0019
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0012
$\Delta P_{i,g}$	-0.0114

Constants of Dispersion Formula	
$B_1$	1.31004128
$B_2$	0.142038259
$B_3$	0.964929351
$C_1$	0.0079659645
$C_2$	0.0330672072
$C_3$	109.19732

Constants of Dispersion $dn/dT$	
$D_0$	$5.33 \cdot 10^{-6}$
$D_1$	$1.47 \cdot 10^{-8}$
$D_2$	$-1.58 \cdot 10^{-11}$
$E_0$	$5.75 \cdot 10^{-7}$
$E_1$	$6.58 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.195

Color Code	
$\lambda_{80}/\lambda_5$	37/33
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	578
$T_{10}^{13.0} [^\circ C]$	584
$T_{10}^{7.6} [^\circ C]$	661
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.850
$\rho [g/cm^3]$	3.11
$E [10^3 N/mm^2]$	77
$\mu$	0.245
$K [10^{-6} mm^2/N]$	3.01
$HK_{0.1/20}$	540
HG	2
CR	1
FR	0
SR	1
AR	1
PR	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.1	4.9	5.6	2.0	2.7	3.4
+20/ +40	4.2	5.1	6.0	2.9	3.7	4.6
+60/ +80	4.4	5.4	6.4	3.4	4.3	5.3

**N-BALF5**  
**547536.261**

$n_d = 1.54739$	$v_d = 53.63$	$n_F - n_C = 0.010207$
$n_e = 1.54982$	$v_e = 53.36$	$n_{F'} - n_{C'} = 0.010303$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	
$n_{1970.1}$	1970.1	
$n_{1529.6}$	1529.6	
$n_{1060.0}$	1060.0	1.53529
$n_t$	1014.0	1.53598
$n_s$	852.1	1.53885
$n_r$	706.5	1.54255
$n_C$	656.3	1.54430
$n_{C'}$	643.8	1.54479
$n_{632.8}$	632.8	1.54525
$n_D$	589.3	1.54730
$n_d$	587.6	1.54739
$n_e$	546.1	1.54982
$n_F$	486.1	1.55451
$n_{F'}$	480.0	1.55510
$n_g$	435.8	1.56016
$n_h$	404.7	1.56491
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.28385965
$B_2$	0.0719300942
$B_3$	1.05048927
$C_1$	0.00825815975
$C_2$	0.0441920027
$C_3$	107.097324

Constants of Dispersion $dn/dT$	
$D_0$	$1.14 \cdot 10^{-6}$
$D_1$	$1.29 \cdot 10^{-8}$
$D_2$	$-1.46 \cdot 10^{-11}$
$E_0$	$5.02 \cdot 10^{-7}$
$E_1$	$5.87 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.219

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	2.1	2.8	3.5	0.1	0.7	1.3
+20/ +40	2.1	2.9	3.7	0.8	1.6	2.3
+60/ +80	2.3	3.1	3.9	1.3	2.1	2.9

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.618	0.300
2325	0.758	0.500
1970	0.919	0.810
1530	0.989	0.973
1060	0.996	0.991
700	0.998	0.995
660	0.997	0.993
620	0.997	0.993
580	0.998	0.995
546	0.998	0.995
500	0.997	0.992
460	0.995	0.988
436	0.994	0.984
420	0.991	0.978
405	0.986	0.965
400	0.983	0.957
390	0.967	0.920
380	0.937	0.850
370	0.872	0.710
365	0.815	0.600
350	0.439	0.128
334	0.006	
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80}/\lambda_5$	37/34
(* = $\lambda_{70}/\lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2810
$P_{C,s}$	0.5345
$P_{d,C}$	0.3025
$P_{e,d}$	0.2380
$P_{g,F}$	0.5532
$P_{i,h}$	
$P'_{s,t}$	0.2783
$P'_{C',s}$	0.5771
$P'_{d,C'}$	0.2520
$P'_{e,d}$	0.2357
$P'_{g,F'}$	0.4909
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0161
$\Delta P_{C,s}$	0.0066
$\Delta P_{F,e}$	-0.0007
$\Delta P_{g,F}$	-0.0004
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.4
$T_g$ [°C]	558
$T_{10}^{13.0}$ [°C]	559
$T_{10}^{7.6}$ [°C]	711
$c_p$ [J/(g·K)]	0.810
$\lambda$ [W/(m·K)]	1.050
$\rho$ [g/cm <sup>3</sup> ]	2.61
$E$ [ $10^3$ N/mm <sup>2</sup> ]	81
$\mu$	0.214
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.76
$HK_{0.1/20}$	600
HG	2
CR	1
FR	0
SR	1
AR	2
PR	1

## N-SK2 607567.355

$n_d = 1.60738$	$v_d = 56.65$	$n_F - n_C = 0.010722$
$n_e = 1.60994$	$v_e = 56.37$	$n_{F'} - n_{C'} = 0.010821$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57881
$n_{1970.1}$	1970.1	1.58378
$n_{1529.6}$	1529.6	1.58914
$n_{1060.0}$	1060.0	1.59490
$n_t$	1014.0	1.59558
$n_s$	852.1	1.59847
$n_r$	706.5	1.60230
$n_C$	656.3	1.60414
$n_{C'}$	643.8	1.60465
$n_{632.8}$	632.8	1.60513
$n_D$	589.3	1.60729
$n_d$	587.6	1.60738
$n_e$	546.1	1.60994
$n_F$	486.1	1.61486
$n_{F'}$	480.0	1.61547
$n_g$	435.8	1.62073
$n_h$	404.7	1.62562
$n_i$	365.0	1.63398
$n_{334.1}$	334.1	1.64304
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.815	0.600
2325	0.896	0.760
1970	0.971	0.930
1530	0.995	0.988
1060	0.998	0.995
700	0.998	0.995
660	0.998	0.994
620	0.998	0.994
580	0.998	0.995
546	0.998	0.995
500	0.996	0.990
460	0.993	0.983
436	0.993	0.982
420	0.994	0.984
405	0.994	0.985
400	0.994	0.984
390	0.992	0.979
380	0.988	0.970
370	0.976	0.940
365	0.967	0.920
350	0.905	0.780
334	0.752	0.490
320	0.504	0.180
310	0.276	0.040
300	0.102	
290	0.020	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2690
$P_{C,s}$	0.5285
$P_{d,C}$	0.3027
$P_{e,d}$	0.2384
$P_{g,F}$	0.5477
$P_{i,h}$	0.7802
$P'_{s,t}$	0.2666
$P'_{C',s}$	0.5713
$P'_{d,C'}$	0.2523
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4860
$P'_{i,h}$	0.7730

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0162
$\Delta P_{C,s}$	-0.0064
$\Delta P_{F,e}$	0.0003
$\Delta P_{g,F}$	-0.0008
$\Delta P_{i,g}$	-0.0130

Constants of Dispersion Formula	
$B_1$	1.28189012
$B_2$	0.257738258
$B_3$	0.96818604
$C_1$	0.0072719164
$C_2$	0.0242823527
$C_3$	110.377773

Constants of Dispersion $dn/dT$	
$D_0$	$3.80 \cdot 10^{-6}$
$D_1$	$1.41 \cdot 10^{-8}$
$D_2$	$2.28 \cdot 10^{-11}$
$E_0$	$6.44 \cdot 10^{-7}$
$E_1$	$8.03 \cdot 10^{-11}$
$\lambda_{TK}$ [μm]	0.108

Color Code	
$\lambda_{80}/\lambda_5$	33/28
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	6.0
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	7.1
$T_g$ [°C]	659
$T_{10}^{13.0}$ [°C]	659
$T_{10}^{7.6}$ [°C]	823
$c_p$ [J/(g·K)]	0.595
$\lambda$ [W/(m·K)]	0.776
$\rho$ [g/cm <sup>3</sup> ]	3.55
$E$ [ $10^3$ N/mm <sup>2</sup> ]	78
$\mu$	0.263
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.31
$HK_{0.1/20}$	550
<b>HG</b>	2
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	2.2
<b>AR</b>	1
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.7	4.6	5.3	1.5	2.4	3.1
+20/ +40	3.6	4.5	5.3	2.3	3.1	3.9
+60/ +80	4.0	4.9	5.7	2.9	3.8	4.5

## N-SK2HT 607567.355

$n_d = 1.60738$	$v_d = 56.65$	$n_F - n_C = 0.010722$
$n_e = 1.60994$	$v_e = 56.37$	$n_{F'} - n_{C'} = 0.010821$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57881
$n_{1970.1}$	1970.1	1.58378
$n_{1529.6}$	1529.6	1.58914
$n_{1060.0}$	1060.0	1.59490
$n_t$	1014.0	1.59558
$n_s$	852.1	1.59847
$n_r$	706.5	1.60230
$n_C$	656.3	1.60414
$n_{C'}$	643.8	1.60465
$n_{632.8}$	632.8	1.60513
$n_D$	589.3	1.60729
$n_d$	587.6	1.60738
$n_e$	546.1	1.60994
$n_F$	486.1	1.61486
$n_{F'}$	480.0	1.61547
$n_g$	435.8	1.62073
$n_h$	404.7	1.62562
$n_i$	365.0	1.63398
$n_{334.1}$	334.1	1.64304
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.807	0.585
2325	0.890	0.748
1970	0.971	0.930
1530	0.995	0.987
1060	0.998	0.996
700	0.999	0.997
660	0.998	0.996
620	0.998	0.996
580	0.999	0.997
546	0.999	0.997
500	0.998	0.995
460	0.997	0.992
436	0.996	0.991
420	0.997	0.992
405	0.996	0.991
400	0.996	0.990
390	0.994	0.986
380	0.992	0.980
370	0.987	0.968
365	0.983	0.957
350	0.955	0.892
334	0.869	0.703
320	0.654	0.346
310	0.385	0.092
300	0.130	
290	0.010	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2690
$P_{C,s}$	0.5285
$P_{d,C}$	0.3027
$P_{e,d}$	0.2384
$P_{g,F}$	0.5477
$P_{i,h}$	0.7802
$P'_{s,t}$	0.2666
$P'_{C',s}$	0.5713
$P'_{d,C'}$	0.2523
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4860
$P'_{i,h}$	0.7730

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0162
$\Delta P_{C,s}$	-0.0064
$\Delta P_{F,e}$	0.0003
$\Delta P_{g,F}$	-0.0008
$\Delta P_{i,g}$	-0.0130

Constants of Dispersion Formula	
$B_1$	1.28189012
$B_2$	0.257738258
$B_3$	0.96818604
$C_1$	0.0072719164
$C_2$	0.0242823527
$C_3$	110.377773

Constants of Dispersion $dn/dT$	
$D_0$	$3.80 \cdot 10^{-6}$
$D_1$	$1.41 \cdot 10^{-8}$
$D_2$	$2.28 \cdot 10^{-11}$
$E_0$	$6.44 \cdot 10^{-7}$
$E_1$	$8.03 \cdot 10^{-11}$
$\lambda_{TK} [\mu m]$	0.108

Color Code	
$\lambda_{80}/\lambda_5$	33/28
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.1
$T_g [^\circ C]$	659
$T_{10}^{13.0} [^\circ C]$	659
$T_{10}^{7.6} [^\circ C]$	823
$c_p [J/(g \cdot K)]$	0.595
$\lambda [W/(m \cdot K)]$	0.776
$\rho [g/cm^3]$	3.55
$E [10^3 N/mm^2]$	78
$\mu$	0.263
$K [10^{-6} mm^2/N]$	2.31
$HK_{0.1/20}$	550
<b>HG</b>	2
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	2.2
<b>AR</b>	1
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.7	4.6	5.3	1.5	2.4	3.1
+20/ +40	3.6	4.5	5.3	2.3	3.1	3.9
+60/ +80	4.0	4.9	5.7	2.9	3.8	4.5

## N-SK4 613586.354

$n_d = 1.61272$	$v_d = 58.63$	$n_F - n_C = 0.010450$
$n_e = 1.61521$	$v_e = 58.37$	$n_{F'} - n_{C'} = 0.010541$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58282
$n_{1970.1}$	1970.1	1.58835
$n_{1529.6}$	1529.6	1.59422
$n_{1060.0}$	1060.0	1.60032
$n_t$	1014.0	1.60102
$n_s$	852.1	1.60393
$n_r$	706.5	1.60774
$n_C$	656.3	1.60954
$n_{C'}$	643.8	1.61005
$n_{632.8}$	632.8	1.61052
$n_D$	589.3	1.61262
$n_d$	587.6	1.61272
$n_e$	546.1	1.61521
$n_F$	486.1	1.61999
$n_{F'}$	480.0	1.62059
$n_g$	435.8	1.62568
$n_h$	404.7	1.63042
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.686	0.390
2325	0.826	0.620
1970	0.959	0.900
1530	0.991	0.977
1060	0.997	0.993
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.997	0.992
460	0.994	0.985
436	0.993	0.983
420	0.993	0.983
405	0.992	0.979
400	0.990	0.975
390	0.984	0.960
380	0.971	0.930
370	0.946	0.870
365	0.928	0.830
350	0.821	0.610
334	0.525	0.200
320	0.102	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2792
$P_{C,s}$	0.5366
$P_{d,C}$	0.3039
$P_{e,d}$	0.2384
$P_{g,F}$	0.5448
$P_{i,h}$	
$P'_{s,t}$	0.2768
$P'_{C',s}$	0.5799
$P'_{d,C'}$	0.2533
$P'_{e,d}$	0.2364
$P'_{g,F'}$	0.4835
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0073
$\Delta P_{C,s}$	-0.0030
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	-0.0004
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.32993741
$B_2$	0.228542996
$B_3$	0.988465211
$C_1$	0.00716874107
$C_2$	0.0246455892
$C_3$	100.886364

Constants of Dispersion $dn/dT$	
$D_0$	$7.96 \cdot 10^{-7}$
$D_1$	$1.30 \cdot 10^{-8}$
$D_2$	$-1.31 \cdot 10^{-11}$
$E_0$	$4.36 \cdot 10^{-7}$
$E_1$	$6.01 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.179

Color Code	
$\lambda_{80}/\lambda_5$	36/32
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	658
$T_{10}^{13.0} [^\circ C]$	646
$T_{10}^{7.6} [^\circ C]$	769
$c_p [J/(g \cdot K)]$	0.570
$\lambda [W/(m \cdot K)]$	0.830
$\rho [g/cm^3]$	3.54
$E [10^3 N/mm^2]$	84
$\mu$	0.261
$K [10^{-6} mm^2/N]$	1.92
$HK_{0.1/20}$	580
$HG$	3
$CR$	3
$FR$	1
$SR$	51.2
$AR$	2
$PR$	2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.0	2.6	3.1	-0.1	0.4	0.9
+20/ +40	2.1	2.8	3.4	0.7	1.4	2.0
+60/ +80	2.3	3.0	3.7	1.2	1.9	2.6

N-SK5  
589613.330 $n_d = 1.58913$  $v_d = 61.27$  $n_F - n_C = 0.009616$  $n_e = 1.59142$  $v_e = 61.02$  $n_{F'} - n_{C'} = 0.009692$ 

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55966
$n_{1970.1}$	1970.1	1.56539
$n_{1529.6}$	1529.6	1.57140
$n_{1060.0}$	1060.0	1.57747
$n_t$	1014.0	1.57815
$n_s$	852.1	1.58094
$n_r$	706.5	1.58451
$n_C$	656.3	1.58619
$n_{C'}$	643.8	1.58666
$n_{632.8}$	632.8	1.58710
$n_D$	589.3	1.58904
$n_d$	587.6	1.58913
$n_e$	546.1	1.59142
$n_F$	486.1	1.59581
$n_{F'}$	480.0	1.59635
$n_g$	435.8	1.60100
$n_h$	404.7	1.60530
$n_i$	365.0	1.61260
$n_{334.1}$	334.1	1.62043
$n_{312.6}$	312.6	1.62759
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	0.991463823
$B_2$	0.495982121
$B_3$	0.987393925
$C_1$	0.00522730467
$C_2$	0.0172733646
$C_3$	98.3594579

Constants of Dispersion $dn/dT$	
$D_0$	$3.50 \cdot 10^{-6}$
$D_1$	$1.22 \cdot 10^{-8}$
$D_2$	$6.38 \cdot 10^{-11}$
$E_0$	$2.46 \cdot 10^{-7}$
$E_1$	$-3.34 \cdot 10^{-11}$
$\lambda_{TK}$ [μm]	0.278

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.5	4.0	4.6	1.4	1.9	2.4
+20/ +40	3.2	3.7	4.3	1.9	2.3	2.9
+60/ +80	3.6	4.1	4.7	2.6	3.0	3.6

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.680	0.380
2325	0.840	0.640
1970	0.963	0.910
1530	0.992	0.980
1060	0.999	0.997
700	0.998	0.995
660	0.998	0.994
620	0.997	0.993
580	0.998	0.995
546	0.998	0.996
500	0.998	0.994
460	0.996	0.989
436	0.995	0.987
420	0.994	0.986
405	0.993	0.983
400	0.992	0.981
390	0.988	0.971
380	0.984	0.960
370	0.976	0.940
365	0.971	0.930
350	0.920	0.820
334	0.800	0.580
320	0.590	0.270
310	0.400	0.100
300	0.210	0.020
290	0.090	
280	0.030	
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	34/29
(* = $\lambda_{70} / \lambda_5$ )	

Remarks	

Relative Partial Dispersion	
$P_{s,t}$	0.2904
$P_{C,s}$	0.5460
$P_{d,C}$	0.3055
$P_{e,d}$	0.2386
$P_{g,F}$	0.5400
$P_{i,h}$	0.7591
$P'_{s,t}$	0.2881
$P'_{C,s}$	0.5901
$P'_{d,C}$	0.2547
$P'_{e,d}$	0.2367
$P'_{g,F}$	0.4796
$P'_{i,h}$	0.7531

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0008
$\Delta P_{C,s}$	0.0003
$\Delta P_{F,e}$	-0.0002
$\Delta P_{g,F}$	-0.0007
$\Delta P_{i,g}$	-0.0045

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6} / K]$	5.5
$\alpha_{+20/+300^\circ C} [10^{-6} / K]$	6.5
$T_g$ [°C]	660
$T_{10}^{13.0}$ [°C]	657
$T_{10}^{7.6}$ [°C]	791
$c_p$ [J/(g·K)]	0.560
$\lambda$ [W/(m·K)]	0.990
$\rho$ [g/cm <sup>3</sup> ]	3.30
$E$ [ $10^3$ N/mm <sup>2</sup> ]	84
$\mu$	0.256
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.16
$HK_{0.1/20}$	590
HG	3
CR	3
FR	1
SR	4.4
AR	2
PR	1.3

## N-SK11 564608.308

$n_d = 1.56384$	$v_d = 60.80$	$n_F - n_C = 0.009274$
$n_e = 1.56605$	$v_e = 60.55$	$n_{F'} - n_{C'} = 0.009349$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.53598
$n_{1970.1}$	1970.1	1.54131
$n_{1529.6}$	1529.6	1.54693
$n_{1060.0}$	1060.0	1.55266
$n_t$	1014.0	1.55330
$n_s$	852.1	1.55597
$n_r$	706.5	1.55939
$n_C$	656.3	1.56101
$n_{C'}$	643.8	1.56146
$n_{632.8}$	632.8	1.56188
$n_D$	589.3	1.56376
$n_d$	587.6	1.56384
$n_e$	546.1	1.56605
$n_F$	486.1	1.57028
$n_{F'}$	480.0	1.57081
$n_g$	435.8	1.57530
$n_h$	404.7	1.57946
$n_i$	365.0	1.58653
$n_{334.1}$	334.1	1.59414
$n_{312.6}$	312.6	1.60110
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.782	0.540
2325	0.882	0.730
1970	0.967	0.920
1530	0.994	0.984
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.999	0.997
500	0.998	0.994
460	0.996	0.990
436	0.995	0.988
420	0.994	0.985
405	0.992	0.980
400	0.990	0.975
390	0.988	0.970
380	0.985	0.963
370	0.980	0.950
365	0.976	0.940
350	0.950	0.880
334	0.872	0.710
320	0.700	0.410
310	0.480	0.160
300	0.212	0.020
290	0.058	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2874
$P_{C,s}$	0.5436
$P_{d,C}$	0.3051
$P_{e,d}$	0.2385
$P_{g,F}$	0.5411
$P_{i,h}$	0.7626
$P'_{s,t}$	0.2850
$P'_{C',s}$	0.5875
$P'_{d,C'}$	0.2544
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4805
$P'_{i,h}$	0.7564

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0024
$\Delta P_{C,s}$	-0.0011
$\Delta P_{F,e}$	0.0000
$\Delta P_{g,F}$	-0.0004
$\Delta P_{i,g}$	-0.0037

Constants of Dispersion Formula	
$B_1$	1.17963631
$B_2$	0.229817295
$B_3$	0.935789652
$C_1$	0.00680282081
$C_2$	0.0219737205
$C_3$	101.513232

Constants of Dispersion $dn/dT$	
$D_0$	$2.14 \cdot 10^{-6}$
$D_1$	$1.27 \cdot 10^{-8}$
$D_2$	$-7.21 \cdot 10^{-11}$
$E_0$	$3.51 \cdot 10^{-7}$
$E_1$	$5.41 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.238

Color Code	
$\lambda_{80}/\lambda_5$	34/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.6
$T_g [^\circ C]$	610
$T_{10}^{13.0} [^\circ C]$	601
$T_{10}^{7.6} [^\circ C]$	760
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.08
$E [10^3 N/mm^2]$	79
$\mu$	0.239
$K [10^{-6} mm^2/N]$	2.45
$HK_{0.1/20}$	570
<b>HG</b>	2
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	1
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	2.8	3.4	0.3	0.7	1.2
+20/ +40	2.6	3.2	3.8	1.2	1.8	2.4
+60/ +80	2.5	3.2	3.9	1.5	2.1	2.8



## N-SK14 603606.344

$n_d = 1.60311$	$v_d = 60.60$	$n_F - n_C = 0.009953$
$n_e = 1.60548$	$v_e = 60.34$	$n_{F'} - n_{C'} = 0.010034$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57336
$n_{1970.1}$	1970.1	1.57903
$n_{1529.6}$	1529.6	1.58502
$n_{1060.0}$	1060.0	1.59113
$n_t$	1014.0	1.59182
$n_s$	852.1	1.59467
$n_r$	706.5	1.59834
$n_C$	656.3	1.60008
$n_{C'}$	643.8	1.60056
$n_{632.8}$	632.8	1.60101
$n_D$	589.3	1.60302
$n_d$	587.6	1.60311
$n_e$	546.1	1.60548
$n_F$	486.1	1.61003
$n_{F'}$	480.0	1.61059
$n_g$	435.8	1.61542
$n_h$	404.7	1.61988
$n_i$	365.0	1.62748
$n_{334.1}$	334.1	1.63564
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.679	0.380
2325	0.831	0.630
1970	0.959	0.900
1530	0.992	0.980
1060	0.998	0.994
700	0.998	0.995
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.997	0.993
460	0.995	0.988
436	0.994	0.985
420	0.993	0.983
405	0.991	0.978
400	0.990	0.975
390	0.988	0.970
380	0.981	0.952
370	0.971	0.930
365	0.963	0.910
350	0.910	0.790
334	0.770	0.520
320	0.546	0.220
310	0.345	0.070
300	0.160	
290	0.040	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2864
$P_{C,s}$	0.5427
$P_{d,C}$	0.3049
$P_{e,d}$	0.2385
$P_{g,F}$	0.5415
$P_{i,h}$	0.7631
$P'_{s,t}$	0.2841
$P'_{C',s}$	0.5865
$P'_{d,C'}$	0.2542
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4808
$P'_{i,h}$	0.7569

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0033
$\Delta P_{C,s}$	-0.0015
$\Delta P_{F,e}$	0.0000
$\Delta P_{g,F}$	-0.0003
$\Delta P_{i,g}$	-0.0044

Constants of Dispersion Formula	
$B_1$	0.936155374
$B_2$	0.594052018
$B_3$	1.04374583
$C_1$	0.00461716525
$C_2$	0.016885927
$C_3$	103.736265

Constants of Dispersion $dn/dT$	
$D_0$	$1.58 \cdot 10^{-6}$
$D_1$	$1.22 \cdot 10^{-8}$
$D_2$	$-8.04 \cdot 10^{-12}$
$E_0$	$4.46 \cdot 10^{-7}$
$E_1$	$5.22 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.15

Color Code	
$\lambda_{80}/\lambda_5$	35/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.3
$T_g [^\circ C]$	649
$T_{10}^{13.0} [^\circ C]$	638
$T_{10}^{7.6} [^\circ C]$	773
$c_p [J/(g \cdot K)]$	0.636
$\lambda [W/(m \cdot K)]$	0.851
$\rho [g/cm^3]$	3.44
$E [10^3 N/mm^2]$	86
$\mu$	0.261
$K [10^{-6} mm^2/N]$	2.00
$HK_{0.1/20}$	600
<b>HG</b>	3
<b>CR</b>	4
<b>FR</b>	2
<b>SR</b>	51.3
<b>AR</b>	2
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.5	3.0	3.5	0.3	0.8	1.3
+20/ +40	2.4	3.1	3.7	1.1	1.7	2.3
+60/ +80	2.6	3.3	4.0	1.5	2.2	2.8

## N-SK16 620603.358

$n_d = 1.62041$	$v_d = 60.32$	$n_F - n_C = 0.010285$
$n_e = 1.62286$	$v_e = 60.08$	$n_{F'} - n_{C'} = 0.010368$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58919
$n_{1970.1}$	1970.1	1.59523
$n_{1529.6}$	1529.6	1.60157
$n_{1060.0}$	1060.0	1.60799
$n_t$	1014.0	1.60871
$n_s$	852.1	1.61167
$n_r$	706.5	1.61548
$n_C$	656.3	1.61727
$n_{C'}$	643.8	1.61777
$n_{632.8}$	632.8	1.61824
$n_D$	589.3	1.62032
$n_d$	587.6	1.62041
$n_e$	546.1	1.62286
$n_F$	486.1	1.62756
$n_{F'}$	480.0	1.62814
$n_g$	435.8	1.63312
$n_h$	404.7	1.63773
$n_i$	365.0	1.64559
$n_{334.1}$	334.1	1.65403
$n_{312.6}$	312.6	1.66178
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.583	0.260
2325	0.782	0.540
1970	0.950	0.880
1530	0.989	0.973
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.994
620	0.997	0.993
580	0.998	0.994
546	0.998	0.994
500	0.996	0.991
460	0.994	0.984
436	0.992	0.981
420	0.992	0.979
405	0.990	0.974
400	0.988	0.970
390	0.982	0.956
380	0.971	0.930
370	0.954	0.890
365	0.941	0.860
350	0.867	0.700
334	0.693	0.400
320	0.414	0.110
310	0.209	0.020
300	0.063	
290	0.010	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2885
$P_{C,s}$	0.5443
$P_{d,C}$	0.3051
$P_{e,d}$	0.2385
$P_{g,F}$	0.5412
$P_{i,h}$	0.7633
$P'_{s,t}$	0.2861
$P'_{C',s}$	0.5882
$P'_{d,C'}$	0.2544
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4805
$P'_{i,h}$	0.7572

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0016
$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0003
$\Delta P_{g,F}$	-0.0011
$\Delta P_{i,g}$	-0.0067

Constants of Dispersion Formula	
$B_1$	1.34317774
$B_2$	0.241144399
$B_3$	0.994317969
$C_1$	0.00704687339
$C_2$	0.0229005
$C_3$	92.7508526

Constants of Dispersion $dn/dT$	
$D_0$	$-2.37 \cdot 10^{-8}$
$D_1$	$1.32 \cdot 10^{-8}$
$D_2$	$-1.29 \cdot 10^{-11}$
$E_0$	$4.09 \cdot 10^{-7}$
$E_1$	$5.17 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.17

Color Code	
$\lambda_{80}/\lambda_5$	36/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.3
$T_g [^\circ C]$	636
$T_{10}^{13.0} [^\circ C]$	633
$T_{10}^{7.6} [^\circ C]$	750
$c_p [J/(g \cdot K)]$	0.578
$\lambda [W/(m \cdot K)]$	0.818
$\rho [g/cm^3]$	3.58
$E [10^3 N/mm^2]$	89
$\mu$	0.264
$K [10^{-6} mm^2/N]$	1.90
$HK_{0.1/20}$	600
<b>HG</b>	4
<b>CR</b>	4
<b>FR</b>	4
<b>SR</b>	53.3
<b>AR</b>	3.3
<b>PR</b>	3.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.6	2.2	2.6	-0.5	-0.1	0.4
+20/ +40	1.7	2.3	2.9	0.3	0.9	1.4
+60/ +80	1.9	2.6	3.2	0.8	1.5	2.1

## P-SK57 587596.301

$n_d = 1.58700$	$v_d = 59.60$	$n_F - n_C = 0.009849$
$n_e = 1.58935$	$v_e = 59.36$	$n_{F'} - n_{C'} = 0.009928$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55688
$n_{1970.1}$	1970.1	1.56271
$n_{1529.6}$	1529.6	1.56885
$n_{1060.0}$	1060.0	1.57507
$n_t$	1014.0	1.57576
$n_s$	852.1	1.57862
$n_r$	706.5	1.58227
$n_C$	656.3	1.58399
$n_{C'}$	643.8	1.58447
$n_{632.8}$	632.8	1.58492
$n_D$	589.3	1.58691
$n_d$	587.6	1.58700
$n_e$	546.1	1.58935
$n_F$	486.1	1.59384
$n_{F'}$	480.0	1.59440
$n_g$	435.8	1.59917
$n_h$	404.7	1.60359
$n_i$	365.0	1.61112
$n_{334.1}$	334.1	1.61923
$n_{312.6}$	312.6	1.62669
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.693	0.400
2325	0.831	0.630
1970	0.954	0.890
1530	0.991	0.978
1060	0.999	0.997
700	0.999	0.997
660	0.999	0.997
620	0.999	0.997
580	0.999	0.997
546	0.999	0.997
500	0.998	0.995
460	0.996	0.991
436	0.996	0.989
420	0.995	0.987
405	0.994	0.985
400	0.994	0.984
390	0.992	0.980
380	0.989	0.973
370	0.984	0.960
365	0.980	0.950
350	0.946	0.870
334	0.821	0.610
320	0.480	0.160
310	0.123	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2902
$P_{C,s}$	0.5454
$P_{d,C}$	0.3053
$P_{e,d}$	0.2385
$P_{g,F}$	0.5412
$P_{i,h}$	0.7644
$P'_{s,t}$	0.2878
$P'_{C',s}$	0.5894
$P'_{d,C'}$	0.2545
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4806
$P'_{i,h}$	0.7583

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0079
$\Delta P_{C,s}$	0.0036
$\Delta P_{F,e}$	-0.0008
$\Delta P_{g,F}$	-0.0024
$\Delta P_{i,g}$	-0.0115

Constants of Dispersion Formula	
$B_1$	1.31053414
$B_2$	0.169376189
$B_3$	1.10987714
$C_1$	0.00740877235
$C_2$	0.0254563489
$C_3$	107.751087

Constants of Dispersion $dn/dT$	
$D_0$	$2.60 \cdot 10^{-6}$
$D_1$	$9.40 \cdot 10^{-9}$
$D_2$	$-2.30 \cdot 10^{-11}$
$E_0$	$4.90 \cdot 10^{-7}$
$E_1$	$5.96 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.178

Color Code	
$\lambda_{80}/\lambda_5$	34/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.9
$T_g [^\circ C]$	493
$T_{10}^{13.0} [^\circ C]$	494
$T_{10}^{7.6} [^\circ C]$	593
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	1.010
$AT [^\circ C]$	522
$\rho [g/cm^3]$	3.01
$E [10^3 N/mm^2]$	93
$\mu$	0.249
$K [10^{-6} mm^2/N]$	2.17
$HK_{0.1/20}$	535
<b>HG</b>	3
<b>Abrasion Aa</b>	124
<b>CR</b>	4
<b>FR</b>	3
<b>SR</b>	52.3
<b>AR</b>	2
<b>PR</b>	3
<b>SR-J</b>	4
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.0	3.7	4.2	0.9	1.5	2.0
+20/ +40	2.9	3.6	4.3	1.5	2.2	2.9
+60/ +80	2.9	3.7	4.4	1.8	2.6	3.3

## P-SK57Q1 586595.301

$n_d = 1.58600$	$v_d = 59.50$	$n_F - n_C = 0.009849$
$n_e = 1.58835$	$v_e = 59.26$	$n_{F'} - n_{C'} = 0.009928$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55583
$n_{1970.1}$	1970.1	1.56169
$n_{1529.6}$	1529.6	1.56784
$n_{1060.0}$	1060.0	1.57407
$n_t$	1014.0	1.57476
$n_s$	852.1	1.57762
$n_r$	706.5	1.58127
$n_C$	656.3	1.58299
$n_{C'}$	643.8	1.58347
$n_{632.8}$	632.8	1.58392
$n_D$	589.3	1.58591
$n_d$	587.6	1.58600
$n_e$	546.1	1.58835
$n_F$	486.1	1.59284
$n_{F'}$	480.0	1.59340
$n_g$	435.8	1.59817
$n_h$	404.7	1.60260
$n_i$	365.0	1.61013
$n_{334.1}$	334.1	1.61826
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.693	0.400
2325	0.831	0.630
1970	0.954	0.890
1530	0.991	0.978
1060	0.999	0.997
700	0.999	0.997
660	0.999	0.997
620	0.999	0.997
580	0.999	0.997
546	0.999	0.997
500	0.998	0.995
460	0.996	0.991
436	0.996	0.989
420	0.995	0.987
405	0.994	0.985
400	0.994	0.984
390	0.992	0.980
380	0.989	0.973
370	0.984	0.960
365	0.980	0.950
350	0.946	0.870
334	0.821	0.610
320	0.480	0.160
310	0.123	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2903
$P_{C,s}$	0.5454
$P_{d,C}$	0.3052
$P_{e,d}$	0.2385
$P_{g,F}$	0.5414
$P_{i,h}$	0.7652
$P'_{s,t}$	0.2880
$P'_{C',s}$	0.5894
$P'_{d,C'}$	0.2545
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4807
$P'_{i,h}$	0.7590

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0085
$\Delta P_{C,s}$	0.0038
$\Delta P_{F,e}$	-0.0008
$\Delta P_{g,F}$	-0.0024
$\Delta P_{i,g}$	-0.0113

Constants of Dispersion Formula	
$B_1$	1.30536483
$B_2$	0.171434328
$B_3$	1.10117219
$C_1$	0.00736408831
$C_2$	0.0255786047
$C_3$	106.72606

Color Code	
$\lambda_{80}/\lambda_5$	34/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Constants of Dispersion $dn/dT$	
$D_0$	
$D_1$	
$D_2$	
$E_0$	
$E_1$	
$\lambda_{TK}$ [ $\mu\text{m}$ ]	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	7.2
$\alpha_{+20/+300^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	8.9
$T_g$ [ $^\circ\text{C}$ ]	493
$T_{10}^{13.0}$ [ $^\circ\text{C}$ ]	494
$T_{10}^{7.6}$ [ $^\circ\text{C}$ ]	593
$c_p$ [ $\text{J}/(\text{g}\cdot\text{K})$ ]	0.760
$\lambda$ [ $\text{W}/(\text{m}\cdot\text{K})$ ]	1.010
$AT$ [ $^\circ\text{C}$ ]	522
$\rho$ [ $\text{g}/\text{cm}^3$ ]	3.01
$E$ [ $10^3 \text{N}/\text{mm}^2$ ]	93
$\mu$	0.249
$K$ [ $10^{-6} \text{mm}^2/\text{N}$ ]	2.17
$HK_{0.1/20}$	535
$HG$	3
<b>Abrasion Aa</b>	124
<b>CR</b>	4
<b>FR</b>	3
<b>SR</b>	52.3
<b>AR</b>	2
<b>PR</b>	3
<b>SR-J</b>	4
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{\text{rel}}/\Delta T$ [ $10^{-6}/\text{K}$ ]			$\Delta n_{\text{abs}}/\Delta T$ [ $10^{-6}/\text{K}$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20						
+20/ +40						
+60/ +80						

## P-SK58A 589612.297

$n_d = 1.58913$	$v_d = 61.15$	$n_F - n_C = 0.009634$
$n_e = 1.59143$	$v_e = 60.93$	$n_{F'} - n_{C'} = 0.009707$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.55820
$n_{1970.1}$	1970.1	1.56439
$n_{1529.6}$	1529.6	1.57086
$n_{1060.0}$	1060.0	1.57728
$n_t$	1014.0	1.57799
$n_s$	852.1	1.58086
$n_r$	706.5	1.58449
$n_C$	656.3	1.58618
$n_{C'}$	643.8	1.58665
$n_{632.8}$	632.8	1.58709
$n_D$	589.3	1.58904
$n_d$	587.6	1.58913
$n_e$	546.1	1.59143
$n_F$	486.1	1.59581
$n_{F'}$	480.0	1.59636
$n_g$	435.8	1.60100
$n_h$	404.7	1.60530
$n_i$	365.0	1.61260
$n_{334.1}$	334.1	1.62045
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.546	0.220
2325	0.746	0.480
1970	0.924	0.820
1530	0.984	0.961
1060	0.996	0.991
700	0.995	0.988
660	0.995	0.988
620	0.996	0.989
580	0.997	0.992
546	0.998	0.994
500	0.997	0.993
460	0.996	0.989
436	0.995	0.987
420	0.994	0.986
405	0.994	0.985
400	0.994	0.984
390	0.991	0.977
380	0.986	0.965
370	0.980	0.950
365	0.971	0.930
350	0.924	0.820
334	0.752	0.490
320	0.364	0.080
310	0.067	
300	0.002	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2982
$P_{C,s}$	0.5519
$P_{d,C}$	0.3062
$P_{e,d}$	0.2386
$P_{g,F}$	0.5386
$P_{i,h}$	0.7578
$P'_{s,t}$	0.2959
$P'_{C',s}$	0.5963
$P'_{d,C'}$	0.2554
$P'_{e,d}$	0.2368
$P'_{g,F'}$	0.4784
$P'_{i,h}$	0.7521

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0150
$\Delta P_{C,s}$	0.0065
$\Delta P_{F,e}$	-0.0010
$\Delta P_{g,F}$	-0.0023
$\Delta P_{i,g}$	-0.0080

Constants of Dispersion Formula	
$B_1$	1.3167841
$B_2$	0.171154756
$B_3$	1.12501473
$C_1$	0.00720717498
$C_2$	0.0245659595
$C_3$	102.739728

Constants of Dispersion $dn/dT$	
$D_0$	$3.16 \cdot 10^{-6}$
$D_1$	$1.23 \cdot 10^{-8}$
$D_2$	$-1.08 \cdot 10^{-11}$
$E_0$	$4.41 \cdot 10^{-7}$
$E_1$	$3.20 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.176

Color Code	
$\lambda_{80}/\lambda_5$	35/31
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.4
$T_g [^\circ C]$	510
$T_{10}^{13.0} [^\circ C]$	510
$T_{10}^{7.6} [^\circ C]$	608
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	1.020
$AT [^\circ C]$	551
$\rho [g/cm^3]$	2.97
$E [10^3 N/mm^2]$	97
$\mu$	0.245
$K [10^{-6} mm^2/N]$	2.12
$HK_{0.1/20}$	662
<b>HG</b>	
<b>Abrasion Aa</b>	102
<b>CR</b>	
<b>FR</b>	
<b>SR</b>	
<b>AR</b>	
<b>PR</b>	
<b>SR-J</b>	4
<b>WR-J</b>	2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.2	3.8	4.4	1.0	1.6	2.2
+20/ +40	3.2	3.8	4.4	1.8	2.4	3.0
+60/ +80	3.3	4.0	4.7	2.2	2.9	3.6

## P-SK60 610579.308

$n_d = 1.61035$	$v_d = 57.90$	$n_F - n_C = 0.010541$
$n_e = 1.61286$	$v_e = 57.66$	$n_{F'} - n_{C'} = 0.010628$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57831
$n_{1970.1}$	1970.1	1.58450
$n_{1529.6}$	1529.6	1.59102
$n_{1060.0}$	1060.0	1.59762
$n_t$	1014.0	1.59836
$n_s$	852.1	1.60140
$n_r$	706.5	1.60530
$n_C$	656.3	1.60714
$n_{C'}$	643.8	1.60765
$n_{632.8}$	632.8	1.60813
$n_D$	589.3	1.61026
$n_d$	587.6	1.61035
$n_e$	546.1	1.61286
$n_F$	486.1	1.61768
$n_{F'}$	480.0	1.61828
$n_g$	435.8	1.62340
$n_h$	404.7	1.62815
$n_i$	365.0	1.63627
$n_{334.1}$	334.1	1.64506
$n_{312.6}$	312.6	1.65317
$n_{296.7}$	296.7	1.66061
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.693	0.400
2325	0.831	0.630
1970	0.959	0.900
1530	0.993	0.983
1060	0.999	0.998
700	0.999	0.997
660	0.998	0.996
620	0.998	0.996
580	0.999	0.998
546	0.999	0.998
500	0.999	0.997
460	0.998	0.995
436	0.998	0.994
420	0.998	0.994
405	0.997	0.993
400	0.997	0.992
390	0.995	0.988
380	0.993	0.983
370	0.990	0.974
365	0.987	0.967
350	0.967	0.920
334	0.905	0.780
320	0.746	0.480
310	0.480	0.160
300	0.150	0.005
290	0.010	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2887
$P_{C,s}$	0.5438
$P_{d,C}$	0.3049
$P_{e,d}$	0.2384
$P_{g,F}$	0.5427
$P_{i,h}$	0.7702
$P'_{s,t}$	0.2863
$P'_{C',s}$	0.5876
$P'_{d,C'}$	0.2542
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4819
$P'_{i,h}$	0.7639

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0128
$\Delta P_{C,s}$	0.0059
$\Delta P_{F,e}$	-0.0012
$\Delta P_{g,F}$	-0.0037
$\Delta P_{i,g}$	-0.0177

Constants of Dispersion Formula	
$B_1$	1.40790442
$B_2$	0.143381417
$B_3$	1.16513947
$C_1$	0.00784382378
$C_2$	0.0287769365
$C_3$	105.373397

Constants of Dispersion $dn/dT$	
$D_0$	$2.41 \cdot 10^{-6}$
$D_1$	$9.52 \cdot 10^{-9}$
$D_2$	$-8.08 \cdot 10^{-12}$
$E_0$	$4.72 \cdot 10^{-7}$
$E_1$	$6.22 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.193

Color Code	
$\lambda_{80}/\lambda_5$	33/29
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.9
$T_g [^\circ C]$	507
$T_{10}^{13.0} [^\circ C]$	509
$T_{10}^{7.6} [^\circ C]$	606
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	1.130
$AT [^\circ C]$	547
$\rho [g/cm^3]$	3.08
$E [10^3 N/mm^2]$	99
$\mu$	0.253
$K [10^{-6} mm^2/N]$	2.04
$HK_{0.1/20}$	601
$HG$	
$Abrasion Aa$	86
$CR$	3
$FR$	5
$SR$	53.4
$AR$	2.3
$PR$	3.3
$SR-J$	4
$WR-J$	3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.0	3.7	4.3	0.9	1.5	2.1
+20/ +40	2.9	3.6	4.3	1.5	2.3	2.9
+60/ +80	2.9	3.8	4.5	1.8	2.7	3.4

## N-KF9 523515.250

$n_d = 1.52346$	$v_d = 51.54$	$n_F - n_C = 0.010156$
$n_e = 1.52588$	$v_e = 51.26$	$n_{F'} - n_{C'} = 0.010258$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.49608
$n_{1970.1}$	1970.1	1.50095
$n_{1529.6}$	1529.6	1.50616
$n_{1060.0}$	1060.0	1.51170
$n_t$	1014.0	1.51234
$n_s$	852.1	1.51507
$n_r$	706.5	1.51867
$n_C$	656.3	1.52040
$n_{C'}$	643.8	1.52089
$n_{632.8}$	632.8	1.52134
$n_D$	589.3	1.52337
$n_d$	587.6	1.52346
$n_e$	546.1	1.52588
$n_F$	486.1	1.53056
$n_{F'}$	480.0	1.53114
$n_g$	435.8	1.53620
$n_h$	404.7	1.54096
$n_i$	365.0	1.54925
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.618	0.300
2325	0.713	0.430
1970	0.887	0.740
1530	0.992	0.981
1060	0.998	0.995
700	0.999	0.997
660	0.998	0.995
620	0.998	0.994
580	0.998	0.996
546	0.998	0.996
500	0.998	0.994
460	0.996	0.990
436	0.995	0.988
420	0.994	0.985
405	0.990	0.975
400	0.986	0.965
390	0.976	0.940
380	0.950	0.880
370	0.901	0.770
365	0.857	0.680
350	0.536	0.210
334	0.026	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2683
$P_{C,s}$	0.5249
$P_{d,C}$	0.3012
$P_{e,d}$	0.2380
$P_{g,F}$	0.5558
$P_{i,h}$	0.8161
$P'_{s,t}$	0.2657
$P'_{C',s}$	0.5669
$P'_{d,C'}$	0.2509
$P'_{e,d}$	0.2356
$P'_{g,F'}$	0.4930
$P'_{i,h}$	0.8080

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0038
$\Delta P_{C,s}$	0.0018
$\Delta P_{F,e}$	-0.0004
$\Delta P_{g,F}$	-0.0014
$\Delta P_{i,g}$	-0.0075

Constants of Dispersion Formula	
$B_1$	1.19286778
$B_2$	0.0893346571
$B_3$	0.920819805
$C_1$	0.00839154696
$C_2$	0.0404010786
$C_3$	112.572446

Color Code	
$\lambda_{80}/\lambda_5$	37/34
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$-1.66 \cdot 10^{-6}$
$D_1$	$8.44 \cdot 10^{-9}$
$D_2$	$-1.01 \cdot 10^{-11}$
$E_0$	$6.10 \cdot 10^{-7}$
$E_1$	$6.96 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.217

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	11.0
$T_g [^\circ C]$	476
$T_{10}^{13.0} [^\circ C]$	476
$T_{10}^{7.6} [^\circ C]$	640
$c_p [J/(g \cdot K)]$	0.860
$\lambda [W/(m \cdot K)]$	1.040
$\rho [g/cm^3]$	2.50
$E [10^3 N/mm^2]$	66
$\mu$	0.225
$K [10^{-6} mm^2/N]$	2.74
$HK_{0.1/20}$	480
$HG$	1
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.1	1.9	2.6	-0.9	-0.2	0.5
+20/ +40	0.9	1.8	2.6	-0.4	0.4	1.3
+60/ +80	0.9	1.8	2.8	-0.1	0.8	1.7



## N-SSK2 622533.353

$n_d = 1.62229$	$v_d = 53.27$	$n_F - n_C = 0.011681$
$n_e = 1.62508$	$v_e = 52.99$	$n_{F'} - n_{C'} = 0.011795$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59149
$n_{1970.1}$	1970.1	1.59685
$n_{1529.6}$	1529.6	1.60260
$n_{1060.0}$	1060.0	1.60880
$n_t$	1014.0	1.60953
$n_s$	852.1	1.61264
$n_r$	706.5	1.61678
$n_C$	656.3	1.61877
$n_{C'}$	643.8	1.61933
$n_{632.8}$	632.8	1.61985
$n_D$	589.3	1.62219
$n_d$	587.6	1.62229
$n_e$	546.1	1.62508
$n_F$	486.1	1.63045
$n_{F'}$	480.0	1.63112
$n_g$	435.8	1.63691
$n_h$	404.7	1.64232
$n_i$	365.0	1.65166
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.758	0.500
2325	0.877	0.720
1970	0.971	0.930
1530	0.992	0.981
1060	0.997	0.992
700	0.998	0.996
660	0.998	0.994
620	0.997	0.993
580	0.998	0.995
546	0.998	0.995
500	0.997	0.992
460	0.994	0.985
436	0.992	0.980
420	0.990	0.975
405	0.985	0.963
400	0.981	0.954
390	0.967	0.920
380	0.941	0.860
370	0.891	0.750
365	0.852	0.670
350	0.574	0.250
334	0.084	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2661
$P_{C,s}$	0.5246
$P_{d,C}$	0.3016
$P_{e,d}$	0.2381
$P_{g,F}$	0.5526
$P_{i,h}$	0.7997
$P'_{s,t}$	0.2636
$P'_{C',s}$	0.5669
$P'_{d,C'}$	0.2513
$P'_{e,d}$	0.2358
$P'_{g,F'}$	0.4902
$P'_{i,h}$	0.7920

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0069
$\Delta P_{C,s}$	-0.0025
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0016
$\Delta P_{i,g}$	-0.0146

Constants of Dispersion Formula	
$B_1$	1.4306027
$B_2$	0.153150554
$B_3$	1.01390904
$C_1$	0.00823982975
$C_2$	0.0333736841
$C_3$	106.870822

Constants of Dispersion $dn/dT$	
$D_0$	$5.21 \cdot 10^{-6}$
$D_1$	$1.34 \cdot 10^{-8}$
$D_2$	$-1.01 \cdot 10^{-11}$
$E_0$	$5.21 \cdot 10^{-7}$
$E_1$	$5.87 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.199

Color Code	
$\lambda_{80}/\lambda_5$	37/33
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.7
$T_g [^\circ C]$	653
$T_{10}^{13.0} [^\circ C]$	655
$T_{10}^{7.6} [^\circ C]$	801
$c_p [J/(g \cdot K)]$	0.580
$\lambda [W/(m \cdot K)]$	0.810
$\rho [g/cm^3]$	3.53
$E [10^3 N/mm^2]$	82
$\mu$	0.261
$K [10^{-6} mm^2/N]$	2.51
$HK_{0.1/20}$	570
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1.2
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.2	5.0	5.8	2.1	2.8	3.5
+20/ +40	4.3	5.2	6.1	2.9	3.8	4.6
+60/ +80	4.5	5.5	6.4	3.5	4.4	5.3

## N-SSK5 658509.371

$n_d = 1.65844$	$v_d = 50.88$	$n_F - n_C = 0.012940$
$n_e = 1.66152$	$v_e = 50.59$	$n_{F'} - n_{C'} = 0.013075$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.62581
$n_{1970.1}$	1970.1	1.63128
$n_{1529.6}$	1529.6	1.63720
$n_{1060.0}$	1060.0	1.64371
$n_t$	1014.0	1.64450
$n_s$	852.1	1.64785
$n_r$	706.5	1.65237
$n_C$	656.3	1.65455
$n_{C'}$	643.8	1.65517
$n_{632.8}$	632.8	1.65574
$n_D$	589.3	1.65833
$n_d$	587.6	1.65844
$n_e$	546.1	1.66152
$n_F$	486.1	1.66749
$n_{F'}$	480.0	1.66824
$n_g$	435.8	1.67471
$n_h$	404.7	1.68079
$n_i$	365.0	1.69139
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.727	0.450
2325	0.847	0.660
1970	0.963	0.910
1530	0.992	0.980
1060	0.996	0.990
700	0.997	0.993
660	0.997	0.992
620	0.997	0.992
580	0.997	0.993
546	0.996	0.990
500	0.993	0.982
460	0.987	0.968
436	0.982	0.956
420	0.976	0.940
405	0.963	0.910
400	0.959	0.900
390	0.941	0.860
380	0.896	0.760
370	0.804	0.580
365	0.727	0.450
350	0.336	0.060
334	0.017	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2592
$P_{C,s}$	0.5181
$P_{d,C}$	0.3003
$P_{e,d}$	0.2380
$P_{g,F}$	0.5575
$P_{i,h}$	0.8192
$P'_{s,t}$	0.2566
$P'_{C',s}$	0.5598
$P'_{d,C'}$	0.2502
$P'_{e,d}$	0.2355
$P'_{g,F'}$	0.4944
$P'_{i,h}$	0.8108

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0090
$\Delta P_{C,s}$	-0.0034
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	-0.0007
$\Delta P_{i,g}$	-0.0081

Constants of Dispersion Formula	
$B_1$	1.59222659
$B_2$	0.103520774
$B_3$	1.05174016
$C_1$	0.00920284626
$C_2$	0.0423530072
$C_3$	106.927374

Constants of Dispersion $dn/dT$	
$D_0$	$7.29 \cdot 10^{-7}$
$D_1$	$1.17 \cdot 10^{-8}$
$D_2$	$-1.50 \cdot 10^{-11}$
$E_0$	$6.08 \cdot 10^{-7}$
$E_1$	$7.66 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.189

Color Code	
$\lambda_{80}/\lambda_5$	38/34
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.0
$T_g [^\circ C]$	645
$T_{10}^{13.0} [^\circ C]$	637
$T_{10}^{7.6} [^\circ C]$	751
$c_p [J/(g \cdot K)]$	0.574
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.71
$E [10^3 N/mm^2]$	88
$\mu$	0.278
$K [10^{-6} mm^2/N]$	1.90
$HK_{0.1/20}$	590
<b>HG</b>	5
<b>CR</b>	2
<b>FR</b>	3
<b>SR</b>	52.2
<b>AR</b>	2.2
<b>PR</b>	3.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.2	3.0	3.9	0.0	0.8	1.6
+20/ +40	2.2	3.2	4.2	0.8	1.8	2.7
+60/ +80	2.4	3.5	4.5	1.2	2.3	3.4

## N-SSK8 618498.327

$n_d = 1.61773$	$v_d = 49.83$	$n_F - n_C = 0.012397$
$n_e = 1.62068$	$v_e = 49.54$	$n_{F'} - n_{C'} = 0.012529$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58594
$n_{1970.1}$	1970.1	1.59137
$n_{1529.6}$	1529.6	1.59723
$n_{1060.0}$	1060.0	1.60360
$n_t$	1014.0	1.60436
$n_s$	852.1	1.60759
$n_r$	706.5	1.61192
$n_C$	656.3	1.61401
$n_{C'}$	643.8	1.61460
$n_{632.8}$	632.8	1.61515
$n_D$	589.3	1.61762
$n_d$	587.6	1.61773
$n_e$	546.1	1.62068
$n_F$	486.1	1.62641
$n_{F'}$	480.0	1.62713
$n_g$	435.8	1.63335
$n_h$	404.7	1.63923
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.733	0.460
2325	0.847	0.660
1970	0.959	0.900
1530	0.992	0.980
1060	0.997	0.993
700	0.998	0.994
660	0.996	0.991
620	0.996	0.990
580	0.997	0.992
546	0.997	0.992
500	0.994	0.984
460	0.987	0.969
436	0.982	0.955
420	0.975	0.938
405	0.959	0.900
400	0.950	0.880
390	0.919	0.810
380	0.847	0.660
370	0.727	0.450
365	0.626	0.310
350	0.194	0.010
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2606
$P_{C,s}$	0.5179
$P_{d,C}$	0.2999
$P_{e,d}$	0.2378
$P_{g,F}$	0.5602
$P_{i,h}$	
$P'_{s,t}$	0.2579
$P'_{C',s}$	0.5594
$P'_{d,C'}$	0.2498
$P'_{e,d}$	0.2353
$P'_{g,F'}$	0.4967
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0028
$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0002
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.44857867
$B_2$	0.117965926
$B_3$	1.06937528
$C_1$	0.00869310149
$C_2$	0.0421566593
$C_3$	111.300666

Constants of Dispersion $dn/dT$	
$D_0$	$5.34 \cdot 10^{-7}$
$D_1$	$1.27 \cdot 10^{-8}$
$D_2$	$-1.75 \cdot 10^{-11}$
$E_0$	$5.40 \cdot 10^{-7}$
$E_1$	$7.05 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.224

Color Code	
$\lambda_{80}/\lambda_5$	39/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.2
$T_g [^\circ C]$	616
$T_{10}^{13.0} [^\circ C]$	604
$T_{10}^{7.6} [^\circ C]$	742
$c_p [J/(g \cdot K)]$	0.640
$\lambda [W/(m \cdot K)]$	0.840
$\rho [g/cm^3]$	3.27
$E [10^3 N/mm^2]$	84
$\mu$	0.251
$K [10^{-6} mm^2/N]$	2.36
$HK_{0.1/20}$	570
$HG$	3
$CR$	1
$FR$	0
$SR$	1
$AR$	1.3
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.9	2.7	3.5	-0.2	0.5	1.3
+20/ +40	2.0	2.9	3.9	0.6	1.5	2.4
+60/ +80	2.2	3.2	4.2	1.1	2.1	3.1

## N-LAK7 652585.384

$n_d = 1.65160$	$v_d = 58.52$	$n_F - n_C = 0.011135$
$n_e = 1.65425$	$v_e = 58.26$	$n_{F'} - n_{C'} = 0.011229$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.61875
$n_{1970.1}$	1970.1	1.62499
$n_{1529.6}$	1529.6	1.63156
$n_{1060.0}$	1060.0	1.63828
$n_t$	1014.0	1.63904
$n_s$	852.1	1.64220
$n_r$	706.5	1.64628
$n_C$	656.3	1.64821
$n_{C'}$	643.8	1.64875
$n_{632.8}$	632.8	1.64925
$n_D$	589.3	1.65150
$n_d$	587.6	1.65160
$n_e$	546.1	1.65425
$n_F$	486.1	1.65934
$n_{F'}$	480.0	1.65998
$n_g$	435.8	1.66539
$n_h$	404.7	1.67042
$n_i$	365.0	1.67897
$n_{334.1}$	334.1	1.68820
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.550	0.224
2325	0.754	0.494
1970	0.943	0.863
1530	0.989	0.972
1060	0.999	0.998
700	0.999	0.997
660	0.998	0.996
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.997	0.992
460	0.994	0.984
436	0.992	0.980
420	0.991	0.977
405	0.989	0.973
400	0.988	0.970
390	0.984	0.961
380	0.978	0.945
370	0.966	0.917
365	0.956	0.894
350	0.908	0.785
334	0.799	0.570
320	0.619	0.301
310	0.415	0.111
300	0.191	0.016
290	0.050	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2835
$P_{C,s}$	0.5400
$P_{d,C}$	0.3044
$P_{e,d}$	0.2385
$P_{g,F}$	0.5433
$P_{i,h}$	0.7687
$P'_{s,t}$	0.2812
$P'_{C',s}$	0.5836
$P'_{d,C'}$	0.2538
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4823
$P'_{i,h}$	0.7622

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0010
$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	-0.0005
$\Delta P_{g,F}$	-0.0021
$\Delta P_{i,g}$	-0.0140

Constants of Dispersion Formula	
$B_1$	1.23679889
$B_2$	0.445051837
$B_3$	1.01745888
$C_1$	0.00610105538
$C_2$	0.0201388334
$C_3$	90.638038

Constants of Dispersion $dn/dT$	
$D_0$	$-3.40 \cdot 10^{-6}$
$D_1$	$1.17 \cdot 10^{-8}$
$D_2$	$2.38 \cdot 10^{-11}$
$E_0$	$4.96 \cdot 10^{-7}$
$E_1$	$4.44 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.107

Color Code	
$\lambda_{80}/\lambda_5$	35/29
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.2
$T_g [^\circ C]$	618
$T_{10}^{13.0} [^\circ C]$	626
$T_{10}^{7.6} [^\circ C]$	716
$c_p [J/(g \cdot K)]$	0.530
$\lambda [W/(m \cdot K)]$	0.740
$\rho [g/cm^3]$	3.84
$E [10^3 N/mm^2]$	90
$\mu$	0.277
$K [10^{-6} mm^2/N]$	1.65
$HK_{0.1/20}$	600
$HG$	5
$CR$	3
$FR$	2
$SR$	53.3
$AR$	3.3
$PR$	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.2	0.8	1.3	-2.0	-1.5	-1.0
+20/ +40	0.0	0.7	1.3	-1.4	-0.7	-0.2
+60/ +80	0.3	1.0	1.7	-0.8	-0.1	0.5

## N-LAK8 713538.375

$n_d = 1.71300$	$v_d = 53.83$	$n_F - n_C = 0.013245$
$n_e = 1.71616$	$v_e = 53.61$	$n_{F'} - n_{C'} = 0.013359$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67294
$n_{1970.1}$	1970.1	1.68075
$n_{1529.6}$	1529.6	1.68890
$n_{1060.0}$	1060.0	1.69710
$n_t$	1014.0	1.69802
$n_s$	852.1	1.70181
$n_r$	706.5	1.70668
$n_C$	656.3	1.70897
$n_{C'}$	643.8	1.70962
$n_{632.8}$	632.8	1.71022
$n_D$	589.3	1.71289
$n_d$	587.6	1.71300
$n_e$	546.1	1.71616
$n_F$	486.1	1.72222
$n_{F'}$	480.0	1.72297
$n_g$	435.8	1.72944
$n_h$	404.7	1.73545
$n_i$	365.0	1.74573
$n_{334.1}$	334.1	1.75687
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.398	0.100
2325	0.707	0.420
1970	0.950	0.880
1530	0.992	0.979
1060	0.998	0.994
700	0.998	0.996
660	0.998	0.995
620	0.998	0.994
580	0.998	0.994
546	0.998	0.995
500	0.998	0.994
460	0.995	0.987
436	0.992	0.979
420	0.988	0.970
405	0.981	0.952
400	0.977	0.943
390	0.965	0.915
380	0.946	0.870
370	0.905	0.780
365	0.877	0.720
350	0.739	0.470
334	0.509	0.185
320	0.276	0.040
310	0.137	0.010
300	0.044	
290	0.010	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2861
$P_{C,s}$	0.5408
$P_{d,C}$	0.3042
$P_{e,d}$	0.2383
$P_{g,F}$	0.5450
$P_{i,h}$	0.7764
$P'_{s,t}$	0.2836
$P'_{C',s}$	0.5843
$P'_{d,C'}$	0.2536
$P'_{e,d}$	0.2363
$P'_{g,F'}$	0.4838
$P'_{i,h}$	0.7698

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0266
$\Delta P_{C,s}$	0.0124
$\Delta P_{F,e}$	-0.0026
$\Delta P_{g,F}$	-0.0083
$\Delta P_{i,g}$	-0.0428

Constants of Dispersion Formula	
$B_1$	1.33183167
$B_2$	0.546623206
$B_3$	1.19084015
$C_1$	0.00620023871
$C_2$	0.0216465439
$C_3$	82.5827736

Constants of Dispersion $dn/dT$	
$D_0$	$4.10 \cdot 10^{-6}$
$D_1$	$1.25 \cdot 10^{-8}$
$D_2$	$-1.60 \cdot 10^{-11}$
$E_0$	$4.30 \cdot 10^{-7}$
$E_1$	$6.29 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.213

Color Code	
$\lambda_{80}/\lambda_5$	37/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.7
$T_g [^\circ C]$	643
$T_{10}^{13.0} [^\circ C]$	635
$T_{10}^{7.6} [^\circ C]$	717
$c_p [J/(g \cdot K)]$	0.620
$\lambda [W/(m \cdot K)]$	0.840
$\rho [g/cm^3]$	3.75
$E [10^3 N/mm^2]$	115
$\mu$	0.289
$K [10^{-6} mm^2/N]$	1.81
$HK_{0.1/20}$	740
<b>HG</b>	2
<b>CR</b>	3
<b>FR</b>	2
<b>SR</b>	52.3
<b>AR</b>	1
<b>PR</b>	3.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.0	4.7	5.4	1.7	2.4	3.0
+20/ +40	4.1	5.0	5.8	2.6	3.5	4.3
+60/ +80	4.3	5.2	6.2	3.1	4.1	5.0

## N-LAK9 691547.351

$n_d = 1.69100$	$v_d = 54.71$	$n_F - n_C = 0.012631$
$n_e = 1.69401$	$v_e = 54.48$	$n_{F'} - n_{C'} = 0.012738$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.65294
$n_{1970.1}$	1970.1	1.66032
$n_{1529.6}$	1529.6	1.66804
$n_{1060.0}$	1060.0	1.67584
$n_t$	1014.0	1.67672
$n_s$	852.1	1.68033
$n_r$	706.5	1.68497
$n_C$	656.3	1.68716
$n_{C'}$	643.8	1.68777
$n_{632.8}$	632.8	1.68834
$n_D$	589.3	1.69089
$n_d$	587.6	1.69100
$n_e$	546.1	1.69401
$n_F$	486.1	1.69979
$n_{F'}$	480.0	1.70051
$n_g$	435.8	1.70667
$n_h$	404.7	1.71239
$n_i$	365.0	1.72219
$n_{334.1}$	334.1	1.73281
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.455	0.140
2325	0.707	0.420
1970	0.941	0.860
1530	0.986	0.966
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.994
546	0.998	0.994
500	0.997	0.992
460	0.994	0.984
436	0.991	0.977
420	0.988	0.970
405	0.983	0.957
400	0.980	0.950
390	0.971	0.930
380	0.954	0.890
370	0.928	0.830
365	0.906	0.782
350	0.787	0.550
334	0.525	0.200
320	0.209	0.020
310	0.070	
300	0.014	
290	0.001	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2859
$P_{C,s}$	0.5409
$P_{d,C}$	0.3043
$P_{e,d}$	0.2384
$P_{g,F}$	0.5447
$P_{i,h}$	0.7756
$P'_{s,t}$	0.2834
$P'_{C',s}$	0.5844
$P'_{d,C'}$	0.2536
$P'_{e,d}$	0.2363
$P'_{g,F'}$	0.4835
$P'_{i,h}$	0.7690

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0223
$\Delta P_{C,s}$	0.0105
$\Delta P_{F,e}$	-0.0023
$\Delta P_{g,F}$	-0.0071
$\Delta P_{i,g}$	-0.0367

Constants of Dispersion Formula	
$B_1$	1.46231905
$B_2$	0.344399589
$B_3$	1.15508372
$C_1$	0.00724270156
$C_2$	0.0243353131
$C_3$	85.4686868

Constants of Dispersion $dn/dT$	
$D_0$	$2.11 \cdot 10^{-6}$
$D_1$	$1.11 \cdot 10^{-8}$
$D_2$	$1.82 \cdot 10^{-12}$
$E_0$	$4.74 \cdot 10^{-7}$
$E_1$	$-3.47 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.146

Color Code	
$\lambda_{80}/\lambda_5$	37/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.5
$T_g [^\circ C]$	656
$T_{10}^{13.0} [^\circ C]$	645
$T_{10}^{7.6} [^\circ C]$	722
$c_p [J/(g \cdot K)]$	0.649
$\lambda [W/(m \cdot K)]$	0.908
$\rho [g/cm^3]$	3.51
$E [10^3 N/mm^2]$	110
$\mu$	0.285
$K [10^{-6} mm^2/N]$	1.83
$HK_{0.1/20}$	700
<b>HG</b>	3
<b>CR</b>	3
<b>FR</b>	3
<b>SR</b>	52
<b>AR</b>	1.2
<b>PR</b>	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.0	3.9	4.6	0.8	1.6	2.3
+20/ +40	2.9	3.7	4.4	1.5	2.2	2.9
+60/ +80	3.1	3.8	4.4	2.0	2.7	3.3

## N-LAK10 720506.369

$n_d = 1.72003$	$v_d = 50.62$	$n_F - n_C = 0.014224$
$n_e = 1.72341$	$v_e = 50.39$	$n_{F'} - n_{C'} = 0.014357$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67890
$n_{1970.1}$	1970.1	1.68670
$n_{1529.6}$	1529.6	1.69488
$n_{1060.0}$	1060.0	1.70324
$n_t$	1014.0	1.70419
$n_s$	852.1	1.70815
$n_r$	706.5	1.71328
$n_C$	656.3	1.71572
$n_{C'}$	643.8	1.71641
$n_{632.8}$	632.8	1.71705
$n_D$	589.3	1.71990
$n_d$	587.6	1.72003
$n_e$	546.1	1.72341
$n_F$	486.1	1.72995
$n_{F'}$	480.0	1.73077
$n_g$	435.8	1.73779
$n_h$	404.7	1.74438
$n_i$	365.0	1.75578
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.428	0.120
2325	0.720	0.440
1970	0.950	0.880
1530	0.991	0.977
1060	0.998	0.995
700	0.999	0.995
660	0.998	0.994
620	0.998	0.994
580	0.997	0.993
546	0.998	0.994
500	0.995	0.988
460	0.991	0.977
436	0.985	0.963
420	0.976	0.940
405	0.963	0.910
400	0.959	0.900
390	0.937	0.850
380	0.901	0.770
370	0.831	0.630
365	0.770	0.520
350	0.442	0.130
334	0.026	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2779
$P_{C,s}$	0.5328
$P_{d,C}$	0.3025
$P_{e,d}$	0.2381
$P_{g,F}$	0.5515
$P_{i,h}$	0.8015
$P'_{s,t}$	0.2753
$P'_{C',s}$	0.5755
$P'_{d,C'}$	0.2521
$P'_{e,d}$	0.2359
$P'_{g,F'}$	0.4894
$P'_{i,h}$	0.7941

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0256
$\Delta P_{C,s}$	0.0119
$\Delta P_{F,e}$	-0.0024
$\Delta P_{g,F}$	-0.0072
$\Delta P_{i,g}$	-0.0354

Constants of Dispersion Formula	
$B_1$	1.72878017
$B_2$	0.169257825
$B_3$	1.19386956
$C_1$	0.00886014635
$C_2$	0.0363416509
$C_3$	82.9009069

Color Code	
$\lambda_{80}/\lambda_5$	39/34
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$4.10 \cdot 10^{-6}$
$D_1$	$1.23 \cdot 10^{-8}$
$D_2$	$-7.85 \cdot 10^{-12}$
$E_0$	$5.08 \cdot 10^{-7}$
$E_1$	$5.76 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.205

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.8
$T_g [^\circ C]$	636
$T_{10}^{13.0} [^\circ C]$	631
$T_{10}^{7.6} [^\circ C]$	714
$c_p [J/(g \cdot K)]$	0.640
$\lambda [W/(m \cdot K)]$	0.860
$\rho [g/cm^3]$	3.69
$E [10^3 N/mm^2]$	116
$\mu$	0.286
$K [10^{-6} mm^2/N]$	1.97
$HK_{0.1/20}$	780
<b>HG</b>	2
<b>CR</b>	2
<b>FR</b>	2
<b>SR</b>	52.3
<b>AR</b>	1
<b>PR</b>	3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.1	5.0	5.8	1.8	2.6	3.4
+20/ +40	4.2	5.1	6.1	2.7	3.6	4.6
+60/ +80	4.4	5.4	6.5	3.2	4.3	5.3



## N-LAK12 678552.410

$n_d = 1.67790$	$v_d = 55.20$	$n_F - n_C = 0.012281$
$n_e = 1.68083$	$v_e = 54.92$	$n_{F'} - n_{C'} = 0.012396$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.64541
$n_{1970.1}$	1970.1	1.65107
$n_{1529.6}$	1529.6	1.65713
$n_{1060.0}$	1060.0	1.66366
$n_t$	1014.0	1.66443
$n_s$	852.1	1.66772
$n_r$	706.5	1.67209
$n_C$	656.3	1.67419
$n_{C'}$	643.8	1.67478
$n_{632.8}$	632.8	1.67533
$n_D$	589.3	1.67779
$n_d$	587.6	1.67790
$n_e$	546.1	1.68083
$n_F$	486.1	1.68647
$n_{F'}$	480.0	1.68717
$n_g$	435.8	1.69320
$n_h$	404.7	1.69882
$n_i$	365.0	1.70842
$n_{334.1}$	334.1	1.71881
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.592	0.270
2325	0.764	0.510
1970	0.937	0.850
1530	0.990	0.975
1060	0.997	0.992
700	0.997	0.993
660	0.996	0.989
620	0.995	0.988
580	0.996	0.990
546	0.996	0.991
500	0.994	0.986
460	0.987	0.968
436	0.983	0.958
420	0.981	0.952
405	0.977	0.943
400	0.976	0.940
390	0.967	0.920
380	0.946	0.870
370	0.910	0.790
365	0.882	0.730
350	0.733	0.460
334	0.468	0.150
320	0.152	0.010
310	0.032	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2673
$P_{C,s}$	0.5269
$P_{d,C}$	0.3024
$P_{e,d}$	0.2383
$P_{g,F}$	0.5485
$P_{i,h}$	0.7818
$P'_{s,t}$	0.2648
$P'_{C',s}$	0.5695
$P'_{d,C'}$	0.2521
$P'_{e,d}$	0.2361
$P'_{g,F'}$	0.4866
$P'_{i,h}$	0.7746

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0126
$\Delta P_{C,s}$	-0.0047
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0024
$\Delta P_{i,g}$	-0.0226

Constants of Dispersion Formula	
$B_1$	1.17365704
$B_2$	0.588992398
$B_3$	0.978014394
$C_1$	0.00577031797
$C_2$	0.0200401678
$C_3$	95.4873482

Constants of Dispersion $dn/dT$	
$D_0$	$-5.67 \cdot 10^{-6}$
$D_1$	$8.27 \cdot 10^{-9}$
$D_2$	$1.27 \cdot 10^{-12}$
$E_0$	$5.25 \cdot 10^{-7}$
$E_1$	$6.30 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.162

Color Code	
$\lambda_{80}/\lambda_5$	37/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.3
$T_g [^\circ C]$	614
$T_{10}^{13.0} [^\circ C]$	606
$T_{10}^{7.6} [^\circ C]$	714
$c_p [J/(g \cdot K)]$	0.510
$\lambda [W/(m \cdot K)]$	0.680
$\rho [g/cm^3]$	4.10
$E [10^3 N/mm^2]$	87
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.44
$HK_{0.1/20}$	560
<b>HG</b>	6
<b>CR</b>	3
<b>FR</b>	1
<b>SR</b>	53.3
<b>AR</b>	3.3
<b>PR</b>	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-1.0	-0.3	0.3	-3.2	-2.6	-2.0
+20/ +40	-1.2	-0.4	0.3	-2.7	-1.9	-1.2
+60/ +80	-1.2	-0.3	0.5	-2.3	-1.5	-0.7

**N-LAK14**  
**697554.363**

$n_d = 1.69680$	$v_d = 55.41$	$n_F - n_C = 0.012575$
$n_e = 1.69980$	$v_e = 55.19$	$n_{F'} - n_{C'} = 0.012679$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.65783
$n_{1970.1}$	1970.1	1.66554
$n_{1529.6}$	1529.6	1.67357
$n_{1060.0}$	1060.0	1.68157
$n_t$	1014.0	1.68246
$n_s$	852.1	1.68612
$n_r$	706.5	1.69077
$n_C$	656.3	1.69297
$n_{C'}$	643.8	1.69358
$n_{632.8}$	632.8	1.69415
$n_D$	589.3	1.69669
$n_d$	587.6	1.69680
$n_e$	546.1	1.69980
$n_F$	486.1	1.70554
$n_{F'}$	480.0	1.70626
$n_g$	435.8	1.71237
$n_h$	404.7	1.71804
$n_i$	365.0	1.72772
$n_{334.1}$	334.1	1.73819
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.382	0.090
2325	0.672	0.370
1970	0.933	0.840
1530	0.984	0.960
1060	0.998	0.995
700	0.998	0.995
660	0.998	0.994
620	0.997	0.992
580	0.997	0.993
546	0.998	0.995
500	0.997	0.992
460	0.994	0.984
436	0.991	0.977
420	0.988	0.971
405	0.984	0.960
400	0.981	0.953
390	0.971	0.930
380	0.959	0.900
370	0.933	0.840
365	0.915	0.800
350	0.821	0.610
334	0.642	0.330
320	0.428	0.120
310	0.239	0.040
300	0.089	
290	0.019	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2903
$P_{C,s}$	0.5447
$P_{d,C}$	0.3049
$P_{e,d}$	0.2384
$P_{g,F}$	0.5427
$P_{i,h}$	0.7701
$P'_{s,t}$	0.2880
$P'_{C',s}$	0.5885
$P'_{d,C'}$	0.2542
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4819
$P'_{i,h}$	0.7638

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0273
$\Delta P_{C,s}$	0.0127
$\Delta P_{F,e}$	-0.0026
$\Delta P_{g,F}$	-0.0079
$\Delta P_{i,g}$	-0.0386

Constants of Dispersion Formula	
$B_1$	1.50781212
$B_2$	0.318866829
$B_3$	1.14287213
$C_1$	0.00746098727
$C_2$	0.0242024834
$C_3$	80.9565165

Constants of Dispersion $dn/dT$	
$D_0$	$2.68 \cdot 10^{-6}$
$D_1$	$1.15 \cdot 10^{-8}$
$D_2$	$-1.44 \cdot 10^{-11}$
$E_0$	$3.72 \cdot 10^{-7}$
$E_1$	$5.53 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.226

Color Code	
$\lambda_{80}/\lambda_5$	37/30
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.9
$T_g [^\circ C]$	661
$T_{10}^{13.0} [^\circ C]$	653
$T_{10}^{7.6} [^\circ C]$	734
$c_p [J/(g \cdot K)]$	0.630
$\lambda [W/(m \cdot K)]$	0.890
$\rho [g/cm^3]$	3.63
$E [10^3 N/mm^2]$	111
$\mu$	0.283
$K [10^{-6} mm^2/N]$	1.73
$HK_{0.1/20}$	730
<b>HG</b>	2
<b>CR</b>	3
<b>FR</b>	2
<b>SR</b>	52.3
<b>AR</b>	1
<b>PR</b>	3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.2	3.8	4.4	0.9	1.5	2.1
+20/ +40	3.2	4.0	4.7	1.8	2.5	3.2
+60/ +80	3.4	4.2	5.0	2.2	3.0	3.8

## N-LAK21 640601.374

$n_d = 1.64049$	$v_d = 60.10$	$n_F - n_C = 0.010657$
$n_e = 1.64304$	$v_e = 59.86$	$n_{F'} - n_{C'} = 0.010743$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.60776
$n_{1970.1}$	1970.1	1.61416
$n_{1529.6}$	1529.6	1.62086
$n_{1060.0}$	1060.0	1.62759
$n_t$	1014.0	1.62834
$n_s$	852.1	1.63143
$n_r$	706.5	1.63538
$n_C$	656.3	1.63724
$n_{C'}$	643.8	1.63776
$n_{632.8}$	632.8	1.63825
$n_D$	589.3	1.64040
$n_d$	587.6	1.64049
$n_e$	546.1	1.64304
$n_F$	486.1	1.64790
$n_{F'}$	480.0	1.64850
$n_g$	435.8	1.65366
$n_h$	404.7	1.65844
$n_i$	365.0	1.66657
$n_{334.1}$	334.1	1.67532
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.536	0.210
2325	0.752	0.490
1970	0.946	0.870
1530	0.988	0.970
1060	0.998	0.994
700	0.998	0.994
660	0.996	0.991
620	0.996	0.990
580	0.997	0.992
546	0.997	0.992
500	0.995	0.988
460	0.990	0.976
436	0.987	0.969
420	0.985	0.963
405	0.982	0.955
400	0.979	0.950
390	0.971	0.930
380	0.959	0.900
370	0.928	0.830
365	0.905	0.780
350	0.799	0.570
334	0.565	0.240
320	0.250	0.040
310	0.060	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2900
$P_{C,s}$	0.5453
$P_{d,C}$	0.3052
$P_{e,d}$	0.2385
$P_{g,F}$	0.5411
$P_{i,h}$	0.7630
$P'_{s,t}$	0.2877
$P'_{C',s}$	0.5892
$P'_{d,C'}$	0.2545
$P'_{e,d}$	0.2366
$P'_{g,F'}$	0.4804
$P'_{i,h}$	0.7569

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0052
$\Delta P_{C,s}$	0.0023
$\Delta P_{F,e}$	-0.0005
$\Delta P_{g,F}$	-0.0017
$\Delta P_{i,g}$	-0.0090

Constants of Dispersion Formula	
$B_1$	1.22718116
$B_2$	0.420783743
$B_3$	1.01284843
$C_1$	0.00602075682
$C_2$	0.0196862889
$C_3$	88.4370099

Constants of Dispersion $dn/dT$	
$D_0$	$-2.36 \cdot 10^{-6}$
$D_1$	$1.15 \cdot 10^{-8}$
$D_2$	$1.11 \cdot 10^{-11}$
$E_0$	$3.10 \cdot 10^{-7}$
$E_1$	$2.78 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.234

Color Code	
$\lambda_{80}/\lambda_5$	37/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.1
$T_g [^\circ C]$	639
$T_{10}^{13.0} [^\circ C]$	627
$T_{10}^{7.6} [^\circ C]$	716
$c_p [J/(g \cdot K)]$	0.590
$\lambda [W/(m \cdot K)]$	0.880
$\rho [g/cm^3]$	3.74
$E [10^3 N/mm^2]$	91
$\mu$	0.272
$K [10^{-6} mm^2/N]$	1.74
$HK_{0.1/20}$	600
$HG$	5
$CR$	4
$FR$	2
$SR$	53.2
$AR$	4.3
$PR$	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.6	1.1	1.6	-1.6	-1.2	-0.7
+20/ +40	0.5	1.0	1.6	-0.9	-0.4	0.1
+60/ +80	0.7	1.3	1.9	-0.4	0.1	0.7

## N-LAK22 651559.377

$n_d = 1.65113$	$v_d = 55.89$	$n_F - n_C = 0.011650$
$n_e = 1.65391$	$v_e = 55.63$	$n_{F'} - n_{C'} = 0.011755$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.61915
$n_{1970.1}$	1970.1	1.62488
$n_{1529.6}$	1529.6	1.63100
$n_{1060.0}$	1060.0	1.63747
$n_t$	1014.0	1.63823
$n_s$	852.1	1.64141
$n_r$	706.5	1.64560
$n_C$	656.3	1.64760
$n_{C'}$	643.8	1.64816
$n_{632.8}$	632.8	1.64868
$n_D$	589.3	1.65103
$n_d$	587.6	1.65113
$n_e$	546.1	1.65391
$n_F$	486.1	1.65925
$n_{F'}$	480.0	1.65992
$n_g$	435.8	1.66562
$n_h$	404.7	1.67092
$n_i$	365.0	1.67997
$n_{334.1}$	334.1	1.68975
$n_{312.6}$	312.6	1.69876
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.672	0.370
2325	0.826	0.620
1970	0.959	0.900
1530	0.991	0.978
1060	0.998	0.994
700	0.998	0.994
660	0.997	0.992
620	0.996	0.991
580	0.997	0.993
546	0.997	0.993
500	0.995	0.988
460	0.992	0.980
436	0.990	0.975
420	0.989	0.973
405	0.987	0.968
400	0.985	0.964
390	0.980	0.950
380	0.967	0.920
370	0.947	0.873
365	0.933	0.840
350	0.844	0.655
334	0.657	0.350
320	0.398	0.100
310	0.209	0.020
300	0.078	
290	0.014	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2729
$P_{C,s}$	0.5314
$P_{d,C}$	0.3031
$P_{e,d}$	0.2384
$P_{g,F}$	0.5467
$P_{i,h}$	0.7771
$P'_{s,t}$	0.2704
$P'_{C',s}$	0.5744
$P'_{d,C'}$	0.2527
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4851
$P'_{i,h}$	0.7702

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0058
$\Delta P_{C,s}$	-0.0018
$\Delta P_{F,e}$	-0.0005
$\Delta P_{g,F}$	-0.0031
$\Delta P_{i,g}$	-0.0236

Constants of Dispersion Formula	
$B_1$	1.14229781
$B_2$	0.535138441
$B_3$	1.04088385
$C_1$	0.00585778594
$C_2$	0.0198546147
$C_3$	100.834017

Constants of Dispersion $dn/dT$	
$D_0$	$1.36 \cdot 10^{-6}$
$D_1$	$1.49 \cdot 10^{-8}$
$D_2$	$-1.29 \cdot 10^{-11}$
$E_0$	$3.41 \cdot 10^{-7}$
$E_1$	$2.09 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.262

Color Code	
$\lambda_{80}/\lambda_5$	36/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	689
$T_{10}^{13.0} [^\circ C]$	673
$T_{10}^{7.6} [^\circ C]$	0
$c_p [J/(g \cdot K)]$	0.540
$\lambda [W/(m \cdot K)]$	0.750
$\rho [g/cm^3]$	3.77
$E [10^3 N/mm^2]$	90
$\mu$	0.266
$K [10^{-6} mm^2/N]$	1.82
$HK_{0.1/20}$	600
<b>HG</b>	4
<b>CR</b>	2
<b>FR</b>	2
<b>SR</b>	51.2
<b>AR</b>	1
<b>PR</b>	2.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.2	2.9	3.6	0.0	0.6	1.3
+20/ +40	2.4	3.1	3.9	1.0	1.7	2.4
+60/ +80	2.7	3.4	4.2	1.6	2.3	3.1

## N-LAK33B 755523.422

 $n_d = 1.75500$ 
 $v_d = 52.30$ 
 $n_F - n_C = 0.014436$ 
 $n_e = 1.75844$ 
 $v_e = 52.07$ 
 $n_{F'} - n_{C'} = 0.014566$ 

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.71387
$n_{1970.1}$	1970.1	1.72155
$n_{1529.6}$	1529.6	1.72962
$n_{1060.0}$	1060.0	1.73796
$n_t$	1014.0	1.73892
$n_s$	852.1	1.74292
$n_r$	706.5	1.74814
$n_C$	656.3	1.75062
$n_{C'}$	643.8	1.75132
$n_{632.8}$	632.8	1.75197
$n_D$	589.3	1.75487
$n_d$	587.6	1.75500
$n_e$	546.1	1.75844
$n_F$	486.1	1.76506
$n_{F'}$	480.0	1.76589
$n_g$	435.8	1.77296
$n_h$	404.7	1.77954
$n_i$	365.0	1.79082
$n_{334.1}$	334.1	1.80306
$n_{312.6}$	312.6	1.81436
$n_{296.7}$	296.7	1.82471
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.42288601
$B_2$	0.593661336
$B_3$	1.1613526
$C_1$	0.00670283452
$C_2$	0.021941621
$C_3$	80.7407701

Constants of Dispersion dn/dT	
$D_0$	$2.77 \cdot 10^{-6}$
$D_1$	$1.24 \cdot 10^{-8}$
$D_2$	$1.22 \cdot 10^{-11}$
$E_0$	$5.19 \cdot 10^{-7}$
$E_1$	$6.02 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.184

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	3.5	4.4	5.2	1.2	2.0	2.8
+20/ +40	3.5	4.5	5.4	2.0	3.0	3.9
+60/ +80	3.9	4.9	5.9	2.7	3.7	4.7

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.398	0.100
2325	0.679	0.380
1970	0.937	0.850
1530	0.985	0.963
1060	0.998	0.995
700	0.998	0.995
660	0.998	0.994
620	0.997	0.993
580	0.998	0.994
546	0.998	0.995
500	0.997	0.993
460	0.994	0.986
436	0.992	0.979
420	0.988	0.971
405	0.982	0.956
400	0.980	0.950
390	0.971	0.930
380	0.954	0.890
370	0.928	0.830
365	0.910	0.790
350	0.821	0.610
334	0.657	0.350
320	0.455	0.140
310	0.283	0.030
300	0.217	0.010
290	0.118	
280	0.022	
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	37/28
(* = $\lambda_{70} / \lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2768
$P_{C,s}$	0.5337
$P_{d,C}$	0.3032
$P_{e,d}$	0.2383
$P_{g,F}$	0.5473
$P_{i,h}$	0.7813
$P'_{s,t}$	0.2744
$P'_{C',s}$	0.5767
$P'_{d,C'}$	0.2527
$P'_{e,d}$	0.2362
$P'_{g,F'}$	0.4857
$P'_{i,h}$	0.7743

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0175
$\Delta P_{C,s}$	0.0089
$\Delta P_{F,e}$	-0.0024
$\Delta P_{g,F}$	-0.0085
$\Delta P_{i,g}$	-0.0484

Other Properties	
$\alpha_{-30/+70°C} [10^{-6} / K]$	5.8
$\alpha_{+20/+300°C} [10^{-6} / K]$	7.1
$T_g [°C]$	668
$T_{10}^{13.0} [°C]$	670
$T_{10}^{7.6} [°C]$	750
$c_p [J / (g \cdot K)]$	0.560
$\lambda [W / (m \cdot K)]$	0.890
<b>AT [°C]</b>	702
$\rho [g / cm^3]$	4.22
$E [10^3 N / mm^2]$	122
$\mu$	0.295
$K [10^{-6} mm^2 / N]$	1.43
$HK_{0.1/20}$	797
<b>HG</b>	
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	51.3
<b>AR</b>	1
<b>PR</b>	2
<b>SR-J</b>	4
<b>WR-J</b>	1

## N-LAK34 729545.402

$n_d = 1.72916$	$v_d = 54.50$	$n_F - n_C = 0.013379$
$n_e = 1.73235$	$v_e = 54.27$	$n_{F'} - n_{C'} = 0.013493$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.68925
$n_{1970.1}$	1970.1	1.69695
$n_{1529.6}$	1529.6	1.70500
$n_{1060.0}$	1060.0	1.71315
$n_t$	1014.0	1.71407
$n_s$	852.1	1.71787
$n_r$	706.5	1.72277
$n_C$	656.3	1.72509
$n_{C'}$	643.8	1.72574
$n_{632.8}$	632.8	1.72634
$n_D$	589.3	1.72904
$n_d$	587.6	1.72916
$n_e$	546.1	1.73235
$n_F$	486.1	1.73847
$n_{F'}$	480.0	1.73923
$n_g$	435.8	1.74575
$n_h$	404.7	1.75180
$n_i$	365.0	1.76214
$n_{334.1}$	334.1	1.77331
$n_{312.6}$	312.6	1.78359
$n_{296.7}$	296.7	1.79296
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.398	0.100
2325	0.672	0.370
1970	0.937	0.850
1530	0.984	0.960
1060	0.998	0.995
700	0.999	0.997
660	0.999	0.997
620	0.998	0.996
580	0.998	0.995
546	0.999	0.997
500	0.998	0.994
460	0.995	0.987
436	0.992	0.979
420	0.989	0.972
405	0.983	0.959
400	0.981	0.952
390	0.976	0.940
380	0.963	0.910
370	0.941	0.860
365	0.924	0.820
350	0.852	0.670
334	0.713	0.430
320	0.525	0.200
310	0.377	0.070
300	0.281	0.030
290	0.168	0.010
280	0.073	
270	0.014	
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2841
$P_{C,s}$	0.5398
$P_{d,C}$	0.3042
$P_{e,d}$	0.2384
$P_{g,F}$	0.5443
$P_{i,h}$	0.7726
$P'_{s,t}$	0.2817
$P'_{C',s}$	0.5833
$P'_{d,C'}$	0.2536
$P'_{e,d}$	0.2364
$P'_{g,F'}$	0.4832
$P'_{i,h}$	0.7661

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0204
$\Delta P_{C,s}$	0.0099
$\Delta P_{F,e}$	-0.0024
$\Delta P_{g,F}$	-0.0079
$\Delta P_{i,g}$	-0.0423

Constants of Dispersion Formula	
$B_1$	1.26661442
$B_2$	0.665919318
$B_3$	1.1249612
$C_1$	0.00589278062
$C_2$	0.0197509041
$C_3$	78.8894174

Constants of Dispersion $dn/dT$	
$D_0$	$1.96 \cdot 10^{-6}$
$D_1$	$9.65 \cdot 10^{-9}$
$D_2$	$4.40 \cdot 10^{-12}$
$E_0$	$4.91 \cdot 10^{-7}$
$E_1$	$5.28 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.161

Color Code	
$\lambda_{80}/\lambda_5$	37/28
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.9
$T_g [^\circ C]$	668
$T_{10}^{13.0} [^\circ C]$	668
$T_{10}^{7.6} [^\circ C]$	740
$c_p [J/(g \cdot K)]$	0.520
$\lambda [W/(m \cdot K)]$	0.820
$\rho [g/cm^3]$	4.02
$E [10^3 N/mm^2]$	117
$\mu$	0.290
$K [10^{-6} mm^2/N]$	1.52
$HK_{0.1/20}$	740
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	52.3
<b>AR</b>	1
<b>PR</b>	3.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.1	3.9	4.6	0.8	1.5	2.2
+20/ +40	3.0	3.8	4.6	1.5	2.3	3.1
+60/ +80	3.1	4.0	4.9	2.0	2.9	3.7

## P-LAK35 693532.385

$n_d = 1.69350$	$v_d = 53.20$	$n_F - n_C = 0.013036$
$n_e = 1.69661$	$v_e = 52.95$	$n_{F'} - n_{C'} = 0.013156$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.65762
$n_{1970.1}$	1970.1	1.66411
$n_{1529.6}$	1529.6	1.67100
$n_{1060.0}$	1060.0	1.67824
$n_t$	1014.0	1.67909
$n_s$	852.1	1.68264
$n_r$	706.5	1.68732
$n_C$	656.3	1.68955
$n_{C'}$	643.8	1.69018
$n_{632.8}$	632.8	1.69077
$n_D$	589.3	1.69338
$n_d$	587.6	1.69350
$n_e$	546.1	1.69661
$n_F$	486.1	1.70259
$n_{F'}$	480.0	1.70334
$n_g$	435.8	1.70974
$n_h$	404.7	1.71569
$n_i$	365.0	1.72590
$n_{334.1}$	334.1	1.73698
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.3932426
$B_2$	0.418882766
$B_3$	1.043807
$C_1$	0.00715959695
$C_2$	0.0233637446
$C_3$	88.3284426

Constants of Dispersion $dn/dT$	
$D_0$	$-1.90 \cdot 10^{-6}$
$D_1$	$7.99 \cdot 10^{-9}$
$D_2$	$7.76 \cdot 10^{-12}$
$E_0$	$5.64 \cdot 10^{-7}$
$E_1$	$6.57 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.185

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.1	1.9	2.7	-1.2	-0.4	0.3
+20/ +40	0.8	1.7	2.6	-0.7	0.2	1.1
+60/ +80	0.9	1.9	2.9	-0.3	0.7	1.7

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.546	0.220
2325	0.758	0.500
1970	0.946	0.870
1530	0.992	0.981
1060	0.999	0.999
700	0.997	0.993
660	0.997	0.992
620	0.997	0.992
580	0.997	0.993
546	0.998	0.994
500	0.997	0.992
460	0.994	0.985
436	0.992	0.980
420	0.991	0.977
405	0.989	0.973
400	0.988	0.970
390	0.984	0.960
380	0.976	0.940
370	0.962	0.907
365	0.950	0.880
350	0.887	0.740
334	0.746	0.480
320	0.536	0.210
310	0.353	0.060
300	0.158	0.005
290	0.026	
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	36/29
(* = $\lambda_{70} / \lambda_5$ )	

Remarks
suitable for precision molding

Relative Partial Dispersion	
$P_{s,t}$	0.2723
$P_{C,s}$	0.5304
$P_{d,C}$	0.3028
$P_{e,d}$	0.2383
$P_{g,F}$	0.5482
$P_{i,h}$	0.7832
$P'_{s,t}$	0.2698
$P'_{C',s}$	0.5732
$P'_{d,C'}$	0.2524
$P'_{e,d}$	0.2361
$P'_{g,F'}$	0.4864
$P'_{i,h}$	0.7761

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0053
$\Delta P_{C,s}$	0.0034
$\Delta P_{F,e}$	-0.0015
$\Delta P_{g,F}$	-0.0061
$\Delta P_{i,g}$	-0.0379

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6} / K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6} / K]$	9.7
$T_g [^\circ C]$	508
$T_{10}^{13.0} [^\circ C]$	511
$T_{10}^{7.6} [^\circ C]$	598
$c_p [J/(g \cdot K)]$	0.630
$\lambda [W/(m \cdot K)]$	0.720
AT [°C]	544
$\rho [g/cm^3]$	3.85
$E [10^3 N/mm^2]$	101
$\mu$	0.289
$K [10^{-6} mm^2/N]$	1.76
HK <sub>0.1/20</sub>	616
HG	
Abrasion Aa	119
CR	2
FR	5
SR	53.3
AR	1.3
PR	4.3
SR-J	4
WR-J	3



**LLF1**  
**548458.294**

$n_d = 1.54814$	$v_d = 45.75$	$n_F - n_C = 0.011981$
$n_e = 1.55099$	$v_e = 45.47$	$n_{F'} - n_{C'} = 0.012118$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.51865
$n_{1970.1}$	1970.1	1.52354
$n_{1529.6}$	1529.6	1.52884
$n_{1060.0}$	1060.0	1.53470
$n_t$	1014.0	1.53541
$n_s$	852.1	1.53845
$n_r$	706.5	1.54256
$n_C$	656.3	1.54457
$n_{C'}$	643.8	1.54513
$n_{632.8}$	632.8	1.54566
$n_D$	589.3	1.54803
$n_d$	587.6	1.54814
$n_e$	546.1	1.55099
$n_F$	486.1	1.55655
$n_{F'}$	480.0	1.55725
$n_g$	435.8	1.56333
$n_h$	404.7	1.56911
$n_i$	365.0	1.57932
$n_{334.1}$	334.1	1.59092
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.758	0.500
2325	0.821	0.610
1970	0.933	0.840
1530	0.996	0.990
1060	0.998	0.996
700	0.999	0.997
660	0.998	0.996
620	0.998	0.996
580	0.999	0.997
546	0.999	0.997
500	0.998	0.996
460	0.998	0.996
436	0.998	0.996
420	0.998	0.995
405	0.998	0.994
400	0.997	0.993
390	0.997	0.992
380	0.995	0.988
370	0.994	0.984
365	0.992	0.981
350	0.982	0.955
334	0.919	0.810
320	0.618	0.300
310	0.240	0.010
300	0.024	
290	0.002	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2537
$P_{C,s}$	0.5108
$P_{d,C}$	0.2983
$P_{e,d}$	0.2376
$P_{g,F}$	0.5660
$P_{i,h}$	0.8520
$P'_{s,t}$	0.2508
$P'_{C',s}$	0.5516
$P'_{d,C'}$	0.2484
$P'_{e,d}$	0.2349
$P'_{g,F'}$	0.5017
$P'_{i,h}$	0.8424

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0025
$\Delta P_{C,s}$	0.0012
$\Delta P_{F,e}$	-0.0003
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	-0.0062

Constants of Dispersion Formula	
$B_1$	1.21640125
$B_2$	0.13366454
$B_3$	0.883399468
$C_1$	0.00857807248
$C_2$	0.0420143003
$C_3$	107.59306

Constants of Dispersion $dn/dT$	
$D_0$	$3.25 \cdot 10^{-7}$
$D_1$	$1.74 \cdot 10^{-8}$
$D_2$	$-6.12 \cdot 10^{-11}$
$E_0$	$6.53 \cdot 10^{-7}$
$E_1$	$2.58 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.233

Color Code	
$\lambda_{80}/\lambda_5$	33/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	431
$T_{10}^{13.0} [^\circ C]$	426
$T_{10}^{7.6} [^\circ C]$	628
$c_p [J/(g \cdot K)]$	0.650
$\lambda [W/(m \cdot K)]$	0.990
$\rho [g/cm^3]$	2.94
$E [10^3 N/mm^2]$	60
$\mu$	0.208
$K [10^{-6} mm^2/N]$	3.05
$HK_{0.1/20}$	450
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.5	2.4	3.4	-0.6	0.3	1.3
+20/ +40	1.9	2.9	3.9	0.6	1.5	2.5
+60/ +80	2.0	3.0	4.1	1.0	2.0	3.0

LLF1HTi  
548459.294

$n_d = 1.54815$	$v_d = 45.90$	$n_F - n_C = 0.011942$
$n_e = 1.55099$	$v_e = 45.62$	$n_F' - n_C' = 0.012078$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.51863
$n_{1970.1}$	1970.1	1.52354
$n_{1529.6}$	1529.6	1.52886
$n_{1060.0}$	1060.0	1.53473
$n_t$	1014.0	1.53544
$n_s$	852.1	1.53848
$n_r$	706.5	1.54259
$n_C$	656.3	1.54459
$n_{C'}$	643.8	1.54515
$n_{632.8}$	632.8	1.54568
$n_D$	589.3	1.54804
$n_d$	587.6	1.54815
$n_e$	546.1	1.55099
$n_F$	486.1	1.55653
$n_{F'}$	480.0	1.55723
$n_g$	435.8	1.56328
$n_h$	404.7	1.56904
$n_i$	365.0	1.57920
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.22510445
$B_2$	0.125155671
$B_3$	0.892236751
$C_1$	0.00870432098
$C_2$	0.0427325235
$C_3$	108.049968

Constants of Dispersion dn/dT	
$D_0$	$2.55 \cdot 10^{-7}$
$D_1$	$1.41 \cdot 10^{-8}$
$D_2$	$-3.32 \cdot 10^{-11}$
$E_0$	$6.74 \cdot 10^{-7}$
$E_1$	$6.27 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.227

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	1.7	2.6	3.5	-0.4	0.5	1.4
+20/ +40	1.8	2.9	3.9	0.5	1.5	2.5
+60/ +80	2.0	3.1	4.2	0.9	2.0	3.1

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.744	0.477
2325	0.804	0.579
1970	0.930	0.833
1530	0.996	0.990
1060	0.999	0.999
700	0.999	0.999
660	0.999	0.998
620	0.999	0.998
580	0.999	0.998
546	0.999	0.998
500	0.999	0.998
460	0.999	0.998
436	0.999	0.997
420	0.999	0.997
405	0.999	0.997
400	0.999	0.997
390	0.998	0.996
380	0.998	0.995
370	0.998	0.994
365	0.997	0.993
350	0.993	0.982
334	0.955	0.892
320	0.721	0.441
310	0.231	0.026
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80}/\lambda_5$	33/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
i-line glass	

Relative Partial Dispersion	
$P_{s,t}$	0.2544
$P_{C,s}$	0.5114
$P_{d,C}$	0.2985
$P_{e,d}$	0.2376
$P_{g,F}$	0.5656
$P_{i,h}$	0.8512
$P'_{s,t}$	0.2515
$P'_{C',s}$	0.5523
$P'_{d,C'}$	0.2485
$P'_{e,d}$	0.2349
$P'_{g,F'}$	0.5014
$P'_{i,h}$	0.8416

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0031
$\Delta P_{C,s}$	0.0015
$\Delta P_{F,e}$	-0.0003
$\Delta P_{g,F}$	-0.0010
$\Delta P_{i,g}$	-0.0062

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g$ [°C]	431
$T_{10}^{13.0}$ [°C]	426
$T_{10}^{7.6}$ [°C]	628
$c_p$ [J/(g·K)]	0.650
$\lambda$ [W/(m·K)]	0.990
$\rho$ [g/cm <sup>3</sup> ]	2.94
$E$ [10 <sup>3</sup> N/mm <sup>2</sup> ]	60
$\mu$	0.208
$K$ [10 <sup>-6</sup> mm <sup>2</sup> /N]	3.05
$HK_{0.1/20}$	450
HG	
CR	1
FR	0
SR	1
AR	2
PR	1

**LF5**  
**581409.322**

$n_d = 1.58144$	$v_d = 40.85$	$n_F - n_C = 0.014233$
$n_e = 1.58482$	$v_e = 40.57$	$n_{F'} - n_{C'} = 0.014413$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54966
$n_{1970.1}$	1970.1	1.55445
$n_{1529.6}$	1529.6	1.55975
$n_{1060.0}$	1060.0	1.56594
$n_t$	1014.0	1.56672
$n_s$	852.1	1.57014
$n_r$	706.5	1.57489
$n_C$	656.3	1.57723
$n_{C'}$	643.8	1.57789
$n_{632.8}$	632.8	1.57851
$n_D$	589.3	1.58132
$n_d$	587.6	1.58144
$n_e$	546.1	1.58482
$n_F$	486.1	1.59146
$n_{F'}$	480.0	1.59231
$n_g$	435.8	1.59964
$n_h$	404.7	1.60668
$n_i$	365.0	1.61926
$n_{334.1}$	334.1	1.63380
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.28035628
$B_2$	0.163505973
$B_3$	0.893930112
$C_1$	0.00929854416
$C_2$	0.0449135769
$C_3$	110.493685

Constants of Dispersion dn/dT	
$D_0$	$-2.27 \cdot 10^{-6}$
$D_1$	$9.71 \cdot 10^{-9}$
$D_2$	$-2.83 \cdot 10^{-11}$
$E_0$	$8.36 \cdot 10^{-7}$
$E_1$	$9.95 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.228

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
<b>2500</b>		
<b>2325</b>	0.847	0.660
<b>1970</b>	0.946	0.870
<b>1530</b>	0.997	0.992
<b>1060</b>	0.999	0.998
<b>700</b>	0.999	0.998
<b>660</b>	0.999	0.998
<b>620</b>	0.999	0.998
<b>580</b>	0.999	0.997
<b>546</b>	0.999	0.997
<b>500</b>	0.998	0.996
<b>460</b>	0.998	0.995
<b>436</b>	0.998	0.994
<b>420</b>	0.997	0.993
<b>405</b>	0.997	0.992
<b>400</b>	0.997	0.992
<b>390</b>	0.994	0.984
<b>380</b>	0.989	0.973
<b>370</b>	0.984	0.961
<b>365</b>	0.981	0.954
<b>350</b>	0.950	0.880
<b>334</b>	0.799	0.570
<b>320</b>	0.320	0.040
<b>310</b>	0.040	
<b>300</b>		
<b>290</b>		
<b>280</b>		
<b>270</b>		
<b>260</b>		
<b>250</b>		

Color Code	
$\lambda_{80}/\lambda_5$	34/31
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
lead containing glass type

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.8	1.9	3.1	-1.3	-0.2	0.9
+20/ +40	0.8	2.0	3.4	-0.6	0.7	2.0
+60/ +80	0.8	2.2	3.7	-0.3	1.1	2.6

Relative Partial Dispersion	
$P_{s,t}$	0.2401
$P_{C,s}$	0.4981
$P_{d,C}$	0.2959
$P_{e,d}$	0.2373
$P_{g,F}$	0.5748
$P_{i,h}$	0.8836
$P'_{s,t}$	0.2371
$P'_{C',s}$	0.5378
$P'_{d,C'}$	0.2462
$P'_{e,d}$	0.2343
$P'_{g,F'}$	0.5091
$P'_{i,h}$	0.8726

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0006
$\Delta P_{C,s}$	0.0000
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0003
$\Delta P_{i,g}$	-0.0037

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.6
$T_g [^\circ C]$	419
$T_{10}^{13.0} [^\circ C]$	411
$T_{10}^{7.6} [^\circ C]$	585
$c_p [J/(g \cdot K)]$	0.657
$\lambda [W/(m \cdot K)]$	0.866
$\rho [g/cm^3]$	3.22
$E [10^3 N/mm^2]$	59
$\mu$	0.223
$K [10^{-6} mm^2/N]$	2.83
$HK_{0.1/20}$	450
<b>HG</b>	2
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2.3
<b>PR</b>	2

## LF5HTi 581409.322

$n_d = 1.58144$	$v_d = 40.89$	$n_F - n_C = 0.014220$
$n_e = 1.58482$	$v_e = 40.61$	$n_{F'} - n_{C'} = 0.014400$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.54970
$n_{1970.1}$	1970.1	1.55448
$n_{1529.6}$	1529.6	1.55978
$n_{1060.0}$	1060.0	1.56596
$n_t$	1014.0	1.56674
$n_s$	852.1	1.57015
$n_r$	706.5	1.57490
$n_C$	656.3	1.57724
$n_{C'}$	643.8	1.57790
$n_{632.8}$	632.8	1.57852
$n_D$	589.3	1.58132
$n_d$	587.6	1.58144
$n_e$	546.1	1.58482
$n_F$	486.1	1.59145
$n_{F'}$	480.0	1.59230
$n_g$	435.8	1.59963
$n_h$	404.7	1.60665
$n_i$	365.0	1.61921
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.777	0.532
2325	0.830	0.628
1970	0.938	0.852
1530	0.996	0.991
1060	0.999	0.999
700	0.999	0.999
660	0.999	0.999
620	0.999	0.999
580	0.999	0.999
546	0.999	0.999
500	0.999	0.998
460	0.999	0.998
436	0.999	0.998
420	0.999	0.997
405	0.999	0.997
400	0.999	0.997
390	0.999	0.996
380	0.998	0.995
370	0.997	0.993
365	0.996	0.991
350	0.985	0.962
334	0.891	0.750
320	0.380	0.089
310	0.020	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2401
$P_{C,s}$	0.4982
$P_{d,C}$	0.2959
$P_{e,d}$	0.2373
$P_{g,F}$	0.5746
$P_{i,h}$	0.8831
$P'_{s,t}$	0.2371
$P'_{C',s}$	0.5380
$P'_{d,C'}$	0.2462
$P'_{e,d}$	0.2343
$P'_{g,F'}$	0.5090
$P'_{i,h}$	0.8721

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0006
$\Delta P_{C,s}$	0.0000
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0004
$\Delta P_{i,g}$	-0.0041

Constants of Dispersion Formula	
$B_1$	1.28552924
$B_2$	0.158357622
$B_3$	0.892175122
$C_1$	0.0093988626
$C_2$	0.0452566659
$C_3$	110.544829

Constants of Dispersion $dn/dT$	
$D_0$	$-2.26 \cdot 10^{-6}$
$D_1$	$1.17 \cdot 10^{-8}$
$D_2$	$-4.14 \cdot 10^{-11}$
$E_0$	$8.24 \cdot 10^{-7}$
$E_1$	$7.78 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.232

Color Code	
$\lambda_{80}/\lambda_5$	33/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
i-line glass	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.6
$T_g [^\circ C]$	419
$T_{10}^{13.0} [^\circ C]$	411
$T_{10}^{7.6} [^\circ C]$	585
$c_p [J/(g \cdot K)]$	0.657
$\lambda [W/(m \cdot K)]$	0.866
$\rho [g/cm^3]$	3.22
$E [10^3 N/mm^2]$	59
$\mu$	0.223
$K [10^{-6} mm^2/N]$	2.83
$HK_{0.1/20}$	450
<b>HG</b>	
<b>CR</b>	2
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2.3
<b>PR</b>	2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.7	1.8	3.0	-1.4	-0.3	0.8
+20/ +40	0.8	2.0	3.4	-0.6	0.7	2.0
+60/ +80	0.8	2.2	3.6	-0.3	1.1	2.5

**F2**  
**620364.360**

$n_d = 1.62004$	$v_d = 36.37$	$n_F - n_C = 0.017050$
$n_e = 1.62408$	$v_e = 36.11$	$n_{F'} - n_{C'} = 0.017284$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58465
$n_{1970.1}$	1970.1	1.58958
$n_{1529.6}$	1529.6	1.59513
$n_{1060.0}$	1060.0	1.60190
$n_t$	1014.0	1.60279
$n_s$	852.1	1.60671
$n_r$	706.5	1.61227
$n_C$	656.3	1.61503
$n_{C'}$	643.8	1.61582
$n_{632.8}$	632.8	1.61656
$n_D$	589.3	1.61989
$n_d$	587.6	1.62004
$n_e$	546.1	1.62408
$n_F$	486.1	1.63208
$n_{F'}$	480.0	1.63310
$n_g$	435.8	1.64202
$n_h$	404.7	1.65064
$n_i$	365.0	1.66623
$n_{334.1}$	334.1	1.68455
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.809	0.589
2325	0.859	0.685
1970	0.949	0.876
1530	0.996	0.989
1060	0.999	0.998
700	0.999	0.998
660	0.999	0.997
620	0.999	0.998
580	0.999	0.998
546	0.999	0.998
500	0.999	0.997
460	0.998	0.994
436	0.997	0.993
420	0.996	0.991
405	0.995	0.987
400	0.994	0.985
390	0.991	0.977
380	0.985	0.963
370	0.975	0.940
365	0.968	0.921
350	0.905	0.780
334	0.537	0.211
320	0.080	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2301
$P_{C,s}$	0.4882
$P_{d,C}$	0.2938
$P_{e,d}$	0.2370
$P_{g,F}$	0.5828
$P_{i,h}$	0.9142
$P'_{s,t}$	0.2270
$P'_{C',s}$	0.5270
$P'_{d,C'}$	0.2443
$P'_{e,d}$	0.2338
$P'_{g,F'}$	0.5159
$P'_{i,h}$	0.9018

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0008
$\Delta P_{C,s}$	0.0005
$\Delta P_{F,e}$	0.0000
$\Delta P_{g,F}$	0.0002
$\Delta P_{i,g}$	0.0006

Constants of Dispersion Formula	
$B_1$	1.34533359
$B_2$	0.209073176
$B_3$	0.937357162
$C_1$	0.00997743871
$C_2$	0.0470450767
$C_3$	111.886764

Color Code	
$\lambda_{80}/\lambda_5$	35/32
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Constants of Dispersion $dn/dT$	
$D_0$	$1.51 \cdot 10^{-6}$
$D_1$	$1.56 \cdot 10^{-8}$
$D_2$	$-2.78 \cdot 10^{-11}$
$E_0$	$9.34 \cdot 10^{-7}$
$E_1$	$1.04 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.25

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	434
$T_{10}^{13.0} [^\circ C]$	430
$T_{10}^{7.6} [^\circ C]$	594
$c_p [J/(g \cdot K)]$	0.557
$\lambda [W/(m \cdot K)]$	0.780
$\rho [g/cm^3]$	3.60
$E [10^3 N/mm^2]$	57
$\mu$	0.220
$K [10^{-6} mm^2/N]$	2.81
$HK_{0.1/20}$	420
$HG$	2
$CR$	1
$FR$	0
$SR$	1
$AR$	2.3
$PR$	1.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel} / \Delta T [10^{-6}/K]$			$\Delta n_{abs} / \Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	3.9	5.5	0.3	1.6	3.2
+20/ +40	2.7	4.4	6.3	1.3	3.0	4.8
+60/ +80	3.0	4.8	6.8	1.9	3.7	5.7

## F2HT 620364.360

$n_d = 1.62004$	$v_d = 36.37$	$n_F - n_C = 0.017050$
$n_e = 1.62408$	$v_e = 36.11$	$n_{F'} - n_{C'} = 0.017284$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58465
$n_{1970.1}$	1970.1	1.58958
$n_{1529.6}$	1529.6	1.59513
$n_{1060.0}$	1060.0	1.60190
$n_t$	1014.0	1.60279
$n_s$	852.1	1.60671
$n_r$	706.5	1.61227
$n_C$	656.3	1.61503
$n_{C'}$	643.8	1.61582
$n_{632.8}$	632.8	1.61656
$n_D$	589.3	1.61989
$n_d$	587.6	1.62004
$n_e$	546.1	1.62408
$n_F$	486.1	1.63208
$n_{F'}$	480.0	1.63310
$n_g$	435.8	1.64202
$n_h$	404.7	1.65064
$n_i$	365.0	1.66623
$n_{334.1}$	334.1	1.68455
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.874	0.714
2325	0.912	0.795
1970	0.968	0.921
1530	0.998	0.994
1060	0.999	0.998
700	0.999	0.998
660	0.999	0.997
620	0.999	0.998
580	0.999	0.998
546	0.999	0.998
500	0.999	0.997
460	0.998	0.995
436	0.998	0.994
420	0.997	0.994
405	0.997	0.992
400	0.996	0.991
390	0.995	0.988
380	0.993	0.982
370	0.988	0.971
365	0.983	0.957
350	0.927	0.828
334	0.565	0.240
320	0.080	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2301
$P_{C,s}$	0.4882
$P_{d,C}$	0.2938
$P_{e,d}$	0.2370
$P_{g,F}$	0.5828
$P_{i,h}$	0.9142
$P'_{s,t}$	0.2270
$P'_{C',s}$	0.5270
$P'_{d,C'}$	0.2443
$P'_{e,d}$	0.2338
$P'_{g,F'}$	0.5159
$P'_{i,h}$	0.9018

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0008
$\Delta P_{C,s}$	0.0005
$\Delta P_{F,e}$	0.0000
$\Delta P_{g,F}$	0.0002
$\Delta P_{i,g}$	0.0006

Constants of Dispersion Formula	
$B_1$	1.34533359
$B_2$	0.209073176
$B_3$	0.937357162
$C_1$	0.00997743871
$C_2$	0.0470450767
$C_3$	111.886764

Constants of Dispersion $dn/dT$	
$D_0$	$1.51 \cdot 10^{-6}$
$D_1$	$1.56 \cdot 10^{-8}$
$D_2$	$-2.78 \cdot 10^{-11}$
$E_0$	$9.34 \cdot 10^{-7}$
$E_1$	$1.04 \cdot 10^{-9}$
$\lambda_{TK}$ [μm]	0.25

Color Code	
$\lambda_{80}/\lambda_5$	35/32
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	8.2
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	9.2
$T_g$ [°C]	434
$T_{10}^{13.0}$ [°C]	430
$T_{10}^{7.6}$ [°C]	594
$c_p$ [J/(g·K)]	0.557
$\lambda$ [W/(m·K)]	0.780
$\rho$ [g/cm <sup>3</sup> ]	3.60
$E$ [ $10^3$ N/mm <sup>2</sup> ]	57
$\mu$	0.220
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.81
$HK_{0.1/20}$	420
$HG$	2
$CR$	1
$FR$	0
$SR$	1
$AR$	2.3
$PR$	1.3

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.4	3.9	5.5	0.3	1.6	3.2
+20/ +40	2.7	4.4	6.3	1.3	3.0	4.8
+60/ +80	3.0	4.8	6.8	1.9	3.7	5.7

**F5**  
**603380.347**

$n_d = 1.60342$	$v_d = 38.03$	$n_F - n_C = 0.015867$
$n_e = 1.60718$	$v_e = 37.77$	$n_{F'} - n_{C'} = 0.016078$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.56934
$n_{1970.1}$	1970.1	1.57427
$n_{1529.6}$	1529.6	1.57979
$n_{1060.0}$	1060.0	1.58636
$n_t$	1014.0	1.58721
$n_s$	852.1	1.59093
$n_r$	706.5	1.59616
$n_C$	656.3	1.59875
$n_{C'}$	643.8	1.59948
$n_{632.8}$	632.8	1.60017
$n_D$	589.3	1.60328
$n_d$	587.6	1.60342
$n_e$	546.1	1.60718
$n_F$	486.1	1.61461
$n_{F'}$	480.0	1.61556
$n_g$	435.8	1.62381
$n_h$	404.7	1.63176
$n_i$	365.0	1.64606
$n_{334.1}$	334.1	1.66276
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.787	0.550
2325	0.842	0.650
1970	0.941	0.860
1530	0.995	0.987
1060	0.999	0.998
700	0.999	0.997
660	0.998	0.996
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.998	0.994
460	0.996	0.991
436	0.996	0.990
420	0.995	0.988
405	0.994	0.985
400	0.993	0.982
390	0.989	0.973
380	0.984	0.960
370	0.971	0.930
365	0.963	0.910
350	0.896	0.760
334	0.618	0.300
320	0.080	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2346
$P_{C,s}$	0.4925
$P_{d,C}$	0.2946
$P_{e,d}$	0.2371
$P_{g,F}$	0.5795
$P_{i,h}$	0.9015
$P'_{s,t}$	0.2315
$P'_{C',s}$	0.5317
$P'_{d,C'}$	0.2451
$P'_{e,d}$	0.2340
$P'_{g,F'}$	0.5131
$P'_{i,h}$	0.8897

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0017
$\Delta P_{C,s}$	0.0009
$\Delta P_{F,e}$	-0.0001
$\Delta P_{g,F}$	-0.0003
$\Delta P_{i,g}$	-0.0028

Constants of Dispersion Formula	
$B_1$	1.3104463
$B_2$	0.19603426
$B_3$	0.96612977
$C_1$	0.00958633048
$C_2$	0.0457627627
$C_3$	115.011883

Color Code	
$\lambda_{80}/\lambda_5$	35/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Constants of Dispersion $dn/dT$	
$D_0$	$2.13 \cdot 10^{-6}$
$D_1$	$1.65 \cdot 10^{-8}$
$D_2$	$-6.98 \cdot 10^{-11}$
$E_0$	$1.02 \cdot 10^{-6}$
$E_1$	$6.56 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.208

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.9
$T_g [^\circ C]$	438
$T_{10}^{13.0} [^\circ C]$	425
$T_{10}^{7.6} [^\circ C]$	608
$c_p [J/(g \cdot K)]$	0.560
$\lambda [W/(m \cdot K)]$	0.880
$\rho [g/cm^3]$	3.47
$E [10^3 N/mm^2]$	58
$\mu$	0.220
$K [10^{-6} mm^2/N]$	2.92
$HK_{0.1/20}$	450
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	2.3
<b>PR</b>	2

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.5	4.0	5.5	0.4	1.8	3.3
+20/ +40	3.0	4.6	6.2	1.6	3.2	4.8
+60/ +80	3.1	4.8	6.5	2.0	3.7	5.4



## N-F2 620364.265

$n_d = 1.62005$	$v_d = 36.43$	$n_F - n_C = 0.017020$
$n_e = 1.62408$	$v_e = 36.16$	$n_{F'} - n_{C'} = 0.017258$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.58136
$n_{1970.1}$	1970.1	1.58744
$n_{1529.6}$	1529.6	1.59410
$n_{1060.0}$	1060.0	1.60167
$n_t$	1014.0	1.60261
$n_s$	852.1	1.60667
$n_r$	706.5	1.61229
$n_C$	656.3	1.61506
$n_{C'}$	643.8	1.61584
$n_{632.8}$	632.8	1.61658
$n_D$	589.3	1.61990
$n_d$	587.6	1.62005
$n_e$	546.1	1.62408
$n_F$	486.1	1.63208
$n_{F'}$	480.0	1.63310
$n_g$	435.8	1.64209
$n_h$	404.7	1.65087
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.746	0.480
2325	0.837	0.640
1970	0.950	0.880
1530	0.991	0.977
1060	0.998	0.996
700	0.997	0.992
660	0.996	0.990
620	0.996	0.991
580	0.997	0.993
546	0.997	0.992
500	0.994	0.984
460	0.989	0.973
436	0.985	0.963
420	0.980	0.950
405	0.959	0.900
400	0.946	0.870
390	0.891	0.750
380	0.764	0.510
370	0.480	0.160
365	0.276	0.040
350	0.096	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2389
$P_{C,s}$	0.4925
$P_{d,C}$	0.2935
$P_{e,d}$	0.2366
$P_{g,F}$	0.5881
$P_{i,h}$	
$P'_{s,t}$	0.2356
$P'_{C',s}$	0.5312
$P'_{d,C'}$	0.2440
$P'_{e,d}$	0.2334
$P'_{g,F'}$	0.5208
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0137
$\Delta P_{C,s}$	0.0047
$\Delta P_{F,e}$	0.0006
$\Delta P_{g,F}$	0.0056
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.39757037
$B_2$	0.159201403
$B_3$	1.2686543
$C_1$	0.00995906143
$C_2$	0.0546931752
$C_3$	119.248346

Constants of Dispersion $dn/dT$	
$D_0$	$4.62 \cdot 10^{-7}$
$D_1$	$1.17 \cdot 10^{-8}$
$D_2$	$-2.35 \cdot 10^{-11}$
$E_0$	$7.47 \cdot 10^{-7}$
$E_1$	$9.81 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.263

Color Code	
$\lambda_{80}/\lambda_5$	39/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.1
$T_g [^\circ C]$	569
$T_{10}^{13.0} [^\circ C]$	567
$T_{10}^{7.6} [^\circ C]$	686
$c_p [J/(g \cdot K)]$	0.810
$\lambda [W/(m \cdot K)]$	1.050
$\rho [g/cm^3]$	2.65
$E [10^3 N/mm^2]$	82
$\mu$	0.228
$K [10^{-6} mm^2/N]$	3.03
$HK_{0.1/20}$	600
HG	2
CR	1
FR	0
SR	1
AR	1
PR	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.0	3.2	4.6	-0.1	1.0	2.3
+20/ +40	2.1	3.5	5.1	0.7	2.0	3.6
+60/ +80	2.2	3.7	5.5	1.1	2.6	4.4

## N-BASF2 664360.315

$n_d = 1.66446$	$v_d = 36.00$	$n_F - n_C = 0.018457$
$n_e = 1.66883$	$v_e = 35.73$	$n_{F'} - n_{C'} = 0.018720$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.62552
$n_{1970.1}$	1970.1	1.63109
$n_{1529.6}$	1529.6	1.63734
$n_{1060.0}$	1060.0	1.64484
$n_t$	1014.0	1.64581
$n_s$	852.1	1.65007
$n_r$	706.5	1.65607
$n_C$	656.3	1.65905
$n_{C'}$	643.8	1.65990
$n_{632.8}$	632.8	1.66070
$n_D$	589.3	1.66430
$n_d$	587.6	1.66446
$n_e$	546.1	1.66883
$n_F$	486.1	1.67751
$n_{F'}$	480.0	1.67862
$n_g$	435.8	1.68838
$n_h$	404.7	1.69792
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.857	0.680
2325	0.896	0.760
1970	0.971	0.930
1530	0.994	0.985
1060	0.999	0.997
700	0.996	0.990
660	0.994	0.985
620	0.994	0.985
580	0.995	0.987
546	0.994	0.985
500	0.988	0.971
460	0.980	0.951
436	0.971	0.930
420	0.954	0.890
405	0.915	0.800
400	0.891	0.750
390	0.804	0.580
380	0.634	0.320
370	0.325	0.060
365	0.158	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2309
$P_{C,s}$	0.4869
$P_{d,C}$	0.2929
$P_{e,d}$	0.2367
$P_{g,F}$	0.5890
$P_{i,h}$	
$P'_{s,t}$	0.2277
$P'_{C',s}$	0.5253
$P'_{d,C'}$	0.2435
$P'_{e,d}$	0.2333
$P'_{g,F'}$	0.5214
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0021
$\Delta P_{C,s}$	0.0001
$\Delta P_{F,e}$	0.0010
$\Delta P_{g,F}$	0.0057
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.53652081
$B_2$	0.156971102
$B_3$	1.30196815
$C_1$	0.0108435729
$C_2$	0.0562278762
$C_3$	131.3397

Constants of Dispersion $dn/dT$	
$D_0$	$1.89 \cdot 10^{-6}$
$D_1$	$1.22 \cdot 10^{-8}$
$D_2$	$-1.61 \cdot 10^{-11}$
$E_0$	$7.77 \cdot 10^{-7}$
$E_1$	$9.96 \cdot 10^{-10}$
$\lambda_{TK}$ [μm]	0.256

Color Code	
$\lambda_{80}/\lambda_5$	41/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.1
$T_g [^\circ C]$	619
$T_{10}^{13.0} [^\circ C]$	622
$T_{10}^{7.6} [^\circ C]$	766
$c_p [J/(g \cdot K)]$	0.660
$\lambda [W/(m \cdot K)]$	0.940
$\rho [g/cm^3]$	3.15
$E [10^3 N/mm^2]$	84
$\mu$	0.247
$K [10^{-6} mm^2/N]$	3.04
$HK_{0.1/20}$	580
$HG$	3
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.8	4.1	5.6	0.6	1.9	3.3
+20/ +40	2.9	4.4	6.2	1.5	3.0	4.7
+60/ +80	3.1	4.8	6.7	2.0	3.6	5.5

## N-BASF64 704394.320

$n_d = 1.70400$	$v_d = 39.38$	$n_F - n_C = 0.017875$
$n_e = 1.70824$	$v_e = 39.12$	$n_F' - n_C' = 0.018105$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.66373
$n_{1970.1}$	1970.1	1.66988
$n_{1529.6}$	1529.6	1.67667
$n_{1060.0}$	1060.0	1.68453
$n_t$	1014.0	1.68551
$n_s$	852.1	1.68982
$n_r$	706.5	1.69578
$n_C$	656.3	1.69872
$n_{C'}$	643.8	1.69955
$n_{632.8}$	632.8	1.70033
$n_D$	589.3	1.70384
$n_d$	587.6	1.70400
$n_e$	546.1	1.70824
$n_F$	486.1	1.71659
$n_{F'}$	480.0	1.71765
$n_g$	435.8	1.72690
$n_h$	404.7	1.73581
$n_i$	365.0	1.75184
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.727	0.450
2325	0.852	0.670
1970	0.959	0.900
1530	0.988	0.970
1060	0.994	0.985
700	0.988	0.970
660	0.982	0.955
620	0.979	0.949
580	0.979	0.949
546	0.980	0.950
500	0.976	0.940
460	0.967	0.920
436	0.959	0.900
420	0.950	0.880
405	0.933	0.840
400	0.924	0.820
390	0.891	0.750
380	0.821	0.610
370	0.672	0.370
365	0.546	0.220
350	0.090	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2408
$P_{C,s}$	0.4979
$P_{d,C}$	0.2956
$P_{e,d}$	0.2372
$P_{g,F}$	0.5769
$P_{i,h}$	0.8970
$P'_{s,t}$	0.2377
$P'_{C,s}$	0.5375
$P'_{d,C'}$	0.2459
$P'_{e,d}$	0.2342
$P'_{g,F'}$	0.5110
$P'_{i,h}$	0.8856

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0069
$\Delta P_{C,s}$	0.0032
$\Delta P_{F,e}$	-0.0004
$\Delta P_{g,F}$	-0.0006
$\Delta P_{i,g}$	0.0012

Constants of Dispersion Formula	
$B_1$	1.65554268
$B_2$	0.17131977
$B_3$	1.33664448
$C_1$	0.0104485644
$C_2$	0.0499394756
$C_3$	118.961472

Constants of Dispersion $dn/dT$	
$D_0$	$1.60 \cdot 10^{-6}$
$D_1$	$1.02 \cdot 10^{-8}$
$D_2$	$-2.68 \cdot 10^{-11}$
$E_0$	$7.87 \cdot 10^{-7}$
$E_1$	$9.65 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.229

Color Code	
$\lambda_{80}/\lambda_5$	40/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.7
$T_g [^\circ C]$	582
$T_{10}^{13.0} [^\circ C]$	585
$T_{10}^{7.6} [^\circ C]$	712
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	
$\rho [g/cm^3]$	3.20
$E [10^3 N/mm^2]$	105
$\mu$	0.264
$K [10^{-6} mm^2/N]$	2.38
$HK_{0.1/20}$	650
$HG$	4
$CR$	1
$FR$	0
$SR$	3.2
$AR$	1.2
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.8	4.1	5.5	0.6	1.8	3.1
+20/ +40	2.8	4.3	5.9	1.4	2.8	4.4
+60/ +80	2.9	4.5	6.3	1.8	3.4	5.1

## LAFN7 750350.438

$n_d = 1.74950$	$v_d = 34.95$	$n_F - n_C = 0.021445$
$n_e = 1.75458$	$v_e = 34.72$	$n_{F'} - n_{C'} = 0.021735$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70211
$n_{1970.1}$	1970.1	1.70934
$n_{1529.6}$	1529.6	1.71726
$n_{1060.0}$	1060.0	1.72642
$n_t$	1014.0	1.72758
$n_s$	852.1	1.73264
$n_r$	706.5	1.73970
$n_C$	656.3	1.74319
$n_{C'}$	643.8	1.74418
$n_{632.8}$	632.8	1.74511
$n_D$	589.3	1.74931
$n_d$	587.6	1.74950
$n_e$	546.1	1.75458
$n_F$	486.1	1.76464
$n_{F'}$	480.0	1.76592
$n_g$	435.8	1.77713
$n_h$	404.7	1.78798
$n_i$	365.0	1.80762
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.382	0.090
2325	0.700	0.410
1970	0.937	0.850
1530	0.984	0.960
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.998	0.994
500	0.998	0.994
460	0.993	0.982
436	0.986	0.965
420	0.976	0.940
405	0.950	0.880
400	0.937	0.850
390	0.905	0.780
380	0.842	0.650
370	0.693	0.400
365	0.546	0.220
350	0.125	0.010
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2360
$P_{C,s}$	0.4921
$P_{d,C}$	0.2941
$P_{e,d}$	0.2369
$P_{g,F}$	0.5825
$P_{i,h}$	0.9160
$P'_{s,t}$	0.2329
$P'_{C',s}$	0.5311
$P'_{d,C'}$	0.2446
$P'_{e,d}$	0.2338
$P'_{g,F'}$	0.5158
$P'_{i,h}$	0.9037

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0174
$\Delta P_{C,s}$	0.0078
$\Delta P_{F,e}$	-0.0011
$\Delta P_{g,F}$	-0.0025
$\Delta P_{i,g}$	-0.0093

Constants of Dispersion Formula	
$B_1$	1.66842615
$B_2$	0.298512803
$B_3$	1.0774376
$C_1$	0.0103159999
$C_2$	0.0469216348
$C_3$	82.5078509

Constants of Dispersion $dn/dT$	
$D_0$	$7.27 \cdot 10^{-6}$
$D_1$	$1.31 \cdot 10^{-8}$
$D_2$	$-3.32 \cdot 10^{-11}$
$E_0$	$8.88 \cdot 10^{-7}$
$E_1$	$9.32 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.248

Color Code	
$\lambda_{80}/\lambda_5$	40/35
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.4
$T_g [^\circ C]$	500
$T_{10}^{13.0} [^\circ C]$	481
$T_{10}^{7.6} [^\circ C]$	573
$c_p [J/(g \cdot K)]$	
$\lambda [W/(m \cdot K)]$	0.770
$\rho [g/cm^3]$	4.38
$E [10^3 N/mm^2]$	80
$\mu$	0.280
$K [10^{-6} mm^2/N]$	1.77
$HK_{0.1/20}$	520
<b>HG</b>	3
<b>CR</b>	3
<b>FR</b>	1
<b>SR</b>	53.3
<b>AR</b>	2.2
<b>PR</b>	4.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.0	7.8	9.7	3.7	5.4	7.2
+20/ +40	6.3	8.3	10.4	4.8	6.7	8.9
+60/ +80	6.5	8.6	10.9	5.3	7.4	9.7

## N-LAF2 744449.430

$n_d = 1.74397$	$v_d = 44.85$	$n_F - n_C = 0.016588$
$n_e = 1.74791$	$v_e = 44.57$	$n_F' - n_C' = 0.016780$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70582
$n_{1970.1}$	1970.1	1.71169
$n_{1529.6}$	1529.6	1.71816
$n_{1060.0}$	1060.0	1.72563
$n_t$	1014.0	1.72656
$n_s$	852.1	1.73064
$n_r$	706.5	1.73627
$n_C$	656.3	1.73903
$n_{C'}$	643.8	1.73981
$n_{632.8}$	632.8	1.74054
$n_D$	589.3	1.74383
$n_d$	587.6	1.74397
$n_e$	546.1	1.74791
$n_F$	486.1	1.75562
$n_{F'}$	480.0	1.75659
$n_g$	435.8	1.76500
$n_h$	404.7	1.77298
$n_i$	365.0	1.78703
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.693	0.400
2325	0.862	0.690
1970	0.971	0.930
1530	0.996	0.990
1060	0.999	0.997
700	0.998	0.996
660	0.997	0.993
620	0.997	0.992
580	0.997	0.993
546	0.998	0.994
500	0.993	0.983
460	0.985	0.962
436	0.976	0.940
420	0.965	0.915
405	0.944	0.865
400	0.933	0.840
390	0.896	0.760
380	0.831	0.630
370	0.713	0.430
365	0.626	0.310
350	0.229	0.025
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2459
$P_{C,s}$	0.5057
$P_{d,C}$	0.2979
$P_{e,d}$	0.2377
$P_{g,F}$	0.5656
$P_{i,h}$	0.8470
$P'_{s,t}$	0.2431
$P'_{C',s}$	0.5464
$P'_{d,C'}$	0.2481
$P'_{e,d}$	0.2350
$P'_{g,F'}$	0.5012
$P'_{i,h}$	0.8373

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0061
$\Delta P_{C,s}$	-0.0017
$\Delta P_{F,e}$	-0.0004
$\Delta P_{g,F}$	-0.0027
$\Delta P_{i,g}$	-0.0202

Constants of Dispersion Formula	
$B_1$	1.80984227
$B_2$	0.15729555
$B_3$	1.0930037
$C_1$	0.0101711622
$C_2$	0.0442431765
$C_3$	100.687748

Constants of Dispersion $dn/dT$	
$D_0$	$-3.64 \cdot 10^{-6}$
$D_1$	$9.20 \cdot 10^{-9}$
$D_2$	$-6.00 \cdot 10^{-12}$
$E_0$	$6.43 \cdot 10^{-7}$
$E_1$	$6.11 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.22

Color Code	
$\lambda_{80}/\lambda_5$	40/34
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.1
$T_g [^\circ C]$	653
$T_{10}^{13.0} [^\circ C]$	645
$T_{10}^{7.6} [^\circ C]$	742
$c_p [J/(g \cdot K)]$	0.510
$\lambda [W/(m \cdot K)]$	0.670
$\rho [g/cm^3]$	4.30
$E [10^3 N/mm^2]$	94
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.42
$HK_{0.1/20}$	530
<b>HG</b>	6
<b>CR</b>	2
<b>FR</b>	3
<b>SR</b>	52.2
<b>AR</b>	1
<b>PR</b>	2.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.0	1.0	2.1	-2.3	-1.3	-0.3
+20/ +40	-0.1	1.0	2.3	-1.6	-0.5	0.7
+60/ +80	-0.1	1.2	2.5	-1.2	0.0	1.3

**N-LAF7**  
**749348.373**

$n_d = 1.74950$	$v_d = 34.82$	$n_F - n_C = 0.021525$
$n_e = 1.75459$	$v_e = 34.56$	$n_{F'} - n_{C'} = 0.021833$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70344
$n_{1970.1}$	1970.1	1.71021
$n_{1529.6}$	1529.6	1.71772
$n_{1060.0}$	1060.0	1.72659
$n_t$	1014.0	1.72773
$n_s$	852.1	1.73272
$n_r$	706.5	1.73972
$n_C$	656.3	1.74320
$n_{C'}$	643.8	1.74419
$n_{632.8}$	632.8	1.74511
$n_D$	589.3	1.74931
$n_d$	587.6	1.74950
$n_e$	546.1	1.75459
$n_F$	486.1	1.76472
$n_{F'}$	480.0	1.76602
$n_g$	435.8	1.77741
$n_h$	404.7	1.78854
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.679	0.380
2325	0.867	0.700
1970	0.976	0.940
1530	0.996	0.990
1060	0.998	0.996
700	0.997	0.992
660	0.995	0.988
620	0.994	0.985
580	0.992	0.980
546	0.988	0.970
500	0.971	0.930
460	0.937	0.850
436	0.901	0.770
420	0.857	0.680
405	0.782	0.540
400	0.752	0.490
390	0.657	0.350
380	0.515	0.190
370	0.302	0.050
365	0.170	0.012
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2317
$P_{C,s}$	0.4870
$P_{d,C}$	0.2928
$P_{e,d}$	0.2366
$P_{g,F}$	0.5894
$P_{i,h}$	
$P'_{s,t}$	0.2284
$P'_{C',s}$	0.5254
$P'_{d,C'}$	0.2434
$P'_{e,d}$	0.2333
$P'_{g,F'}$	0.5218
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0085
$\Delta P_{C,s}$	0.0029
$\Delta P_{F,e}$	0.0005
$\Delta P_{g,F}$	0.0042
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.74028764
$B_2$	0.226710554
$B_3$	1.32525548
$C_1$	0.010792558
$C_2$	0.0538626639
$C_3$	106.268665

Constants of Dispersion $dn/dT$	
$D_0$	$9.21 \cdot 10^{-7}$
$D_1$	$1.10 \cdot 10^{-8}$
$D_2$	$-1.75 \cdot 10^{-11}$
$E_0$	$7.67 \cdot 10^{-7}$
$E_1$	$1.10 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.264

Color Code	
$\lambda_{80}/\lambda_5$	46/36
( $*$ = $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.4
$T_g [^\circ C]$	568
$T_{10}^{13.0} [^\circ C]$	563
$T_{10}^{7.6} [^\circ C]$	669
$c_p [J/(g \cdot K)]$	0.620
$\lambda [W/(m \cdot K)]$	0.830
$\rho [g/cm^3]$	3.73
$E [10^3 N/mm^2]$	96
$\mu$	0.271
$K [10^{-6} mm^2/N]$	2.57
$HK_{0.1/20}$	530
<b>HG</b>	5
<b>CR</b>	1
<b>FR</b>	2
<b>SR</b>	51.3
<b>AR</b>	1.2
<b>PR</b>	1.2

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.5	3.9	5.6	0.2	1.5	3.1
+20/ +40	2.6	4.3	6.3	1.1	2.7	4.7
+60/ +80	2.7	4.6	6.8	1.6	3.4	5.6

## N-LAF21 788475.428

$n_d = 1.78800$	$v_d = 47.49$	$n_F - n_C = 0.016593$
$n_e = 1.79195$	$v_e = 47.25$	$n_{F'} - n_{C'} = 0.016761$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.74419
$n_{1970.1}$	1970.1	1.75191
$n_{1529.6}$	1529.6	1.76014
$n_{1060.0}$	1060.0	1.76892
$n_t$	1014.0	1.76995
$n_s$	852.1	1.77434
$n_r$	706.5	1.78019
$n_C$	656.3	1.78301
$n_{C'}$	643.8	1.78380
$n_{632.8}$	632.8	1.78454
$n_D$	589.3	1.78785
$n_d$	587.6	1.78800
$n_e$	546.1	1.79195
$n_F$	486.1	1.79960
$n_{F'}$	480.0	1.80056
$n_g$	435.8	1.80882
$n_h$	404.7	1.81657
$n_i$	365.0	1.83002
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.430	0.121
2325	0.713	0.429
1970	0.942	0.862
1530	0.988	0.971
1060	0.998	0.996
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.997	0.992
546	0.997	0.993
500	0.996	0.989
460	0.990	0.976
436	0.985	0.964
420	0.981	0.952
405	0.971	0.928
400	0.966	0.916
390	0.949	0.878
380	0.921	0.814
370	0.870	0.707
365	0.833	0.634
350	0.644	0.333
334	0.276	0.040
320	0.030	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2646
$P_{C,s}$	0.5222
$P_{d,C}$	0.3009
$P_{e,d}$	0.2380
$P_{g,F}$	0.5555
$P_{i,h}$	0.8106
$P'_{s,t}$	0.2619
$P'_{C',s}$	0.5641
$P'_{d,C'}$	0.2507
$P'_{e,d}$	0.2356
$P'_{g,F'}$	0.4927
$P'_{i,h}$	0.8025

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0165
$\Delta P_{C,s}$	0.0086
$\Delta P_{F,e}$	-0.0024
$\Delta P_{g,F}$	-0.0084
$\Delta P_{i,g}$	-0.0481

Constants of Dispersion Formula	
$B_1$	1.87134529
$B_2$	0.25078301
$B_3$	1.22048639
$C_1$	0.0093332228
$C_2$	0.0345637762
$C_3$	83.2404866

Color Code	
$\lambda_{80}/\lambda_5$	39/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Constants of Dispersion $dn/dT$	
$D_0$	$3.11 \cdot 10^{-6}$
$D_1$	$1.13 \cdot 10^{-8}$
$D_2$	$-2.07 \cdot 10^{-11}$
$E_0$	$5.88 \cdot 10^{-7}$
$E_1$	$6.32 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.199

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.1
$T_g [^\circ C]$	653
$T_{10}^{13.0} [^\circ C]$	659
$T_{10}^{7.6} [^\circ C]$	729
$c_p [J/(g \cdot K)]$	0.550
$\lambda [W/(m \cdot K)]$	0.830
$\rho [g/cm^3]$	4.28
$E [10^3 N/mm^2]$	124
$\mu$	0.295
$K [10^{-6} mm^2/N]$	1.46
$HK_{0.1/20}$	730
$HG$	2
$CR$	1
$FR$	1
$SR$	51.3
$AR$	1
$PR$	1.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.8	4.8	5.8	1.4	2.4	3.3
+20/ +40	3.9	5.1	6.2	2.3	3.5	4.6
+60/ +80	4.0	5.3	6.5	2.8	4.1	5.3



## N-LAF33 786441.436

$n_d = 1.78582$	$v_d = 44.05$	$n_F - n_C = 0.017839$
$n_e = 1.79007$	$v_e = 43.80$	$n_{F'} - n_{C'} = 0.018038$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.74262
$n_{1970.1}$	1970.1	1.74968
$n_{1529.6}$	1529.6	1.75732
$n_{1060.0}$	1060.0	1.76584
$n_t$	1014.0	1.76689
$n_s$	852.1	1.77138
$n_r$	706.5	1.77751
$n_C$	656.3	1.78049
$n_{C'}$	643.8	1.78134
$n_{632.8}$	632.8	1.78213
$n_D$	589.3	1.78567
$n_d$	587.6	1.78582
$n_e$	546.1	1.79007
$n_F$	486.1	1.79833
$n_{F'}$	480.0	1.79937
$n_g$	435.8	1.80837
$n_h$	404.7	1.81687
$n_i$	365.0	1.83175
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.473	0.154
2325	0.744	0.478
1970	0.945	0.868
1530	0.990	0.974
1060	0.999	0.998
700	0.998	0.996
660	0.998	0.995
620	0.998	0.994
580	0.998	0.994
546	0.998	0.994
500	0.995	0.988
460	0.989	0.973
436	0.983	0.959
420	0.978	0.946
405	0.968	0.922
400	0.963	0.910
390	0.948	0.874
380	0.921	0.813
370	0.874	0.714
365	0.841	0.648
350	0.692	0.399
334	0.382	0.090
320	0.076	0.002
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2520
$P_{C,s}$	0.5107
$P_{d,C}$	0.2988
$P_{e,d}$	0.2378
$P_{g,F}$	0.5626
$P_{i,h}$	0.8339
$P'_{s,t}$	0.2492
$P'_{C',s}$	0.5518
$P'_{d,C'}$	0.2488
$P'_{e,d}$	0.2351
$P'_{g,F'}$	0.4987
$P'_{i,h}$	0.8247

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0088
$\Delta P_{C,s}$	0.0052
$\Delta P_{F,e}$	-0.0018
$\Delta P_{g,F}$	-0.0071
$\Delta P_{i,g}$	-0.0443

Constants of Dispersion Formula	
$B_1$	1.79653417
$B_2$	0.311577903
$B_3$	1.15981863
$C_1$	0.00927313493
$C_2$	0.0358201181
$C_3$	87.3448712

Constants of Dispersion $dn/dT$	
$D_0$	$8.17 \cdot 10^{-6}$
$D_1$	$1.24 \cdot 10^{-8}$
$D_2$	$-1.65 \cdot 10^{-11}$
$E_0$	$7.11 \cdot 10^{-7}$
$E_1$	$8.59 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.21

Color Code	
$\lambda_{80}/\lambda_5$	39/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.7
$T_g [^\circ C]$	600
$T_{10}^{13.0} [^\circ C]$	585
$T_{10}^{7.6} [^\circ C]$	673
$c_p [J/(g \cdot K)]$	0.570
$\lambda [W/(m \cdot K)]$	0.800
$AT [^\circ C]$	628
$\rho [g/cm^3]$	4.36
$E [10^3 N/mm^2]$	111
$\mu$	0.301
$K [10^{-6} mm^2/N]$	2.21
$HK_{0.1/20}$	730
$HG$	1
$Abrasion Aa$	67
$CR$	1
$FR$	2
$SR$	52.2
$AR$	1
$PR$	3
$SR-J$	6
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.8	8.1	9.4	4.4	5.7	7.0
+20/ +40	7.0	8.5	10.0	5.5	6.9	8.4
+60/ +80	7.2	8.9	10.5	6.0	7.6	9.3

## N-LAF34 773496.424

$n_d = 1.77250$	$v_d = 49.62$	$n_F - n_C = 0.015568$
$n_e = 1.77621$	$v_e = 49.38$	$n_{F'} - n_{C'} = 0.015719$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.73085
$n_{1970.1}$	1970.1	1.73824
$n_{1529.6}$	1529.6	1.74610
$n_{1060.0}$	1060.0	1.75447
$n_t$	1014.0	1.75546
$n_s$	852.1	1.75962
$n_r$	706.5	1.76515
$n_C$	656.3	1.76780
$n_{C'}$	643.8	1.76855
$n_{632.8}$	632.8	1.76924
$n_D$	589.3	1.77236
$n_d$	587.6	1.77250
$n_e$	546.1	1.77621
$n_F$	486.1	1.78337
$n_{F'}$	480.0	1.78427
$n_g$	435.8	1.79196
$n_h$	404.7	1.79915
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.454	0.139
2325	0.726	0.449
1970	0.945	0.868
1530	0.989	0.973
1060	0.999	0.998
700	0.998	0.996
660	0.998	0.996
620	0.998	0.995
580	0.998	0.995
546	0.998	0.996
500	0.997	0.993
460	0.994	0.986
436	0.991	0.978
420	0.988	0.971
405	0.983	0.958
400	0.980	0.950
390	0.971	0.929
380	0.955	0.891
370	0.927	0.828
365	0.908	0.785
350	0.815	0.600
334	0.643	0.332
320	0.424	0.117
310	0.236	0.027
300	0.069	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2674
$P_{C,s}$	0.5256
$P_{d,C}$	0.3018
$P_{e,d}$	0.2382
$P_{g,F}$	0.5518
$P_{i,h}$	
$P'_{s,t}$	0.2648
$P'_{C',s}$	0.5679
$P'_{d,C'}$	0.2515
$P'_{e,d}$	0.2359
$P'_{g,F'}$	0.4895
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0126
$\Delta P_{C,s}$	0.0070
$\Delta P_{F,e}$	-0.0023
$\Delta P_{g,F}$	-0.0085
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.75836958
$B_2$	0.313537785
$B_3$	1.18925231
$C_1$	0.00872810026
$C_2$	0.0293020832
$C_3$	85.1780644

Color Code	
$\lambda_{80}/\lambda_5$	38/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks

Constants of Dispersion dn/dT	
$D_0$	$3.89 \cdot 10^{-6}$
$D_1$	$1.02 \cdot 10^{-8}$
$D_2$	$-1.91 \cdot 10^{-11}$
$E_0$	$5.88 \cdot 10^{-7}$
$E_1$	$7.57 \cdot 10^{-10}$
$\lambda_{TK}[\mu m]$	0.181

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.0
$T_g [^\circ C]$	668
$T_{10}^{13.0} [^\circ C]$	659
$T_{10}^{7.6} [^\circ C]$	745
$c_p [J/(g \cdot K)]$	0.560
$\lambda [W/(m \cdot K)]$	0.800
$\rho [g/cm^3]$	4.24
$E [10^3 N/mm^2]$	123
$\mu$	0.292
$K [10^{-6} mm^2/N]$	1.44
$HK_{0.1/20}$	770
HG	2
CR	1
FR	1
SR	51.3
AR	1
PR	1

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/-20	4.2	5.2	6.2	1.9	2.8	3.7
+20/+40	4.3	5.4	6.5	2.7	3.9	4.9
+60/+80	4.4	5.6	6.8	3.2	4.4	5.5

## N-LAF35 743494.412

$n_d = 1.74330$	$v_d = 49.40$	$n_F - n_C = 0.015047$
$n_e = 1.74688$	$v_e = 49.16$	$n_{F'} - n_{C'} = 0.015194$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	
$n_{1970.1}$	1970.1	
$n_{1529.6}$	1529.6	
$n_{1060.0}$	1060.0	1.72588
$n_t$	1014.0	1.72683
$n_s$	852.1	1.73086
$n_r$	706.5	1.73620
$n_C$	656.3	1.73876
$n_{C'}$	643.8	1.73948
$n_{632.8}$	632.8	1.74015
$n_D$	589.3	1.74317
$n_d$	587.6	1.74330
$n_e$	546.1	1.74688
$n_F$	486.1	1.75381
$n_{F'}$	480.0	1.75467
$n_g$	435.8	1.76212
$n_h$	404.7	1.76908
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.51697436
$B_2$	0.455875464
$B_3$	1.07469242
$C_1$	0.00750943203
$C_2$	0.0260046715
$C_3$	80.5945159

Constants of Dispersion dn/dT	
$D_0$	$8.98 \cdot 10^{-6}$
$D_1$	$1.26 \cdot 10^{-8}$
$D_2$	$-1.23 \cdot 10^{-11}$
$E_0$	$6.24 \cdot 10^{-7}$
$E_1$	$6.86 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.194

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	7.0	8.1	9.2	4.7	5.7	6.7
+20/ +40	7.1	8.4	9.6	5.6	6.9	8.0
+60/ +80	7.3	8.7	10.0	6.2	7.5	8.8

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.398	0.100
2325	0.713	0.430
1970	0.937	0.850
1530	0.988	0.970
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.996
620	0.998	0.994
580	0.998	0.994
546	0.998	0.995
500	0.997	0.992
460	0.994	0.985
436	0.990	0.976
420	0.987	0.967
405	0.980	0.950
400	0.976	0.940
390	0.966	0.920
380	0.948	0.880
370	0.918	0.810
365	0.898	0.760
350	0.788	0.550
334	0.592	0.270
320	0.348	0.200
310	0.152	0.080
300	0.026	
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80}/\lambda_5$	38/30
(* = $\lambda_{70}/\lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2674
$P_{C,s}$	0.5253
$P_{d,C}$	0.3017
$P_{e,d}$	0.2381
$P_{g,F}$	0.5523
$P_{i,h}$	
$P'_{s,t}$	0.2648
$P'_{C,s}$	0.5676
$P'_{d,C'}$	0.2514
$P'_{e,d}$	0.2358
$P'_{g,F'}$	0.4899
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0134
$\Delta P_{C,s}$	0.0072
$\Delta P_{F,e}$	-0.0022
$\Delta P_{g,F}$	-0.0084
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.4
$T_g [^\circ C]$	589
$T_{10}^{13.0} [^\circ C]$	585
$T_{10}^{7.6} [^\circ C]$	669
$c_p [J/(g \cdot K)]$	0.570
$\lambda [W/(m \cdot K)]$	0.800
$\rho [g/cm^3]$	4.12
$E [10^3 N/mm^2]$	109
$\mu$	0.301
$K [10^{-6} mm^2/N]$	2.29
$HK_{0.1/20}$	660
HG	2
CR	2
FR	1
SR	52.3
AR	1
PR	3.3

## P-LAF37 755457.399

$n_d = 1.75550$	$v_d = 45.66$	$n_F - n_C = 0.016546$
$n_e = 1.75944$	$v_e = 45.42$	$n_{F'} - n_{C'} = 0.016722$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.71338
$n_{1970.1}$	1970.1	1.72058
$n_{1529.6}$	1529.6	1.72830
$n_{1060.0}$	1060.0	1.73669
$n_t$	1014.0	1.73770
$n_s$	852.1	1.74198
$n_r$	706.5	1.74775
$n_C$	656.3	1.75054
$n_{C'}$	643.8	1.75132
$n_{632.8}$	632.8	1.75206
$n_D$	589.3	1.75535
$n_d$	587.6	1.75550
$n_e$	546.1	1.75944
$n_F$	486.1	1.76708
$n_{F'}$	480.0	1.76804
$n_g$	435.8	1.77633
$n_h$	404.7	1.78414
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.480	0.160
2325	0.752	0.490
1970	0.946	0.870
1530	0.990	0.976
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.995
620	0.998	0.994
580	0.998	0.994
546	0.998	0.994
500	0.996	0.991
460	0.993	0.983
436	0.990	0.975
420	0.987	0.967
405	0.982	0.955
400	0.980	0.950
390	0.971	0.930
380	0.959	0.900
370	0.935	0.845
365	0.919	0.810
350	0.837	0.640
334	0.650	0.340
320	0.276	0.040
310	0.040	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2591
$P_{C,s}$	0.5170
$P_{d,C}$	0.2999
$P_{e,d}$	0.2379
$P_{g,F}$	0.5590
$P_{i,h}$	
$P'_{s,t}$	0.2563
$P'_{C',s}$	0.5585
$P'_{d,C'}$	0.2498
$P'_{e,d}$	0.2354
$P'_{g,F'}$	0.4957
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0145
$\Delta P_{C,s}$	0.0077
$\Delta P_{F,e}$	-0.0022
$\Delta P_{g,F}$	-0.0080
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.76003244
$B_2$	0.248286745
$B_3$	1.15935122
$C_1$	0.00938006396
$C_2$	0.0360537464
$C_3$	86.4324693

Constants of Dispersion $dn/dT$	
$D_0$	
$D_1$	
$D_2$	
$E_0$	
$E_1$	
$\lambda_{TK}$ [ $\mu\text{m}$ ]	

Color Code	
$\lambda_{80}/\lambda_5$	37/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	6.3
$\alpha_{+20/+300^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	7.8
$T_g$ [ $^\circ\text{C}$ ]	506
$T_{10}^{13.0}$ [ $^\circ\text{C}$ ]	510
$T_{10}^{7.6}$ [ $^\circ\text{C}$ ]	593
$c_p$ [ $\text{J}/(\text{g}\cdot\text{K})$ ]	0.640
$\lambda$ [ $\text{W}/(\text{m}\cdot\text{K})$ ]	0.900
$AT$ [ $^\circ\text{C}$ ]	546
$\rho$ [ $\text{g}/\text{cm}^3$ ]	3.99
$E$ [ $10^3 \text{N}/\text{mm}^2$ ]	115
$\mu$	0.296
$K$ [ $10^{-6} \text{mm}^2/\text{N}$ ]	2.26
$HK_{0.1/20}$	697
$HG$	
$Abrasion Aa$	67
$CR$	
$FR$	
$SR$	
$AR$	
$PR$	
$SR-J$	4
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/\text{K}$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/\text{K}$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20						
+20/ +40						
+60/ +80						

## LASF35 022291.541

$n_d = 2.02204$	$v_d = 29.06$	$n_F - n_C = 0.035170$
$n_e = 2.03035$	$v_e = 28.84$	$n_{F'} - n_{C'} = 0.035721$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.95946
$n_{1970.1}$	1970.1	1.96639
$n_{1529.6}$	1529.6	1.97472
$n_{1060.0}$	1060.0	1.98624
$n_t$	1014.0	1.98786
$n_s$	852.1	1.99531
$n_r$	706.5	2.00628
$n_C$	656.3	2.01185
$n_{C'}$	643.8	2.01343
$n_{632.8}$	632.8	2.01493
$n_D$	589.3	2.02173
$n_d$	587.6	2.02204
$n_e$	546.1	2.03035
$n_F$	486.1	2.04702
$n_{F'}$	480.0	2.04916
$n_g$	435.8	2.06805
$n_h$	404.7	2.08663
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.787	0.550
2325	0.877	0.720
1970	0.973	0.934
1530	0.995	0.987
1060	0.998	0.994
700	0.992	0.981
660	0.990	0.974
620	0.987	0.969
580	0.985	0.962
546	0.977	0.943
500	0.948	0.874
460	0.903	0.774
436	0.852	0.670
420	0.787	0.550
405	0.686	0.390
400	0.634	0.320
390	0.504	0.180
380	0.302	0.050
370	0.100	
365	0.030	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2118
$P_{C,s}$	0.4701
$P_{d,C}$	0.2899
$P_{e,d}$	0.2364
$P_{g,F}$	0.5982
$P_{i,h}$	
$P'_{s,t}$	0.2086
$P'_{C',s}$	0.5073
$P'_{d,C'}$	0.2409
$P'_{e,d}$	0.2327
$P'_{g,F'}$	0.5291
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0009
$\Delta P_{C,s}$	-0.0006
$\Delta P_{F,e}$	0.0006
$\Delta P_{g,F}$	0.0033
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.45505861
$B_2$	0.453006077
$B_3$	2.3851308
$C_1$	0.0135670404
$C_2$	0.054580302
$C_3$	167.904715

Constants of Dispersion $dn/dT$	
$D_0$	$1.43 \cdot 10^{-7}$
$D_1$	$8.71 \cdot 10^{-9}$
$D_2$	$-2.71 \cdot 10^{-11}$
$E_0$	$1.02 \cdot 10^{-6}$
$E_1$	$1.50 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.263

Color Code	
$\lambda_{80}/\lambda_5$	45/37*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.5
$T_g [^\circ C]$	774
$T_{10}^{13.0} [^\circ C]$	0
$T_{10}^{7.6} [^\circ C]$	0
$c_p [J/(g \cdot K)]$	0.445
$\lambda [W/(m \cdot K)]$	0.920
$\rho [g/cm^3]$	5.41
$E [10^3 N/mm^2]$	132
$\mu$	0.303
$K [10^{-6} mm^2/N]$	0.73
$HK_{0.1/20}$	810
$HG$	1
$CR$	1
$FR$	0
$SR$	1.3
$AR$	1
$PR$	1.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.6	5.0	7.8	-0.1	2.2	5.0
+20/ +40	2.7	5.5	9.0	1.0	3.8	7.1
+60/ +80	2.8	5.9	9.7	1.4	4.5	8.3

## N-LASF9 850322.441

$n_d = 1.85025$	$v_d = 32.17$	$n_F - n_C = 0.026430$
$n_e = 1.85650$	$v_e = 31.93$	$n_{F'} - n_{C'} = 0.026827$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.80058
$n_{1970.1}$	1970.1	1.80659
$n_{1529.6}$	1529.6	1.81364
$n_{1060.0}$	1060.0	1.82293
$n_t$	1014.0	1.82420
$n_s$	852.1	1.82997
$n_r$	706.5	1.83834
$n_C$	656.3	1.84255
$n_{C'}$	643.8	1.84376
$n_{632.8}$	632.8	1.84489
$n_D$	589.3	1.85002
$n_d$	587.6	1.85025
$n_e$	546.1	1.85650
$n_F$	486.1	1.86898
$n_{F'}$	480.0	1.87058
$n_g$	435.8	1.88467
$n_h$	404.7	1.89845
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.814	0.598
2325	0.873	0.712
1970	0.967	0.919
1530	0.994	0.986
1060	0.998	0.994
700	0.994	0.986
660	0.992	0.981
620	0.992	0.979
580	0.991	0.978
546	0.989	0.972
500	0.978	0.945
460	0.958	0.898
436	0.933	0.840
420	0.901	0.770
405	0.831	0.630
400	0.799	0.570
390	0.693	0.400
380	0.525	0.200
370	0.270	0.040
365	0.137	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2181
$P_{C,s}$	0.4762
$P_{d,C}$	0.2912
$P_{e,d}$	0.2366
$P_{g,F}$	0.5934
$P_{i,h}$	
$P'_{s,t}$	0.2149
$P'_{C',s}$	0.5140
$P'_{d,C'}$	0.2420
$P'_{e,d}$	0.2330
$P'_{g,F'}$	0.5250
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0032
$\Delta P_{C,s}$	-0.0016
$\Delta P_{F,e}$	0.0008
$\Delta P_{g,F}$	0.0037
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.00029547
$B_2$	0.298926886
$B_3$	1.80691843
$C_1$	0.0121426017
$C_2$	0.0538736236
$C_3$	156.530829

Constants of Dispersion $dn/dT$	
$D_0$	$1.05 \cdot 10^{-6}$
$D_1$	$1.02 \cdot 10^{-8}$
$D_2$	$-2.38 \cdot 10^{-11}$
$E_0$	$9.19 \cdot 10^{-7}$
$E_1$	$1.18 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.257

Color Code	
$\lambda_{80}/\lambda_5$	41/36*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.4
$T_g [^\circ C]$	683
$T_{10}^{13.0} [^\circ C]$	700
$T_{10}^{7.6} [^\circ C]$	817
$c_p [J/(g \cdot K)]$	0.530
$\lambda [W/(m \cdot K)]$	0.790
$\rho [g/cm^3]$	4.41
$E [10^3 N/mm^2]$	109
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.72
$HK_{0.1/20}$	515
<b>HG</b>	4
<b>Abrasion Aa</b>	120
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.8	4.7	6.9	0.4	2.2	4.3
+20/ +40	2.9	5.1	7.7	1.4	3.5	6.0
+60/ +80	3.1	5.5	8.2	1.8	4.2	6.9

## N-LASF9HT 850322.441

$n_d = 1.85025$	$v_d = 32.17$	$n_F - n_C = 0.026430$
$n_e = 1.85650$	$v_e = 31.93$	$n_{F'} - n_{C'} = 0.026827$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.80058
$n_{1970.1}$	1970.1	1.80659
$n_{1529.6}$	1529.6	1.81364
$n_{1060.0}$	1060.0	1.82293
$n_t$	1014.0	1.82420
$n_s$	852.1	1.82997
$n_r$	706.5	1.83834
$n_C$	656.3	1.84255
$n_{C'}$	643.8	1.84376
$n_{632.8}$	632.8	1.84489
$n_D$	589.3	1.85002
$n_d$	587.6	1.85025
$n_e$	546.1	1.85650
$n_F$	486.1	1.86898
$n_{F'}$	480.0	1.87058
$n_g$	435.8	1.88467
$n_h$	404.7	1.89845
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.814	0.598
2325	0.873	0.712
1970	0.967	0.919
1530	0.994	0.986
1060	0.998	0.994
700	0.994	0.986
660	0.992	0.981
620	0.992	0.979
580	0.991	0.978
546	0.989	0.972
500	0.978	0.945
460	0.958	0.898
436	0.939	0.855
420	0.915	0.801
405	0.869	0.703
400	0.843	0.653
390	0.766	0.513
380	0.629	0.314
370	0.390	0.095
365	0.246	0.030
350	0.005	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2181
$P_{C,s}$	0.4762
$P_{d,C}$	0.2912
$P_{e,d}$	0.2366
$P_{g,F}$	0.5934
$P_{i,h}$	
$P'_{s,t}$	0.2149
$P'_{C',s}$	0.5140
$P'_{d,C'}$	0.2420
$P'_{e,d}$	0.2330
$P'_{g,F'}$	0.5250
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0032
$\Delta P_{C,s}$	-0.0016
$\Delta P_{F,e}$	0.0008
$\Delta P_{g,F}$	0.0037
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.00029547
$B_2$	0.298926886
$B_3$	1.80691843
$C_1$	0.0121426017
$C_2$	0.0538736236
$C_3$	156.530829

Constants of Dispersion $dn/dT$	
$D_0$	$1.05 \cdot 10^{-6}$
$D_1$	$1.02 \cdot 10^{-8}$
$D_2$	$-2.38 \cdot 10^{-11}$
$E_0$	$9.19 \cdot 10^{-7}$
$E_1$	$1.18 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.257

Color Code	
$\lambda_{80}/\lambda_5$	40/36*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.4
$T_g [^\circ C]$	683
$T_{10}^{13.0} [^\circ C]$	700
$T_{10}^{7.6} [^\circ C]$	817
$c_p [J/(g \cdot K)]$	0.530
$\lambda [W/(m \cdot K)]$	0.790
$\rho [g/cm^3]$	4.41
$E [10^3 N/mm^2]$	109
$\mu$	0.288
$K [10^{-6} mm^2/N]$	1.72
$HK_{0.1/20}$	515
<b>HG</b>	4
<b>Abrasion Aa</b>	120
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.8	4.7	6.9	0.4	2.2	4.3
+20/ +40	2.9	5.1	7.7	1.4	3.5	6.0
+60/ +80	3.1	5.5	8.2	1.8	4.2	6.9



## N-LASF31A 883408.551

$n_d = 1.88300$	$v_d = 40.76$	$n_F - n_C = 0.021663$
$n_e = 1.88815$	$v_e = 40.52$	$n_{F'} - n_{C'} = 0.021921$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.83590
$n_{1970.1}$	1970.1	1.84267
$n_{1529.6}$	1529.6	1.85026
$n_{1060.0}$	1060.0	1.85937
$n_t$	1014.0	1.86054
$n_s$	852.1	1.86572
$n_r$	706.5	1.87298
$n_C$	656.3	1.87656
$n_{C'}$	643.8	1.87757
$n_{632.8}$	632.8	1.87853
$n_D$	589.3	1.88281
$n_d$	587.6	1.88300
$n_e$	546.1	1.88815
$n_F$	486.1	1.89822
$n_{F'}$	480.0	1.89950
$n_g$	435.8	1.91050
$n_h$	404.7	1.92093
$n_i$	365.0	1.93920
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.636	0.323
2325	0.824	0.616
1970	0.963	0.910
1530	0.993	0.983
1060	0.998	0.995
700	0.997	0.992
660	0.996	0.991
620	0.996	0.990
580	0.996	0.990
546	0.996	0.990
500	0.991	0.978
460	0.980	0.950
436	0.970	0.927
420	0.960	0.903
405	0.942	0.862
400	0.933	0.841
390	0.905	0.780
380	0.860	0.685
370	0.782	0.540
365	0.729	0.453
350	0.488	0.166
334	0.129	0.006
320	0.060	
310	0.001	
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2391
$P_{C,s}$	0.5004
$P_{d,C}$	0.2972
$P_{e,d}$	0.2377
$P_{g,F}$	0.5667
$P_{i,h}$	0.8436
$P'_{s,t}$	0.2363
$P'_{C',s}$	0.5407
$P'_{d,C'}$	0.2475
$P'_{e,d}$	0.2349
$P'_{g,F'}$	0.5021
$P'_{i,h}$	0.8337

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0012
$\Delta P_{C,s}$	0.0025
$\Delta P_{F,e}$	-0.0019
$\Delta P_{g,F}$	-0.0085
$\Delta P_{i,g}$	-0.0575

Constants of Dispersion Formula	
$B_1$	1.96485075
$B_2$	0.475231259
$B_3$	1.48360109
$C_1$	0.00982060155
$C_2$	0.0344713438
$C_3$	110.739863

Constants of Dispersion $dn/dT$	
$D_0$	$1.67 \cdot 10^{-6}$
$D_1$	$8.90 \cdot 10^{-9}$
$D_2$	$-8.73 \cdot 10^{-12}$
$E_0$	$7.47 \cdot 10^{-7}$
$E_1$	$7.46 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.207

Color Code	
$\lambda_{80}/\lambda_5$	38/33*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.7
$T_g [^\circ C]$	719
$T_{10}^{13.0} [^\circ C]$	720
$T_{10}^{7.6} [^\circ C]$	830
$c_p [J/(g \cdot K)]$	0.440
$\lambda [W/(m \cdot K)]$	0.790
$\rho [g/cm^3]$	5.51
$E [10^3 N/mm^2]$	126
$\mu$	0.301
$K [10^{-6} mm^2/N]$	1.18
$HK_{0.1/20}$	650
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	2.3
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.4	4.8	6.3	0.9	2.3	3.7
+20/ +40	3.3	4.9	6.6	1.7	3.3	4.9
+60/ +80	3.4	5.2	6.9	2.2	3.9	5.6

## N-LASF40 834373.443

$n_d = 1.83404$	$v_d = 37.30$	$n_F - n_C = 0.022363$
$n_e = 1.83935$	$v_e = 37.04$	$n_{F'} - n_{C'} = 0.022658$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.78600
$n_{1970.1}$	1970.1	1.79298
$n_{1529.6}$	1529.6	1.80074
$n_{1060.0}$	1060.0	1.80999
$n_t$	1014.0	1.81118
$n_s$	852.1	1.81643
$n_r$	706.5	1.82380
$n_C$	656.3	1.82745
$n_{C'}$	643.8	1.82849
$n_{632.8}$	632.8	1.82946
$n_D$	589.3	1.83385
$n_d$	587.6	1.83404
$n_e$	546.1	1.83935
$n_F$	486.1	1.84981
$n_{F'}$	480.0	1.85114
$n_g$	435.8	1.86275
$n_h$	404.7	1.87393
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.565	0.240
2325	0.810	0.590
1970	0.963	0.910
1530	0.993	0.982
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.994
620	0.997	0.993
580	0.997	0.992
546	0.995	0.988
500	0.987	0.969
460	0.973	0.933
436	0.954	0.890
420	0.937	0.850
405	0.905	0.780
400	0.891	0.750
390	0.842	0.650
380	0.764	0.510
370	0.601	0.280
365	0.468	0.150
350	0.044	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2346
$P_{C,s}$	0.4929
$P_{d,C}$	0.2948
$P_{e,d}$	0.2371
$P_{g,F}$	0.5786
$P_{i,h}$	
$P'_{s,t}$	0.2315
$P'_{C',s}$	0.5321
$P'_{d,C'}$	0.2453
$P'_{e,d}$	0.2340
$P'_{g,F'}$	0.5124
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0055
$\Delta P_{C,s}$	0.0030
$\Delta P_{F,e}$	-0.0007
$\Delta P_{g,F}$	-0.0024
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.98550331
$B_2$	0.274057042
$B_3$	1.28945661
$C_1$	0.010958331
$C_2$	0.0474551603
$C_3$	96.9085286

Constants of Dispersion $dn/dT$	
$D_0$	$8.10 \cdot 10^{-6}$
$D_1$	$1.25 \cdot 10^{-8}$
$D_2$	$-1.73 \cdot 10^{-11}$
$E_0$	$8.27 \cdot 10^{-7}$
$E_1$	$1.08 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.238

Color Code	
$\lambda_{80}/\lambda_5$	39/35*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.9
$T_g [^\circ C]$	590
$T_{10}^{13.0} [^\circ C]$	591
$T_{10}^{7.6} [^\circ C]$	677
$c_p [J/(g \cdot K)]$	0.550
$\lambda [W/(m \cdot K)]$	0.810
$\rho [g/cm^3]$	4.43
$E [10^3 N/mm^2]$	111
$\mu$	0.304
$K [10^{-6} mm^2/N]$	2.19
$HK_{0.1/20}$	580
$HG$	1
$CR$	1
$FR$	1
$SR$	51.2
$AR$	1
$PR$	1.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	7.1	8.8	10.6	4.6	6.3	8.0
+20/ +40	7.3	9.3	11.4	5.7	7.7	9.8
+60/ +80	7.6	9.7	12.0	6.3	8.5	10.8

## N-LASF41 835431.485

$n_d = 1.83501$	$v_d = 43.13$	$n_F - n_C = 0.019361$
$n_e = 1.83961$	$v_e = 42.88$	$n_{F'} - n_{C'} = 0.019578$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.78859
$n_{1970.1}$	1970.1	1.79608
$n_{1529.6}$	1529.6	1.80423
$n_{1060.0}$	1060.0	1.81338
$n_t$	1014.0	1.81450
$n_s$	852.1	1.81936
$n_r$	706.5	1.82599
$n_C$	656.3	1.82923
$n_{C'}$	643.8	1.83014
$n_{632.8}$	632.8	1.83100
$n_D$	589.3	1.83484
$n_d$	587.6	1.83501
$n_e$	546.1	1.83961
$n_F$	486.1	1.84859
$n_{F'}$	480.0	1.84972
$n_g$	435.8	1.85949
$n_h$	404.7	1.86872
$n_i$	365.0	1.88486
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.480	0.160
2325	0.764	0.510
1970	0.950	0.880
1530	0.993	0.983
1060	0.998	0.995
700	0.998	0.995
660	0.998	0.994
620	0.997	0.993
580	0.998	0.994
546	0.997	0.993
500	0.994	0.984
460	0.985	0.962
436	0.976	0.940
420	0.967	0.920
405	0.954	0.890
400	0.948	0.876
390	0.928	0.830
380	0.891	0.750
370	0.831	0.630
365	0.787	0.550
350	0.592	0.270
334	0.292	0.040
320	0.040	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2508
$P_{C,s}$	0.5098
$P_{d,C}$	0.2986
$P_{e,d}$	0.2378
$P_{g,F}$	0.5629
$P_{i,h}$	0.8338
$P'_{s,t}$	0.2480
$P'_{C',s}$	0.5507
$P'_{d,C'}$	0.2487
$P'_{e,d}$	0.2351
$P'_{g,F'}$	0.4989
$P'_{i,h}$	0.8245

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0110
$\Delta P_{C,s}$	0.0063
$\Delta P_{F,e}$	-0.0021
$\Delta P_{g,F}$	-0.0083
$\Delta P_{i,g}$	-0.0520

Constants of Dispersion Formula	
$B_1$	1.86348331
$B_2$	0.413307255
$B_3$	1.35784815
$C_1$	0.00910368219
$C_2$	0.0339247268
$C_3$	93.3580595

Constants of Dispersion $dn/dT$	
$D_0$	$3.03 \cdot 10^{-6}$
$D_1$	$1.04 \cdot 10^{-8}$
$D_2$	$-1.30 \cdot 10^{-11}$
$E_0$	$6.62 \cdot 10^{-7}$
$E_1$	$7.82 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.209

Color Code	
$\lambda_{80}/\lambda_5$	37/32*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.3
$T_g [^\circ C]$	651
$T_{10}^{13.0} [^\circ C]$	658
$T_{10}^{7.6} [^\circ C]$	739
$c_p [J/(g \cdot K)]$	0.490
$\lambda [W/(m \cdot K)]$	0.790
$\rho [g/cm^3]$	4.85
$E [10^3 N/mm^2]$	124
$\mu$	0.294
$K [10^{-6} mm^2/N]$	1.57
$HK_{0.1/20}$	760
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	4
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.0	5.2	6.4	1.5	2.7	3.9
+20/ +40	4.0	5.4	6.8	2.4	3.8	5.2
+60/ +80	4.2	5.7	7.2	2.9	4.5	6.0

## N-LASF43 806406.426

$n_d = 1.80610$	$v_d = 40.61$	$n_F - n_C = 0.019850$
$n_e = 1.81081$	$v_e = 40.36$	$n_{F'} - n_{C'} = 0.020089$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75901
$n_{1970.1}$	1970.1	1.76662
$n_{1529.6}$	1529.6	1.77488
$n_{1060.0}$	1060.0	1.78413
$n_t$	1014.0	1.78527
$n_s$	852.1	1.79018
$n_r$	706.5	1.79691
$n_C$	656.3	1.80020
$n_{C'}$	643.8	1.80113
$n_{632.8}$	632.8	1.80200
$n_D$	589.3	1.80593
$n_d$	587.6	1.80610
$n_e$	546.1	1.81081
$n_F$	486.1	1.82005
$n_{F'}$	480.0	1.82122
$n_g$	435.8	1.83137
$n_h$	404.7	1.84106
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.398	0.100
2325	0.713	0.430
1970	0.937	0.850
1530	0.984	0.960
1060	0.998	0.994
700	0.998	0.995
660	0.998	0.995
620	0.997	0.993
580	0.996	0.991
546	0.995	0.988
500	0.990	0.975
460	0.980	0.950
436	0.967	0.920
420	0.954	0.890
405	0.933	0.840
400	0.919	0.810
390	0.882	0.730
380	0.821	0.610
370	0.707	0.420
365	0.618	0.300
350	0.221	0.020
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2476
$P_{C,s}$	0.5049
$P_{d,C}$	0.2972
$P_{e,d}$	0.2374
$P_{g,F}$	0.5703
$P_{i,h}$	
$P'_{s,t}$	0.2446
$P'_{C',s}$	0.5452
$P'_{d,C'}$	0.2473
$P'_{e,d}$	0.2346
$P'_{g,F'}$	0.5053
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0149
$\Delta P_{C,s}$	0.0073
$\Delta P_{F,e}$	-0.0016
$\Delta P_{g,F}$	-0.0052
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.93502827
$B_2$	0.23662935
$B_3$	1.26291344
$C_1$	0.0104001413
$C_2$	0.0447505292
$C_3$	87.437569

Constants of Dispersion $dn/dT$	
$D_0$	$4.77 \cdot 10^{-6}$
$D_1$	$1.14 \cdot 10^{-8}$
$D_2$	$-2.68 \cdot 10^{-12}$
$E_0$	$6.62 \cdot 10^{-7}$
$E_1$	$8.84 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.234

Color Code	
$\lambda_{80}/\lambda_5$	42/34
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.7
$T_g [^\circ C]$	614
$T_{10}^{13.0} [^\circ C]$	615
$T_{10}^{7.6} [^\circ C]$	699
$c_p [J/(g \cdot K)]$	0.550
$\lambda [W/(m \cdot K)]$	0.810
$\rho [g/cm^3]$	4.26
$E [10^3 N/mm^2]$	114
$\mu$	0.290
$K [10^{-6} mm^2/N]$	1.92
$HK_{0.1/20}$	720
$HG$	2
$CR$	1
$FR$	1
$SR$	51.3
$AR$	1
$PR$	2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.9	6.2	7.6	2.5	3.8	5.0
+20/ +40	5.0	6.5	8.1	3.4	4.9	6.4
+60/ +80	5.2	6.9	8.6	4.0	5.6	7.4

## N-LASF44 804465.444

$n_d = 1.80420$	$v_d = 46.50$	$n_F - n_C = 0.017294$
$n_e = 1.80832$	$v_e = 46.25$	$n_{F'} - n_{C'} = 0.017476$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.76070
$n_{1970.1}$	1970.1	1.76801
$n_{1529.6}$	1529.6	1.77590
$n_{1060.0}$	1060.0	1.78455
$n_t$	1014.0	1.78560
$n_s$	852.1	1.79006
$n_r$	706.5	1.79609
$n_C$	656.3	1.79901
$n_{C'}$	643.8	1.79983
$n_{632.8}$	632.8	1.80060
$n_D$	589.3	1.80405
$n_d$	587.6	1.80420
$n_e$	546.1	1.80832
$n_F$	486.1	1.81630
$n_{F'}$	480.0	1.81731
$n_g$	435.8	1.82594
$n_h$	404.7	1.83405
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.468	0.150
2325	0.739	0.470
1970	0.946	0.870
1530	0.990	0.975
1060	0.998	0.995
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.996	0.989
460	0.991	0.977
436	0.986	0.965
420	0.980	0.950
405	0.967	0.920
400	0.963	0.910
390	0.946	0.870
380	0.911	0.793
370	0.860	0.685
365	0.823	0.615
350	0.658	0.351
334	0.378	0.088
320	0.152	
310	0.068	
300	0.029	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2582
$P_{C,s}$	0.5171
$P_{d,C}$	0.3002
$P_{e,d}$	0.2380
$P_{g,F}$	0.5572
$P_{i,h}$	
$P'_{s,t}$	0.2555
$P'_{C',s}$	0.5588
$P'_{d,C'}$	0.2501
$P'_{e,d}$	0.2355
$P'_{g,F'}$	0.4941
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0098
$\Delta P_{C,s}$	0.0058
$\Delta P_{F,e}$	-0.0021
$\Delta P_{g,F}$	-0.0084
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.78897105
$B_2$	0.38675867
$B_3$	1.30506243
$C_1$	0.00872506277
$C_2$	0.0308085023
$C_3$	92.7743824

Color Code	
$\lambda_{80}/\lambda_5$	40/31
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$3.32 \cdot 10^{-6}$
$D_1$	$1.12 \cdot 10^{-8}$
$D_2$	$-8.52 \cdot 10^{-12}$
$E_0$	$5.88 \cdot 10^{-7}$
$E_1$	$7.13 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.209

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	655
$T_{10}^{13.0} [^\circ C]$	659
$T_{10}^{7.6} [^\circ C]$	742
$c_p [J/(g \cdot K)]$	0.530
$\lambda [W/(m \cdot K)]$	0.820
$\rho [g/cm^3]$	4.44
$E [10^3 N/mm^2]$	124
$\mu$	0.293
$K [10^{-6} mm^2/N]$	1.41
$HK_{0.1/20}$	770
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	4
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
[ $^\circ C$ ]	1060.0	e	g	1060.0	e	g
-40/ -20	4.0	5.1	6.1	1.6	2.6	3.6
+20/ +40	4.0	5.3	6.5	2.5	3.7	4.9
+60/ +80	4.2	5.6	6.9	3.0	4.4	5.7

## N-LASF45 801350.363

$n_d = 1.80107$	$v_d = 34.97$	$n_F - n_C = 0.022905$
$n_e = 1.80650$	$v_e = 34.72$	$n_{F'} - n_{C'} = 0.023227$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75487
$n_{1970.1}$	1970.1	1.76104
$n_{1529.6}$	1529.6	1.76809
$n_{1060.0}$	1060.0	1.77689
$n_t$	1014.0	1.77805
$n_s$	852.1	1.78325
$n_r$	706.5	1.79066
$n_C$	656.3	1.79436
$n_{C'}$	643.8	1.79541
$n_{632.8}$	632.8	1.79640
$n_D$	589.3	1.80087
$n_d$	587.6	1.80107
$n_e$	546.1	1.80650
$n_F$	486.1	1.81726
$n_{F'}$	480.0	1.81864
$n_g$	435.8	1.83068
$n_h$	404.7	1.84237
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.805	0.581
2325	0.879	0.724
1970	0.972	0.932
1530	0.995	0.988
1060	0.999	0.997
700	0.996	0.990
660	0.995	0.987
620	0.994	0.984
580	0.994	0.986
546	0.993	0.982
500	0.983	0.958
460	0.965	0.915
436	0.946	0.870
420	0.924	0.820
405	0.877	0.720
400	0.857	0.680
390	0.787	0.550
380	0.672	0.370
370	0.476	0.150
365	0.336	0.060
350	0.012	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2268
$P_{C,s}$	0.4849
$P_{d,C}$	0.2930
$P_{e,d}$	0.2368
$P_{g,F}$	0.5859
$P_{i,h}$	
$P'_{s,t}$	0.2237
$P'_{C',s}$	0.5235
$P'_{d,C'}$	0.2437
$P'_{e,d}$	0.2336
$P'_{g,F'}$	0.5186
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0009
$\Delta P_{C,s}$	0.0005
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0009
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.87140198
$B_2$	0.267777879
$B_3$	1.73030008
$C_1$	0.011217192
$C_2$	0.0505134972
$C_3$	147.106505

Constants of Dispersion $dn/dT$	
$D_0$	$2.78 \cdot 10^{-6}$
$D_1$	$8.73 \cdot 10^{-9}$
$D_2$	$-2.65 \cdot 10^{-11}$
$E_0$	$8.24 \cdot 10^{-7}$
$E_1$	$1.15 \cdot 10^{-9}$
$\lambda_{TK}$ [μm]	0.255

Color Code	
$\lambda_{80}/\lambda_5$	44/35
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C}$ [ $10^{-6}/K$ ]	7.4
$\alpha_{+20/+300^\circ C}$ [ $10^{-6}/K$ ]	8.6
$T_g$ [°C]	647
$T_{10}^{13.0}$ [°C]	652
$T_{10}^{7.6}$ [°C]	773
$c_p$ [J/(g·K)]	0.660
$\lambda$ [W/(m·K)]	1.020
$\rho$ [g/cm <sup>3</sup> ]	3.63
$E$ [ $10^3$ N/mm <sup>2</sup> ]	116
$\mu$	0.281
$K$ [ $10^{-6}$ mm <sup>2</sup> /N]	2.01
$HK_{0.1/20}$	630
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	3.2
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/K$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/K$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.8	5.4	7.3	1.4	3.0	4.7
+20/ +40	3.8	5.7	7.9	2.3	4.1	6.2
+60/ +80	3.8	5.9	8.3	2.6	4.7	7.0

## N-LASF45HT 801350.363

$n_d = 1.80107$	$v_d = 34.97$	$n_F - n_C = 0.022905$
$n_e = 1.80650$	$v_e = 34.72$	$n_{F'} - n_{C'} = 0.023227$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75487
$n_{1970.1}$	1970.1	1.76104
$n_{1529.6}$	1529.6	1.76809
$n_{1060.0}$	1060.0	1.77689
$n_t$	1014.0	1.77805
$n_s$	852.1	1.78325
$n_r$	706.5	1.79066
$n_C$	656.3	1.79436
$n_{C'}$	643.8	1.79541
$n_{632.8}$	632.8	1.79640
$n_D$	589.3	1.80087
$n_d$	587.6	1.80107
$n_e$	546.1	1.80650
$n_F$	486.1	1.81726
$n_{F'}$	480.0	1.81864
$n_g$	435.8	1.83068
$n_h$	404.7	1.84237
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.805	0.581
2325	0.879	0.724
1970	0.972	0.932
1530	0.995	0.988
1060	0.999	0.997
700	0.996	0.990
660	0.995	0.987
620	0.994	0.986
580	0.994	0.986
546	0.993	0.983
500	0.985	0.964
460	0.972	0.931
436	0.958	0.898
420	0.941	0.858
405	0.906	0.781
400	0.886	0.739
390	0.825	0.619
380	0.719	0.439
370	0.528	0.203
365	0.395	0.098
350	0.033	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2268
$P_{C,s}$	0.4849
$P_{d,C}$	0.2930
$P_{e,d}$	0.2368
$P_{g,F}$	0.5859
$P_{i,h}$	
$P'_{s,t}$	0.2237
$P'_{C',s}$	0.5235
$P'_{d,C'}$	0.2437
$P'_{e,d}$	0.2336
$P'_{g,F'}$	0.5186
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0009
$\Delta P_{C,s}$	0.0005
$\Delta P_{F,e}$	0.0001
$\Delta P_{g,F}$	0.0009
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.87140198
$B_2$	0.267777879
$B_3$	1.73030008
$C_1$	0.011217192
$C_2$	0.0505134972
$C_3$	147.106505

Color Code	
$\lambda_{80}/\lambda_5$	43/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$2.78 \cdot 10^{-6}$
$D_1$	$8.73 \cdot 10^{-9}$
$D_2$	$-2.65 \cdot 10^{-11}$
$E_0$	$8.24 \cdot 10^{-7}$
$E_1$	$1.15 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.255

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.6
$T_g [^\circ C]$	647
$T_{10}^{13.0} [^\circ C]$	652
$T_{10}^{7.6} [^\circ C]$	773
$c_p [J/(g \cdot K)]$	0.660
$\lambda [W/(m \cdot K)]$	1.020
$\rho [g/cm^3]$	3.63
$E [10^3 N/mm^2]$	116
$\mu$	0.281
$K [10^{-6} mm^2/N]$	2.01
$HK_{0.1/20}$	630
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	3.2
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.8	5.4	7.3	1.4	3.0	4.7
+20/ +40	3.8	5.7	7.9	2.3	4.1	6.2
+60/ +80	3.8	5.9	8.3	2.6	4.7	7.0



## N-LASF46A 904313.445

$n_d = 1.90366$	$v_d = 31.32$	$n_F - n_C = 0.028853$
$n_e = 1.91048$	$v_e = 31.09$	$n_{F'} - n_{C'} = 0.029287$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.84576
$n_{1970.1}$	1970.1	1.85364
$n_{1529.6}$	1529.6	1.86255
$n_{1060.0}$	1060.0	1.87353
$n_t$	1014.0	1.87498
$n_s$	852.1	1.88143
$n_r$	706.5	1.89064
$n_C$	656.3	1.89526
$n_{C'}$	643.8	1.89657
$n_{632.8}$	632.8	1.89781
$n_D$	589.3	1.90341
$n_d$	587.6	1.90366
$n_e$	546.1	1.91048
$n_F$	486.1	1.92411
$n_{F'}$	480.0	1.92586
$n_g$	435.8	1.94129
$n_h$	404.7	1.95645
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.556	0.230
2325	0.793	0.560
1970	0.954	0.890
1530	0.991	0.977
1060	0.999	0.997
700	0.996	0.989
660	0.994	0.985
620	0.993	0.983
580	0.993	0.982
546	0.991	0.978
500	0.980	0.950
460	0.959	0.900
436	0.937	0.850
420	0.905	0.780
405	0.847	0.660
400	0.815	0.600
390	0.707	0.420
380	0.504	0.180
370	0.181	0.014
365	0.050	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2236
$P_{C,s}$	0.4793
$P_{d,C}$	0.2912
$P_{e,d}$	0.2364
$P_{g,F}$	0.5953
$P_{i,h}$	
$P'_{s,t}$	0.2203
$P'_{C',s}$	0.5170
$P'_{d,C'}$	0.2420
$P'_{e,d}$	0.2329
$P'_{g,F'}$	0.5268
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0094
$\Delta P_{C,s}$	0.0034
$\Delta P_{F,e}$	0.0005
$\Delta P_{g,F}$	0.0042
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.16701566
$B_2$	0.319812761
$B_3$	1.66004486
$C_1$	0.0123595524
$C_2$	0.0560610282
$C_3$	107.047718

Constants of Dispersion $dn/dT$	
$D_0$	$3.53 \cdot 10^{-6}$
$D_1$	$1.24 \cdot 10^{-8}$
$D_2$	$-1.87 \cdot 10^{-11}$
$E_0$	$8.39 \cdot 10^{-7}$
$E_1$	$1.04 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.275

Color Code	
$\lambda_{80}/\lambda_5$	41/37*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.2
$T_g [^\circ C]$	638
$T_{10}^{13.0} [^\circ C]$	639
$T_{10}^{7.6} [^\circ C]$	733
$c_p [J/(g \cdot K)]$	0.540
$\lambda [W/(m \cdot K)]$	0.910
$\rho [g/cm^3]$	4.45
$E [10^3 N/mm^2]$	124
$\mu$	0.298
$K [10^{-6} mm^2/N]$	1.64
$HK_{0.1/20}$	666
<b>HG</b>	1
<b>Abrasion Aa</b>	88
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	3
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.4	6.4	8.8	1.9	3.8	6.1
+20/ +40	4.7	7.0	9.8	3.1	5.3	8.1
+60/ +80	5.0	7.4	10.5	3.7	6.1	9.2

## N-LASF46B 904313.451

$n_d = 1.90366$	$v_d = 31.32$	$n_F - n_C = 0.028852$
$n_e = 1.91048$	$v_e = 31.09$	$n_{F'} - n_{C'} = 0.029289$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.84657
$n_{1970.1}$	1970.1	1.85418
$n_{1529.6}$	1529.6	1.86283
$n_{1060.0}$	1060.0	1.87362
$n_t$	1014.0	1.87505
$n_s$	852.1	1.88146
$n_r$	706.5	1.89065
$n_C$	656.3	1.89526
$n_{C'}$	643.8	1.89657
$n_{632.8}$	632.8	1.89781
$n_D$	589.3	1.90341
$n_d$	587.6	1.90366
$n_e$	546.1	1.91048
$n_F$	486.1	1.92411
$n_{F'}$	480.0	1.92586
$n_g$	435.8	1.94130
$n_h$	404.7	1.95647
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.556	0.230
2325	0.787	0.550
1970	0.954	0.890
1530	0.991	0.977
1060	0.998	0.996
700	0.997	0.992
660	0.996	0.990
620	0.995	0.987
580	0.993	0.982
546	0.990	0.974
500	0.981	0.952
460	0.963	0.910
436	0.946	0.870
420	0.924	0.820
405	0.872	0.710
400	0.847	0.660
390	0.752	0.490
380	0.556	0.230
370	0.275	0.021
365	0.114	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2222
$P_{C,s}$	0.4783
$P_{d,C}$	0.2911
$P_{e,d}$	0.2364
$P_{g,F}$	0.5956
$P_{i,h}$	
$P'_{s,t}$	0.2189
$P'_{C',s}$	0.5160
$P'_{d,C'}$	0.2419
$P'_{e,d}$	0.2329
$P'_{g,F'}$	0.5270
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0069
$\Delta P_{C,s}$	0.0024
$\Delta P_{F,e}$	0.0006
$\Delta P_{g,F}$	0.0045
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.17988922
$B_2$	0.306495184
$B_3$	1.56882437
$C_1$	0.0125805384
$C_2$	0.0567191367
$C_3$	105.316538

Color Code	
$\lambda_{80}/\lambda_5$	40/36*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding

Constants of Dispersion $dn/dT$	
$D_0$	$5.98 \cdot 10^{-6}$
$D_1$	$1.30 \cdot 10^{-8}$
$D_2$	$-3.50 \cdot 10^{-12}$
$E_0$	$9.13 \cdot 10^{-7}$
$E_1$	$1.24 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.267

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.1
$T_g [^\circ C]$	611
$T_{10}^{13.0} [^\circ C]$	613
$T_{10}^{7.6} [^\circ C]$	703
$c_p [J/(g \cdot K)]$	0.550
$\lambda [W/(m \cdot K)]$	0.880
$AT [^\circ C]$	649
$\rho [g/cm^3]$	4.51
$E [10^3 N/mm^2]$	121
$\mu$	0.303
$K [10^{-6} mm^2/N]$	1.87
$HK_{0.1/20}$	712
<b>HG</b>	
<b>Abrasion Aa</b>	55
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	3.3
<b>AR</b>	1
<b>PR</b>	1
<b>SR-J</b>	2
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.1	8.2	10.7	3.6	5.6	8.1
+20/ +40	6.4	8.9	11.8	4.8	7.2	10.1
+60/ +80	6.8	9.5	12.7	5.5	8.2	11.4

## P-LASF47 806409.454

$n_d = 1.80610$	$v_d = 40.90$	$n_F - n_C = 0.019709$
$n_e = 1.81078$	$v_e = 40.66$	$n_{F'} - n_{C'} = 0.019941$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.76040
$n_{1970.1}$	1970.1	1.76755
$n_{1529.6}$	1529.6	1.77538
$n_{1060.0}$	1060.0	1.78432
$n_t$	1014.0	1.78544
$n_s$	852.1	1.79028
$n_r$	706.5	1.79696
$n_C$	656.3	1.80023
$n_{C'}$	643.8	1.80116
$n_{632.8}$	632.8	1.80203
$n_D$	589.3	1.80593
$n_d$	587.6	1.80610
$n_e$	546.1	1.81078
$n_F$	486.1	1.81994
$n_{F'}$	480.0	1.82110
$n_g$	435.8	1.83112
$n_h$	404.7	1.84064
$n_i$	365.0	1.85739
$n_{334.1}$	334.1	1.87632
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.525	0.200
2325	0.776	0.530
1970	0.950	0.880
1530	0.992	0.981
1060	0.999	0.998
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.994
546	0.998	0.994
500	0.995	0.988
460	0.990	0.975
436	0.985	0.963
420	0.980	0.950
405	0.971	0.930
400	0.967	0.920
390	0.954	0.890
380	0.928	0.830
370	0.877	0.720
365	0.842	0.650
350	0.657	0.350
334	0.250	0.030
320	0.012	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2459
$P_{C,s}$	0.5049
$P_{d,C}$	0.2976
$P_{e,d}$	0.2376
$P_{g,F}$	0.5671
$P_{i,h}$	0.8502
$P'_{s,t}$	0.2430
$P'_{C',s}$	0.5453
$P'_{d,C'}$	0.2478
$P'_{e,d}$	0.2348
$P'_{g,F'}$	0.5025
$P'_{i,h}$	0.8403

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0117
$\Delta P_{C,s}$	0.0066
$\Delta P_{F,e}$	-0.0021
$\Delta P_{g,F}$	-0.0079
$\Delta P_{i,g}$	-0.0482

Constants of Dispersion Formula	
$B_1$	1.85543101
$B_2$	0.315854649
$B_3$	1.28561839
$C_1$	0.0100328203
$C_2$	0.0387095168
$C_3$	94.5421507

Constants of Dispersion $dn/dT$	
$D_0$	$7.87 \cdot 10^{-6}$
$D_1$	$1.09 \cdot 10^{-8}$
$D_2$	$-1.56 \cdot 10^{-11}$
$E_0$	$7.58 \cdot 10^{-7}$
$E_1$	$8.92 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.218

Color Code	
$\lambda_{80}/\lambda_5$	39/33
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.3
$T_g [^\circ C]$	530
$T_{10}^{13.0} [^\circ C]$	532
$T_{10}^{7.6} [^\circ C]$	627
$c_p [J/(g \cdot K)]$	0.550
$\lambda [W/(m \cdot K)]$	0.850
$AT [^\circ C]$	580
$\rho [g/cm^3]$	4.54
$E [10^3 N/mm^2]$	120
$\mu$	0.298
$K [10^{-6} mm^2/N]$	2.39
$HK_{0.1/20}$	620
$HG$	2
$Abrasion Aa$	70
$CR$	1
$FR$	1
$SR$	51.4
$AR$	1
$PR$	2.2
$SR-J$	3
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.8	8.3	9.8	4.5	5.9	7.3
+20/ +40	6.9	8.6	10.3	5.4	7.0	8.7
+60/ +80	7.1	8.9	10.8	5.9	7.7	9.5

## P-LASF50 809405.454

$n_d = 1.80860$	$v_d = 40.46$	$n_F - n_C = 0.019985$
$n_e = 1.81335$	$v_e = 40.22$	$n_{F'} - n_{C'} = 0.020223$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.76261
$n_{1970.1}$	1970.1	1.76975
$n_{1529.6}$	1529.6	1.77759
$n_{1060.0}$	1060.0	1.78657
$n_t$	1014.0	1.78770
$n_s$	852.1	1.79259
$n_r$	706.5	1.79934
$n_C$	656.3	1.80266
$n_{C'}$	643.8	1.80359
$n_{632.8}$	632.8	1.80447
$n_D$	589.3	1.80842
$n_d$	587.6	1.80860
$n_e$	546.1	1.81335
$n_F$	486.1	1.82264
$n_{F'}$	480.0	1.82382
$n_g$	435.8	1.83399
$n_h$	404.7	1.84367
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.525	0.200
2325	0.776	0.530
1970	0.950	0.880
1530	0.992	0.981
1060	0.999	0.998
700	0.998	0.995
660	0.997	0.993
620	0.997	0.992
580	0.997	0.992
546	0.997	0.992
500	0.995	0.987
460	0.990	0.975
436	0.985	0.963
420	0.980	0.950
405	0.971	0.930
400	0.967	0.920
390	0.954	0.890
380	0.928	0.830
370	0.877	0.720
365	0.842	0.650
350	0.657	0.350
334	0.292	0.030
320	0.032	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2448
$P_{C,s}$	0.5037
$P_{d,C}$	0.2973
$P_{e,d}$	0.2376
$P_{g,F}$	0.5680
$P_{i,h}$	
$P'_{s,t}$	0.2419
$P'_{C',s}$	0.5441
$P'_{d,C'}$	0.2475
$P'_{e,d}$	0.2348
$P'_{g,F'}$	0.5032
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0116
$\Delta P_{C,s}$	0.0065
$\Delta P_{F,e}$	-0.0020
$\Delta P_{g,F}$	-0.0078
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.84910553
$B_2$	0.329828674
$B_3$	1.30400901
$C_1$	0.00999234757
$C_2$	0.0387437988
$C_3$	95.8967681

Constants of Dispersion $dn/dT$	
$D_0$	$8.04 \cdot 10^{-6}$
$D_1$	$1.20 \cdot 10^{-8}$
$D_2$	$-2.19 \cdot 10^{-11}$
$E_0$	$8.20 \cdot 10^{-7}$
$E_1$	$9.08 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.209

Color Code	
$\lambda_{80}/\lambda_5$	39/32
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.9
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.3
$T_g [^\circ C]$	527
$T_{10}^{13.0} [^\circ C]$	526
$T_{10}^{7.6} [^\circ C]$	660
$c_p [J/(g \cdot K)]$	0.560
$\lambda [W/(m \cdot K)]$	0.950
$AT [^\circ C]$	571
$\rho [g/cm^3]$	4.54
$E [10^3 N/mm^2]$	119
$\mu$	0.298
$K [10^{-6} mm^2/N]$	2.41
$HK_{0.1/20}$	655
<b>HG</b>	
<b>Abrasion Aa</b>	62
<b>CR</b>	
<b>FR</b>	
<b>SR</b>	
<b>AR</b>	
<b>PR</b>	
<b>SR-J</b>	3
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.9	8.5	10.0	4.5	6.0	7.5
+20/ +40	7.1	8.9	10.6	5.5	7.3	9.0
+60/ +80	7.3	9.2	11.1	6.1	8.0	9.9

## P-LASF51 810409.458

$n_d = 1.81000$	$v_d = 40.93$	$n_F - n_C = 0.019792$
$n_e = 1.81470$	$v_e = 40.68$	$n_{F'} - n_{C'} = 0.020025$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.76437
$n_{1970.1}$	1970.1	1.77145
$n_{1529.6}$	1529.6	1.77923
$n_{1060.0}$	1060.0	1.78815
$n_t$	1014.0	1.78927
$n_s$	852.1	1.79413
$n_r$	706.5	1.80082
$n_C$	656.3	1.80411
$n_{C'}$	643.8	1.80504
$n_{632.8}$	632.8	1.80591
$n_D$	589.3	1.80983
$n_d$	587.6	1.81000
$n_e$	546.1	1.81470
$n_F$	486.1	1.82390
$n_{F'}$	480.0	1.82506
$n_g$	435.8	1.83512
$n_h$	404.7	1.84467
$n_i$	365.0	1.86148
$n_{334.1}$	334.1	1.88043
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.525	0.200
2325	0.776	0.530
1970	0.950	0.880
1530	0.992	0.981
1060	0.999	0.998
700	0.998	0.995
660	0.997	0.993
620	0.997	0.992
580	0.997	0.992
546	0.997	0.992
500	0.995	0.987
460	0.990	0.975
436	0.985	0.963
420	0.980	0.950
405	0.971	0.930
400	0.967	0.920
390	0.954	0.890
380	0.928	0.830
370	0.877	0.720
365	0.842	0.650
350	0.657	0.350
334	0.250	0.030
320	0.012	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2453
$P_{C,s}$	0.5045
$P_{d,C}$	0.2976
$P_{e,d}$	0.2376
$P_{g,F}$	0.5670
$P_{i,h}$	0.8491
$P'_{s,t}$	0.2425
$P'_{C',s}$	0.5450
$P'_{d,C'}$	0.2477
$P'_{e,d}$	0.2348
$P'_{g,F'}$	0.5024
$P'_{i,h}$	0.8392

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0107
$\Delta P_{C,s}$	0.0062
$\Delta P_{F,e}$	-0.0021
$\Delta P_{g,F}$	-0.0080
$\Delta P_{i,g}$	-0.0494

Constants of Dispersion Formula	
$B_1$	1.84568806
$B_2$	0.3390016
$B_3$	1.32418921
$C_1$	0.00988495571
$C_2$	0.0378097402
$C_3$	97.841543

Color Code	
$\lambda_{80}/\lambda_5$	39/33
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Constants of Dispersion $dn/dT$	
$D_0$	$7.79 \cdot 10^{-6}$
$D_1$	$1.10 \cdot 10^{-8}$
$D_2$	$-2.03 \cdot 10^{-11}$
$E_0$	$7.86 \cdot 10^{-7}$
$E_1$	$8.78 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.215

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	526
$T_{10}^{13.0} [^\circ C]$	534
$T_{10}^{7.6} [^\circ C]$	629
$c_p [J/(g \cdot K)]$	0.560
$\lambda [W/(m \cdot K)]$	0.870
$AT [^\circ C]$	570
$\rho [g/cm^3]$	4.58
$E [10^3 N/mm^2]$	119
$\mu$	0.299
$K [10^{-6} mm^2/N]$	2.32
$HK_{0.1/20}$	722
<b>HG</b>	
<b>Abrasion Aa</b>	66
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	51.3
<b>AR</b>	1
<b>PR</b>	2.2
<b>SR-J</b>	3
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.8	8.3	9.9	4.4	5.9	7.3
+20/ +40	6.9	8.7	10.4	5.4	7.1	8.8
+60/ +80	7.1	8.9	10.8	5.9	7.7	9.6

## N-SF1 717296.303

$n_d = 1.71736$	$v_d = 29.62$	$n_F - n_C = 0.024219$
$n_e = 1.72308$	$v_e = 29.39$	$n_{F'} - n_{C'} = 0.024606$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67021
$n_{1970.1}$	1970.1	1.67641
$n_{1529.6}$	1529.6	1.68350
$n_{1060.0}$	1060.0	1.69240
$n_t$	1014.0	1.69358
$n_s$	852.1	1.69889
$n_r$	706.5	1.70651
$n_C$	656.3	1.71035
$n_{C'}$	643.8	1.71144
$n_{632.8}$	632.8	1.71247
$n_D$	589.3	1.71715
$n_d$	587.6	1.71736
$n_e$	546.1	1.72308
$n_F$	486.1	1.73457
$n_{F'}$	480.0	1.73605
$n_g$	435.8	1.74919
$n_h$	404.7	1.76224
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.733	0.460
2325	0.804	0.580
1970	0.937	0.850
1530	0.989	0.973
1060	0.998	0.995
700	0.996	0.990
660	0.994	0.986
620	0.995	0.987
580	0.996	0.990
546	0.994	0.986
500	0.987	0.968
460	0.976	0.940
436	0.963	0.910
420	0.946	0.870
405	0.896	0.760
400	0.867	0.700
390	0.770	0.520
380	0.574	0.250
370	0.252	0.030
365	0.096	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2190
$P_{C,s}$	0.4733
$P_{d,C}$	0.2895
$P_{e,d}$	0.2360
$P_{g,F}$	0.6037
$P_{i,h}$	
$P'_{s,t}$	0.2156
$P'_{C',s}$	0.5103
$P'_{d,C'}$	0.2405
$P'_{e,d}$	0.2323
$P'_{g,F'}$	0.5340
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0068
$\Delta P_{C,s}$	0.0013
$\Delta P_{F,e}$	0.0016
$\Delta P_{g,F}$	0.0097
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.60865158
$B_2$	0.237725916
$B_3$	1.51530653
$C_1$	0.0119654879
$C_2$	0.0590589722
$C_3$	135.521676

Constants of Dispersion $dn/dT$	
$D_0$	$-3.72 \cdot 10^{-6}$
$D_1$	$8.05 \cdot 10^{-9}$
$D_2$	$-1.71 \cdot 10^{-11}$
$E_0$	$8.98 \cdot 10^{-7}$
$E_1$	$1.34 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.276

Color Code	
$\lambda_{80}/\lambda_5$	41/36
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.5
$T_g [^\circ C]$	553
$T_{10}^{13.0} [^\circ C]$	554
$T_{10}^{7.6} [^\circ C]$	660
$c_p [J/(g \cdot K)]$	0.750
$\lambda [W/(m \cdot K)]$	1.000
$\rho [g/cm^3]$	3.03
$E [10^3 N/mm^2]$	90
$\mu$	0.250
$K [10^{-6} mm^2/N]$	2.72
$HK_{0.1/20}$	540
$HG$	5
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.1	1.7	3.6	-2.2	-0.7	1.2
+20/ +40	0.0	1.8	4.2	-1.5	0.3	2.7
+60/ +80	0.0	2.1	4.8	-1.1	0.9	3.5

**N-SF2**  
**648338.272**

$n_d = 1.64769$	$v_d = 33.82$	$n_F - n_C = 0.019151$
$n_e = 1.65222$	$v_e = 33.56$	$n_{F'} - n_{C'} = 0.019435$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.60661
$n_{1970.1}$	1970.1	1.61268
$n_{1529.6}$	1529.6	1.61944
$n_{1060.0}$	1060.0	1.62738
$n_t$	1014.0	1.62839
$n_s$	852.1	1.63282
$n_r$	706.5	1.63902
$n_C$	656.3	1.64210
$n_{C'}$	643.8	1.64298
$n_{632.8}$	632.8	1.64380
$n_D$	589.3	1.64752
$n_d$	587.6	1.64769
$n_e$	546.1	1.65222
$n_F$	486.1	1.66125
$n_{F'}$	480.0	1.66241
$n_g$	435.8	1.67265
$n_h$	404.7	1.68273
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.852	0.670
2325	0.896	0.760
1970	0.971	0.930
1530	0.994	0.984
1060	0.999	0.997
700	0.995	0.987
660	0.994	0.984
620	0.994	0.984
580	0.995	0.987
546	0.994	0.986
500	0.990	0.975
460	0.984	0.961
436	0.979	0.949
420	0.970	0.926
405	0.944	0.865
400	0.928	0.830
390	0.857	0.680
380	0.693	0.400
370	0.325	0.060
365	0.132	0.007
350	0.001	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2311
$P_{C,s}$	0.4848
$P_{d,C}$	0.2918
$P_{e,d}$	0.2364
$P_{g,F}$	0.5950
$P_{i,h}$	
$P'_{s,t}$	0.2277
$P'_{C',s}$	0.5228
$P'_{d,C'}$	0.2425
$P'_{e,d}$	0.2329
$P'_{g,F'}$	0.5267
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0106
$\Delta P_{C,s}$	0.0031
$\Delta P_{F,e}$	0.0012
$\Delta P_{g,F}$	0.0081
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.47343127
$B_2$	0.163681849
$B_3$	1.36920899
$C_1$	0.0109019098
$C_2$	0.0585683687
$C_3$	127.404933

Color Code	
$\lambda_{80}/\lambda_5$	40/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$3.10 \cdot 10^{-6}$
$D_1$	$1.75 \cdot 10^{-8}$
$D_2$	$6.62 \cdot 10^{-11}$
$E_0$	$7.51 \cdot 10^{-7}$
$E_1$	$8.99 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.277

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.7
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.8
$T_g [^\circ C]$	608
$T_{10}^{13.0} [^\circ C]$	607
$T_{10}^{7.6} [^\circ C]$	731
$c_p [J/(g \cdot K)]$	0.790
$\lambda [W/(m \cdot K)]$	1.140
$\rho [g/cm^3]$	2.72
$E [10^3 N/mm^2]$	86
$\mu$	0.231
$K [10^{-6} mm^2/N]$	3.06
$HK_{0.1/20}$	539
HG	
CR	1
FR	0
SR	1
AR	1.2
PR	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.4	4.8	6.4	1.3	2.5	4.1
+20/ +40	3.5	5.1	7.0	2.1	3.6	5.5
+60/ +80	4.2	5.9	8.0	3.1	4.8	6.9



## N-SF4 755274.315

$n_d = 1.75513$	$v_d = 27.38$	$n_F - n_C = 0.027583$
$n_e = 1.76164$	$v_e = 27.16$	$n_{F'} - n_{C'} = 0.028044$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70434
$n_{1970.1}$	1970.1	1.71052
$n_{1529.6}$	1529.6	1.71773
$n_{1060.0}$	1060.0	1.72717
$n_t$	1014.0	1.72846
$n_s$	852.1	1.73432
$n_r$	706.5	1.74286
$n_C$	656.3	1.74719
$n_{C'}$	643.8	1.74842
$n_{632.8}$	632.8	1.74959
$n_D$	589.3	1.75489
$n_d$	587.6	1.75513
$n_e$	546.1	1.76164
$n_F$	486.1	1.77477
$n_{F'}$	480.0	1.77647
$n_g$	435.8	1.79158
$n_h$	404.7	1.80668
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.776	0.530
2325	0.816	0.602
1970	0.943	0.863
1530	0.992	0.980
1060	0.999	0.999
700	0.994	0.984
660	0.991	0.978
620	0.992	0.979
580	0.993	0.982
546	0.991	0.977
500	0.979	0.948
460	0.961	0.906
436	0.942	0.861
420	0.916	0.802
405	0.861	0.687
400	0.830	0.628
390	0.740	0.471
380	0.563	0.238
370	0.249	0.031
365	0.100	0.003
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2123
$P_{C,s}$	0.4666
$P_{d,C}$	0.2880
$P_{e,d}$	0.2358
$P_{g,F}$	0.6096
$P_{i,h}$	
$P'_{s,t}$	0.2088
$P'_{C',s}$	0.5030
$P'_{d,C'}$	0.2392
$P'_{e,d}$	0.2319
$P'_{g,F'}$	0.5390
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0040
$\Delta P_{C,s}$	-0.0002
$\Delta P_{F,e}$	0.0022
$\Delta P_{g,F}$	0.0118
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.67780282
$B_2$	0.282849893
$B_3$	1.63539276
$C_1$	0.012679345
$C_2$	0.0602038419
$C_3$	145.760496

Color Code	
$\lambda_{80}/\lambda_5$	43/36
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Constants of Dispersion $dn/dT$	
$D_0$	$-4.88 \cdot 10^{-6}$
$D_1$	$6.57 \cdot 10^{-9}$
$D_2$	$-2.72 \cdot 10^{-11}$
$E_0$	$9.67 \cdot 10^{-7}$
$E_1$	$1.48 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.282

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.9
$T_g [^\circ C]$	570
$T_{10}^{13.0} [^\circ C]$	559
$T_{10}^{7.6} [^\circ C]$	661
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	0.950
$\rho [g/cm^3]$	3.15
$E [10^3 N/mm^2]$	90
$\mu$	0.256
$K [10^{-6} mm^2/N]$	2.76
$HK_{0.1/20}$	520
$HG$	6
$CR$	1
$FR$	0
$SR$	1.3
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.5	1.2	3.5	-2.9	-1.2	1.0
+20/ +40	-0.7	1.4	4.2	-2.2	-0.1	2.6
+60/ +80	-0.8	1.6	4.7	-1.9	0.4	3.5

## N-SF5 673323.286

$n_d = 1.67271$	$v_d = 32.25$	$n_F - n_C = 0.020858$
$n_e = 1.67763$	$v_e = 32.00$	$n_{F'} - n_{C'} = 0.021177$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.62935
$n_{1970.1}$	1970.1	1.63554
$n_{1529.6}$	1529.6	1.64249
$n_{1060.0}$	1060.0	1.65080
$n_t$	1014.0	1.65188
$n_s$	852.1	1.65661
$n_r$	706.5	1.66330
$n_C$	656.3	1.66664
$n_{C'}$	643.8	1.66759
$n_{632.8}$	632.8	1.66848
$n_D$	589.3	1.67253
$n_d$	587.6	1.67271
$n_e$	546.1	1.67763
$n_F$	486.1	1.68750
$n_{F'}$	480.0	1.68876
$n_g$	435.8	1.69998
$n_h$	404.7	1.71106
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.758	0.500
2325	0.831	0.630
1970	0.950	0.880
1530	0.990	0.975
1060	0.998	0.994
700	0.996	0.989
660	0.995	0.987
620	0.995	0.988
580	0.996	0.991
546	0.995	0.988
500	0.990	0.976
460	0.982	0.956
436	0.973	0.935
420	0.963	0.910
405	0.928	0.830
400	0.905	0.780
390	0.826	0.620
380	0.642	0.330
370	0.276	0.040
365	0.116	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2270
$P_{C,s}$	0.4807
$P_{d,C}$	0.2910
$P_{e,d}$	0.2362
$P_{g,F}$	0.5984
$P_{i,h}$	
$P'_{s,t}$	0.2236
$P'_{C',s}$	0.5184
$P'_{d,C'}$	0.2418
$P'_{e,d}$	0.2327
$P'_{g,F'}$	0.5295
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0097
$\Delta P_{C,s}$	0.0027
$\Delta P_{F,e}$	0.0014
$\Delta P_{g,F}$	0.0088
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.52481889
$B_2$	0.187085527
$B_3$	1.42729015
$C_1$	0.011254756
$C_2$	0.0588995392
$C_3$	129.141675

Constants of Dispersion $dn/dT$	
$D_0$	$-2.51 \cdot 10^{-7}$
$D_1$	$1.07 \cdot 10^{-8}$
$D_2$	$-2.40 \cdot 10^{-11}$
$E_0$	$7.85 \cdot 10^{-7}$
$E_1$	$1.15 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.278

Color Code	
$\lambda_{80}/\lambda_5$	40/36
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.9
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	578
$T_{10}^{13.0} [^\circ C]$	576
$T_{10}^{7.6} [^\circ C]$	693
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	1.000
$\rho [g/cm^3]$	2.86
$E [10^3 N/mm^2]$	87
$\mu$	0.237
$K [10^{-6} mm^2/N]$	2.99
$HK_{0.1/20}$	620
$HG$	3
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.8	3.1	4.8	-0.5	0.8	2.5
+20/ +40	1.8	3.4	5.5	0.4	2.0	4.0
+60/ +80	1.9	3.7	6.0	0.8	2.5	4.8

## N-SF6 805254.337

$n_d = 1.80518$	$v_d = 25.36$	$n_F - n_C = 0.031750$
$n_e = 1.81266$	$v_e = 25.16$	$n_{F'} - n_{C'} = 0.032304$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.74895
$n_{1970.1}$	1970.1	1.75541
$n_{1529.6}$	1529.6	1.76307
$n_{1060.0}$	1060.0	1.77341
$n_t$	1014.0	1.77486
$n_s$	852.1	1.78144
$n_r$	706.5	1.79114
$n_C$	656.3	1.79608
$n_{C'}$	643.8	1.79749
$n_{632.8}$	632.8	1.79883
$n_D$	589.3	1.80491
$n_d$	587.6	1.80518
$n_e$	546.1	1.81266
$n_F$	486.1	1.82783
$n_{F'}$	480.0	1.82980
$n_g$	435.8	1.84738
$n_h$	404.7	1.86506
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.776	0.530
2325	0.810	0.590
1970	0.941	0.860
1530	0.991	0.978
1060	0.998	0.996
700	0.993	0.983
660	0.990	0.976
620	0.991	0.978
580	0.992	0.980
546	0.989	0.972
500	0.977	0.943
460	0.961	0.905
436	0.946	0.870
420	0.919	0.810
405	0.857	0.680
400	0.821	0.610
390	0.700	0.410
380	0.480	0.160
370	0.158	0.010
365	0.004	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2074
$P_{C,s}$	0.4610
$P_{d,C}$	0.2867
$P_{e,d}$	0.2356
$P_{g,F}$	0.6158
$P_{i,h}$	
$P'_{s,t}$	0.2039
$P'_{C',s}$	0.4969
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5443
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0031
$\Delta P_{C,s}$	-0.0010
$\Delta P_{F,e}$	0.0027
$\Delta P_{g,F}$	0.0146
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.77931763
$B_2$	0.338149866
$B_3$	2.08734474
$C_1$	0.0133714182
$C_2$	0.0617533621
$C_3$	174.01759

Constants of Dispersion $dn/dT$	
$D_0$	$-4.93 \cdot 10^{-6}$
$D_1$	$7.02 \cdot 10^{-9}$
$D_2$	$-2.40 \cdot 10^{-11}$
$E_0$	$9.84 \cdot 10^{-7}$
$E_1$	$1.54 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.29

Color Code	
$\lambda_{80}/\lambda_5$	45/37
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.3
$T_g [^\circ C]$	589
$T_{10}^{13.0} [^\circ C]$	590
$T_{10}^{7.6} [^\circ C]$	683
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.960
$\rho [g/cm^3]$	3.37
$E [10^3 N/mm^2]$	93
$\mu$	0.262
$K [10^{-6} mm^2/N]$	2.82
$HK_{0.1/20}$	550
$HG$	4
$CR$	1
$FR$	0
$SR$	2
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.7	1.2	3.9	-3.0	-1.2	1.3
+20/ +40	-0.8	1.5	4.8	-2.3	0.0	3.1
+60/ +80	-0.8	1.8	5.4	-2.0	0.6	4.1

## N-SF6HT 805254.337

$n_d = 1.80518$	$v_d = 25.36$	$n_F - n_C = 0.031750$
$n_e = 1.81266$	$v_e = 25.16$	$n_{F'} - n_{C'} = 0.032304$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.74895
$n_{1970.1}$	1970.1	1.75541
$n_{1529.6}$	1529.6	1.76307
$n_{1060.0}$	1060.0	1.77341
$n_t$	1014.0	1.77486
$n_s$	852.1	1.78144
$n_r$	706.5	1.79114
$n_C$	656.3	1.79608
$n_{C'}$	643.8	1.79749
$n_{632.8}$	632.8	1.79883
$n_D$	589.3	1.80491
$n_d$	587.6	1.80518
$n_e$	546.1	1.81266
$n_F$	486.1	1.82783
$n_{F'}$	480.0	1.82980
$n_g$	435.8	1.84738
$n_h$	404.7	1.86506
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.793	0.560
2325	0.826	0.620
1970	0.946	0.870
1530	0.992	0.980
1060	0.999	0.997
700	0.994	0.984
660	0.991	0.977
620	0.992	0.979
580	0.992	0.981
546	0.990	0.975
500	0.980	0.950
460	0.966	0.917
436	0.954	0.890
420	0.937	0.850
405	0.901	0.770
400	0.877	0.720
390	0.793	0.560
380	0.592	0.270
370	0.209	0.020
365	0.004	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2074
$P_{C,s}$	0.4610
$P_{d,C}$	0.2867
$P_{e,d}$	0.2356
$P_{g,F}$	0.6158
$P_{i,h}$	
$P'_{s,t}$	0.2039
$P'_{C',s}$	0.4969
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5443
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0031
$\Delta P_{C,s}$	-0.0010
$\Delta P_{F,e}$	0.0027
$\Delta P_{g,F}$	0.0146
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.77931763
$B_2$	0.338149866
$B_3$	2.08734474
$C_1$	0.0133714182
$C_2$	0.0617533621
$C_3$	174.01759

Color Code	
$\lambda_{80}/\lambda_5$	44/37
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	9.0
$\alpha_{+20/+300^\circ\text{C}}$ [ $10^{-6}/\text{K}$ ]	10.3
$T_g$ [ $^\circ\text{C}$ ]	589
$T_{10}^{13.0}$ [ $^\circ\text{C}$ ]	590
$T_{10}^{7.6}$ [ $^\circ\text{C}$ ]	683
$c_p$ [ $\text{J}/(\text{g}\cdot\text{K})$ ]	0.690
$\lambda$ [ $\text{W}/(\text{m}\cdot\text{K})$ ]	0.960
$\rho$ [ $\text{g}/\text{cm}^3$ ]	3.37
$E$ [ $10^3 \text{N}/\text{mm}^2$ ]	93
$\mu$	0.262
$K$ [ $10^{-6} \text{mm}^2/\text{N}$ ]	2.82
$\text{HK}_{0.1/20}$	550
$\text{HG}$	4
$\text{CR}$	1
$\text{FR}$	0
$\text{SR}$	2
$\text{AR}$	1
$\text{PR}$	1

Constants of Dispersion $dn/dT$	
$D_0$	$-4.93 \cdot 10^{-6}$
$D_1$	$7.02 \cdot 10^{-9}$
$D_2$	$-2.40 \cdot 10^{-11}$
$E_0$	$9.84 \cdot 10^{-7}$
$E_1$	$1.54 \cdot 10^{-9}$
$\lambda_{TK}$ [ $\mu\text{m}$ ]	0.29

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{rel}/\Delta T$ [ $10^{-6}/\text{K}$ ]			$\Delta n_{abs}/\Delta T$ [ $10^{-6}/\text{K}$ ]		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.7	1.2	3.9	-3.0	-1.2	1.3
+20/ +40	-0.8	1.5	4.8	-2.3	0.0	3.1
+60/ +80	-0.8	1.8	5.4	-2.0	0.6	4.1

## N-SF6HTultra 805254.337

$n_d = 1.80518$	$v_d = 25.36$	$n_F - n_C = 0.031750$
$n_e = 1.81266$	$v_e = 25.16$	$n_{F'} - n_{C'} = 0.032304$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.74895
$n_{1970.1}$	1970.1	1.75541
$n_{1529.6}$	1529.6	1.76307
$n_{1060.0}$	1060.0	1.77341
$n_t$	1014.0	1.77486
$n_s$	852.1	1.78144
$n_r$	706.5	1.79114
$n_C$	656.3	1.79608
$n_{C'}$	643.8	1.79749
$n_{632.8}$	632.8	1.79883
$n_D$	589.3	1.80491
$n_d$	587.6	1.80518
$n_e$	546.1	1.81266
$n_F$	486.1	1.82783
$n_{F'}$	480.0	1.82980
$n_g$	435.8	1.84738
$n_h$	404.7	1.86506
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.77931763
$B_2$	0.338149866
$B_3$	2.08734474
$C_1$	0.0133714182
$C_2$	0.0617533621
$C_3$	174.01759

Constants of Dispersion dn/dT	
$D_0$	$-4.93 \cdot 10^{-6}$
$D_1$	$7.02 \cdot 10^{-9}$
$D_2$	$-2.40 \cdot 10^{-11}$
$E_0$	$9.84 \cdot 10^{-7}$
$E_1$	$1.54 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.29

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.7	1.2	3.9	-3.0	-1.2	1.3
+20/ +40	-0.8	1.5	4.8	-2.3	0.0	3.1
+60/ +80	-0.8	1.8	5.4	-2.0	0.6	4.1

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.796	0.565
2325	0.826	0.620
1970	0.948	0.876
1530	0.992	0.981
1060	0.999	0.999
700	0.994	0.984
660	0.991	0.978
620	0.992	0.980
580	0.994	0.984
546	0.992	0.981
500	0.984	0.960
460	0.972	0.932
436	0.961	0.906
420	0.945	0.869
405	0.910	0.790
400	0.887	0.742
390	0.805	0.581
380	0.604	0.283
370	0.217	0.022
365	0.004	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	43/37
(* = $\lambda_{70} / \lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2074
$P_{C,s}$	0.4610
$P_{d,C}$	0.2867
$P_{e,d}$	0.2356
$P_{g,F}$	0.6158
$P_{i,h}$	
$P'_{s,t}$	0.2039
$P'_{C',s}$	0.4969
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5443
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0031
$\Delta P_{C,s}$	-0.0010
$\Delta P_{F,e}$	0.0027
$\Delta P_{g,F}$	0.0146
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6} / K]$	9.0
$\alpha_{+20/+300^\circ C} [10^{-6} / K]$	10.3
$T_g [^\circ C]$	589
$T_{10}^{13.0} [^\circ C]$	590
$T_{10}^{7.6} [^\circ C]$	683
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.960
$\rho [g/cm^3]$	3.37
$E [10^3 N/mm^2]$	93
$\mu$	0.262
$K [10^{-6} mm^2/N]$	2.82
$HK_{0.1/20}$	550
HG	4
CR	1
FR	0
SR	2
AR	1
PR	1

## N-SF8 689313.290

$n_d = 1.68894$	$v_d = 31.31$	$n_F - n_C = 0.022005$
$n_e = 1.69413$	$v_e = 31.06$	$n_{F'} - n_{C'} = 0.022346$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.64448
$n_{1970.1}$	1970.1	1.65060
$n_{1529.6}$	1529.6	1.65753
$n_{1060.0}$	1060.0	1.66600
$n_t$	1014.0	1.66711
$n_s$	852.1	1.67203
$n_r$	706.5	1.67904
$n_C$	656.3	1.68254
$n_{C'}$	643.8	1.68354
$n_{632.8}$	632.8	1.68448
$n_D$	589.3	1.68874
$n_d$	587.6	1.68894
$n_e$	546.1	1.69413
$n_F$	486.1	1.70455
$n_{F'}$	480.0	1.70589
$n_g$	435.8	1.71775
$n_h$	404.7	1.72948
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.746	0.480
2325	0.815	0.600
1970	0.946	0.870
1530	0.988	0.970
1060	0.997	0.993
700	0.995	0.987
660	0.993	0.983
620	0.993	0.983
580	0.994	0.986
546	0.993	0.983
500	0.985	0.963
460	0.976	0.940
436	0.965	0.914
420	0.950	0.880
405	0.919	0.810
400	0.901	0.770
390	0.831	0.630
380	0.672	0.370
370	0.345	0.070
365	0.158	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2236
$P_{C,s}$	0.4778
$P_{d,C}$	0.2905
$P_{e,d}$	0.2362
$P_{g,F}$	0.5999
$P_{i,h}$	
$P'_{s,t}$	0.2202
$P'_{C',s}$	0.5152
$P'_{d,C'}$	0.2413
$P'_{e,d}$	0.2326
$P'_{g,F'}$	0.5308
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0080
$\Delta P_{C,s}$	0.0019
$\Delta P_{F,e}$	0.0014
$\Delta P_{g,F}$	0.0087
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.55075812
$B_2$	0.209816918
$B_3$	1.46205491
$C_1$	0.0114338344
$C_2$	0.0582725652
$C_3$	133.24165

Constants of Dispersion $dn/dT$	
$D_0$	$-1.94 \cdot 10^{-6}$
$D_1$	$9.70 \cdot 10^{-9}$
$D_2$	$-2.34 \cdot 10^{-11}$
$E_0$	$8.32 \cdot 10^{-7}$
$E_1$	$1.15 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.276

Color Code	
$\lambda_{80}/\lambda_5$	41/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.9
$T_g [^\circ C]$	567
$T_{10}^{13.0} [^\circ C]$	564
$T_{10}^{7.6} [^\circ C]$	678
$c_p [J/(g \cdot K)]$	0.770
$\lambda [W/(m \cdot K)]$	1.030
$\rho [g/cm^3]$	2.90
$E [10^3 N/mm^2]$	88
$\mu$	0.245
$K [10^{-6} mm^2/N]$	2.95
$HK_{0.1/20}$	600
<b>HG</b>	4
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1
<b>PR</b>	1
<b>SR-J</b>	1
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.0	2.4	4.2	-1.3	0.1	1.8
+20/ +40	0.9	2.6	4.8	-0.5	1.2	3.3
+60/ +80	1.0	2.9	5.3	-0.1	1.7	4.1

N-SF10  
728285.305 $n_d = 1.72828$  $v_d = 28.53$  $n_F - n_C = 0.025524$  $n_e = 1.73430$  $v_e = 28.31$  $n_{F'} - n_{C'} = 0.025941$ 

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67981
$n_{1970.1}$	1970.1	1.68597
$n_{1529.6}$	1529.6	1.69308
$n_{1060.0}$	1060.0	1.70217
$n_t$	1014.0	1.70340
$n_s$	852.1	1.70891
$n_r$	706.5	1.71688
$n_C$	656.3	1.72091
$n_{C'}$	643.8	1.72206
$n_{632.8}$	632.8	1.72314
$n_D$	589.3	1.72806
$n_d$	587.6	1.72828
$n_e$	546.1	1.73430
$n_F$	486.1	1.74643
$n_{F'}$	480.0	1.74800
$n_g$	435.8	1.76191
$n_h$	404.7	1.77578
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.62153902
$B_2$	0.256287842
$B_3$	1.64447552
$C_1$	0.0122241457
$C_2$	0.0595736775
$C_3$	147.468793

Constants of Dispersion $dn/dT$	
$D_0$	$-4.68 \cdot 10^{-6}$
$D_1$	$7.41 \cdot 10^{-9}$
$D_2$	$-1.89 \cdot 10^{-11}$
$E_0$	$9.49 \cdot 10^{-7}$
$E_1$	$1.42 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.279

Temperature Coefficients of Refractive Index						
	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
[°C]	1060.0	e	g	1060.0	e	g
-40/ -20	-0.4	1.3	3.4	-2.7	-1.1	1.0
+20/ +40	-0.5	1.5	4.1	-2.0	-0.1	2.5
+60/ +80	-0.5	1.7	4.6	-1.7	0.5	3.4

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.847	0.660
2325	0.896	0.760
1970	0.971	0.930
1530	0.994	0.985
1060	0.996	0.990
700	0.993	0.983
660	0.990	0.976
620	0.991	0.977
580	0.991	0.978
546	0.989	0.973
500	0.978	0.945
460	0.963	0.910
436	0.946	0.870
420	0.924	0.820
405	0.867	0.700
400	0.837	0.640
390	0.727	0.450
380	0.525	0.200
370	0.176	
365	0.058	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	42/36
(* = $\lambda_{70} / \lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2160
$P_{C,s}$	0.4701
$P_{d,C}$	0.2888
$P_{e,d}$	0.2359
$P_{g,F}$	0.6066
$P_{i,h}$	
$P'_{s,t}$	0.2125
$P'_{C',s}$	0.5068
$P'_{d,C'}$	0.2398
$P'_{e,d}$	0.2321
$P'_{g,F'}$	0.5365
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0057
$\Delta P_{C,s}$	0.0007
$\Delta P_{F,e}$	0.0019
$\Delta P_{g,F}$	0.0108
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.8
$T_g [^\circ C]$	559
$T_{10}^{13.0} [^\circ C]$	549
$T_{10}^{7.6} [^\circ C]$	652
$c_p [J/(g \cdot K)]$	0.740
$\lambda [W/(m \cdot K)]$	0.960
$\rho [g/cm^3]$	3.05
$E [10^3 N/mm^2]$	87
$\mu$	0.252
$K [10^{-6} mm^2/N]$	2.92
$HK_{0.1/20}$	540
HG	5
CR	1
FR	0
SR	1
AR	1
PR	1



**N-SF11**  
**785257.322**

$n_d = 1.78472$        $v_d = 25.68$        $n_F - n_C = 0.030558$   
 $n_e = 1.79192$        $v_e = 25.47$        $n_{F'} - n_{C'} = 0.031088$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.72937
$n_{1970.1}$	1970.1	1.73600
$n_{1529.6}$	1529.6	1.74377
$n_{1060.0}$	1060.0	1.75401
$n_t$	1014.0	1.75542
$n_s$	852.1	1.76182
$n_r$	706.5	1.77119
$n_C$	656.3	1.77596
$n_{C'}$	643.8	1.77732
$n_{632.8}$	632.8	1.77860
$n_D$	589.3	1.78446
$n_d$	587.6	1.78472
$n_e$	546.1	1.79192
$n_F$	486.1	1.80651
$n_{F'}$	480.0	1.80841
$n_g$	435.8	1.82533
$n_h$	404.7	1.84235
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.73759695
$B_2$	0.313747346
$B_3$	1.89878101
$C_1$	0.013188707
$C_2$	0.0623068142
$C_3$	155.23629

Constants of Dispersion $dn/dT$	
$D_0$	$-3.56 \cdot 10^{-6}$
$D_1$	$9.20 \cdot 10^{-9}$
$D_2$	$-2.10 \cdot 10^{-11}$
$E_0$	$9.65 \cdot 10^{-7}$
$E_1$	$1.44 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.294

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.1	2.0	4.6	-2.3	-0.5	2.1
+20/ +40	0.1	2.4	5.6	-1.4	0.8	4.0
+60/ +80	0.2	2.7	6.3	-1.0	1.5	5.1

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.826	0.620
2325	0.867	0.700
1970	0.965	0.915
1530	0.994	0.985
1060	0.999	0.998
700	0.994	0.985
660	0.992	0.981
620	0.992	0.981
580	0.994	0.984
546	0.991	0.978
500	0.981	0.953
460	0.967	0.920
436	0.946	0.870
420	0.919	0.810
405	0.852	0.670
400	0.815	0.600
390	0.686	0.390
380	0.428	0.120
370	0.083	0.002
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	44/37
(* = $\lambda_{70} / \lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2095
$P_{C,s}$	0.4625
$P_{d,C}$	0.2868
$P_{e,d}$	0.2355
$P_{g,F}$	0.6156
$P_{i,h}$	
$P'_{s,t}$	0.2059
$P'_{C',s}$	0.4984
$P'_{d,C'}$	0.2381
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5442
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0052
$\Delta P_{C,s}$	-0.0003
$\Delta P_{F,e}$	0.0027
$\Delta P_{g,F}$	0.0150
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.9
$T_g [^\circ C]$	592
$T_{10}^{13.0} [^\circ C]$	590
$T_{10}^{7.6} [^\circ C]$	688
$c_p [J/(g \cdot K)]$	0.710
$\lambda [W/(m \cdot K)]$	0.950
$\rho [g/cm^3]$	3.22
$E [10^3 N/mm^2]$	92
$\mu$	0.257
$K [10^{-6} mm^2/N]$	2.94
$HK_{0.1/20}$	615
<b>HG</b>	4
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1
<b>PR</b>	1

## N-SF14 762265.312

$n_d = 1.76182$	$v_d = 26.53$	$n_F - n_C = 0.028715$
$n_e = 1.76859$	$v_e = 26.32$	$n_{F'} - n_{C'} = 0.029204$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70954
$n_{1970.1}$	1970.1	1.71581
$n_{1529.6}$	1529.6	1.72315
$n_{1060.0}$	1060.0	1.73284
$n_t$	1014.0	1.73417
$n_s$	852.1	1.74022
$n_r$	706.5	1.74907
$n_C$	656.3	1.75356
$n_{C'}$	643.8	1.75485
$n_{632.8}$	632.8	1.75606
$n_D$	589.3	1.76157
$n_d$	587.6	1.76182
$n_e$	546.1	1.76859
$n_F$	486.1	1.78228
$n_{F'}$	480.0	1.78405
$n_g$	435.8	1.79986
$n_h$	404.7	1.81570
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.799	0.570
2325	0.837	0.640
1970	0.950	0.880
1530	0.992	0.980
1060	0.999	0.998
700	0.994	0.985
660	0.991	0.978
620	0.992	0.980
580	0.994	0.984
546	0.992	0.981
500	0.984	0.960
460	0.971	0.930
436	0.963	0.910
420	0.946	0.870
405	0.910	0.790
400	0.891	0.750
390	0.821	0.610
380	0.642	0.330
370	0.276	0.040
365	0.095	0.004
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2107
$P_{C,s}$	0.4646
$P_{d,C}$	0.2875
$P_{e,d}$	0.2357
$P_{g,F}$	0.6122
$P_{i,h}$	
$P'_{s,t}$	0.2072
$P'_{C',s}$	0.5008
$P'_{d,C'}$	0.2387
$P'_{e,d}$	0.2318
$P'_{g,F'}$	0.5413
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0044
$\Delta P_{C,s}$	-0.0002
$\Delta P_{F,e}$	0.0024
$\Delta P_{g,F}$	0.0130
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.69022361
$B_2$	0.288870052
$B_3$	1.7045187
$C_1$	0.0130512113
$C_2$	0.061369188
$C_3$	149.517689

Constants of Dispersion $dn/dT$	
$D_0$	$-5.56 \cdot 10^{-6}$
$D_1$	$7.09 \cdot 10^{-9}$
$D_2$	$-1.09 \cdot 10^{-11}$
$E_0$	$9.85 \cdot 10^{-7}$
$E_1$	$1.39 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.287

Color Code	
$\lambda_{80}/\lambda_5$	42/36
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	10.9
$T_g [^\circ C]$	566
$T_{10}^{13.0} [^\circ C]$	562
$T_{10}^{7.6} [^\circ C]$	657
$c_p [J/(g \cdot K)]$	0.750
$\lambda [W/(m \cdot K)]$	1.000
$\rho [g/cm^3]$	3.12
$E [10^3 N/mm^2]$	88
$\mu$	0.259
$K [10^{-6} mm^2/N]$	2.89
$HK_{0.1/20}$	515
$HG$	5
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.9	0.9	3.4	-3.2	-1.5	0.9
+20/ +40	-1.1	1.1	4.1	-2.6	-0.4	2.5
+60/ +80	-1.1	1.4	4.7	-2.2	0.2	3.4

## N-SF15 699302.292

$n_d = 1.69892$	$v_d = 30.20$	$n_F - n_C = 0.023142$
$n_e = 1.70438$	$v_e = 29.96$	$n_{F'} - n_{C'} = 0.023511$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.65267
$n_{1970.1}$	1970.1	1.65899
$n_{1529.6}$	1529.6	1.66616
$n_{1060.0}$	1060.0	1.67494
$n_t$	1014.0	1.67609
$n_s$	852.1	1.68122
$n_r$	706.5	1.68854
$n_C$	656.3	1.69222
$n_{C'}$	643.8	1.69326
$n_{632.8}$	632.8	1.69425
$n_D$	589.3	1.69872
$n_d$	587.6	1.69892
$n_e$	546.1	1.70438
$n_F$	486.1	1.71536
$n_{F'}$	480.0	1.71677
$n_g$	435.8	1.72933
$n_h$	404.7	1.74182
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.764	0.510
2325	0.837	0.640
1970	0.954	0.890
1530	0.990	0.976
1060	0.998	0.996
700	0.995	0.988
660	0.993	0.983
620	0.994	0.984
580	0.994	0.986
546	0.994	0.985
500	0.988	0.970
460	0.977	0.943
436	0.964	0.912
420	0.941	0.860
405	0.887	0.740
400	0.857	0.680
390	0.746	0.480
380	0.525	0.200
370	0.158	0.010
365	0.044	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2216
$P_{C,s}$	0.4751
$P_{d,C}$	0.2897
$P_{e,d}$	0.2360
$P_{g,F}$	0.6038
$P_{i,h}$	
$P'_{s,t}$	0.2181
$P'_{C',s}$	0.5122
$P'_{d,C'}$	0.2406
$P'_{e,d}$	0.2323
$P'_{g,F'}$	0.5341
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0085
$\Delta P_{C,s}$	0.0018
$\Delta P_{F,e}$	0.0018
$\Delta P_{g,F}$	0.0108
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.57055634
$B_2$	0.218987094
$B_3$	1.50824017
$C_1$	0.0116507014
$C_2$	0.0597856897
$C_3$	132.709339

Constants of Dispersion $dn/dT$	
$D_0$	$-7.15 \cdot 10^{-7}$
$D_1$	$1.04 \cdot 10^{-8}$
$D_2$	$-2.62 \cdot 10^{-11}$
$E_0$	$8.56 \cdot 10^{-7}$
$E_1$	$1.29 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.281

Color Code	
$\lambda_{80}/\lambda_5$	42/37
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.3
$T_g [^\circ C]$	580
$T_{10}^{13.0} [^\circ C]$	578
$T_{10}^{7.6} [^\circ C]$	692
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	1.040
$\rho [g/cm^3]$	2.92
$E [10^3 N/mm^2]$	90
$\mu$	0.243
$K [10^{-6} mm^2/N]$	3.04
$HK_{0.1/20}$	610
$HG$	3
$CR$	1
$FR$	0
$SR$	1
$AR$	1
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.6	3.1	5.0	-0.7	0.8	2.6
+20/ +40	1.6	3.4	5.8	0.2	2.0	4.3
+60/ +80	1.7	3.7	6.4	0.6	2.6	5.2

**N-SF57**  
**847238.353**

$n_d = 1.84666$        $v_d = 23.78$        $n_F - n_C = 0.035604$   
 $n_e = 1.85504$        $v_e = 23.59$        $n_{F'} - n_{C'} = 0.036247$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.78502
$n_{1970.1}$	1970.1	1.79190
$n_{1529.6}$	1529.6	1.80011
$n_{1060.0}$	1060.0	1.81138
$n_t$	1014.0	1.81296
$n_s$	852.1	1.82023
$n_r$	706.5	1.83099
$n_C$	656.3	1.83650
$n_{C'}$	643.8	1.83807
$n_{632.8}$	632.8	1.83956
$n_D$	589.3	1.84635
$n_d$	587.6	1.84666
$n_e$	546.1	1.85504
$n_F$	486.1	1.87210
$n_{F'}$	480.0	1.87432
$n_g$	435.8	1.89423
$n_h$	404.7	1.91440
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.87543831
$B_2$	0.37375749
$B_3$	2.30001797
$C_1$	0.0141749518
$C_2$	0.0640509927
$C_3$	177.389795

Constants of Dispersion $dn/dT$	
$D_0$	$-4.51 \cdot 10^{-6}$
$D_1$	$8.73 \cdot 10^{-9}$
$D_2$	$-1.64 \cdot 10^{-11}$
$E_0$	$1.07 \cdot 10^{-6}$
$E_1$	$1.57 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.295

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.5	1.7	4.9	-2.9	-0.8	2.3
+20/ +40	-0.5	2.2	6.0	-2.1	0.6	4.3
+60/ +80	-0.4	2.6	6.9	-1.6	1.3	5.6

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.806	0.584
2325	0.838	0.642
1970	0.956	0.893
1530	0.992	0.980
1060	0.999	0.997
700	0.991	0.977
660	0.987	0.969
620	0.988	0.971
580	0.990	0.975
546	0.986	0.965
500	0.971	0.930
460	0.949	0.877
436	0.919	0.810
420	0.872	0.710
405	0.782	0.540
400	0.733	0.460
390	0.574	0.250
380	0.302	0.050
370	0.063	0.001
365	0.003	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	42/37*
(* = $\lambda_{70} / \lambda_5$ )	

Remarks

Relative Partial Dispersion	
$P_{s,t}$	0.2042
$P_{C,s}$	0.4568
$P_{d,C}$	0.2855
$P_{e,d}$	0.2353
$P_{g,F}$	0.6216
$P_{i,h}$	
$P'_{s,t}$	0.2005
$P'_{C,s}$	0.4922
$P'_{d,C'}$	0.2369
$P'_{e,d}$	0.2311
$P'_{g,F'}$	0.5493
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0032
$\Delta P_{C,s}$	-0.0015
$\Delta P_{F,e}$	0.0033
$\Delta P_{g,F}$	0.0178
$\Delta P_{i,g}$	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.9
$T_g [^\circ C]$	629
$T_{10}^{13.0} [^\circ C]$	616
$T_{10}^{7.6} [^\circ C]$	716
$c_p [J/(g \cdot K)]$	0.660
$\lambda [W/(m \cdot K)]$	0.990
$\rho [g/cm^3]$	3.53
$E [10^3 N/mm^2]$	96
$\mu$	0.260
$K [10^{-6} mm^2/N]$	2.78
$HK_{0.1/20}$	520
<b>HG</b>	4
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1
<b>PR</b>	1

## N-SF57HT 847238.353

$n_d = 1.84666$	$v_d = 23.78$	$n_F - n_C = 0.035604$
$n_e = 1.85504$	$v_e = 23.59$	$n_{F'} - n_{C'} = 0.036247$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.78502
$n_{1970.1}$	1970.1	1.79190
$n_{1529.6}$	1529.6	1.80011
$n_{1060.0}$	1060.0	1.81138
$n_t$	1014.0	1.81296
$n_s$	852.1	1.82023
$n_r$	706.5	1.83099
$n_C$	656.3	1.83650
$n_{C'}$	643.8	1.83807
$n_{632.8}$	632.8	1.83956
$n_D$	589.3	1.84635
$n_d$	587.6	1.84666
$n_e$	546.1	1.85504
$n_F$	486.1	1.87210
$n_{F'}$	480.0	1.87432
$n_g$	435.8	1.89423
$n_h$	404.7	1.91440
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.806	0.584
2325	0.838	0.642
1970	0.956	0.893
1530	0.992	0.980
1060	0.999	0.998
700	0.992	0.979
660	0.988	0.971
620	0.989	0.973
580	0.991	0.977
546	0.987	0.967
500	0.972	0.932
460	0.951	0.883
436	0.928	0.830
420	0.896	0.760
405	0.831	0.630
400	0.793	0.560
390	0.657	0.350
380	0.382	0.090
370	0.063	0.001
365	0.003	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2042
$P_{C,s}$	0.4568
$P_{d,C}$	0.2855
$P_{e,d}$	0.2353
$P_{g,F}$	0.6216
$P_{i,h}$	
$P'_{s,t}$	0.2005
$P'_{C',s}$	0.4922
$P'_{d,C'}$	0.2369
$P'_{e,d}$	0.2311
$P'_{g,F'}$	0.5493
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0032
$\Delta P_{C,s}$	-0.0015
$\Delta P_{F,e}$	0.0033
$\Delta P_{g,F}$	0.0178
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.87543831
$B_2$	0.37375749
$B_3$	2.30001797
$C_1$	0.0141749518
$C_2$	0.0640509927
$C_3$	177.389795

Constants of Dispersion dn/dT	
$D_0$	$-4.51 \cdot 10^{-6}$
$D_1$	$8.73 \cdot 10^{-9}$
$D_2$	$-1.64 \cdot 10^{-11}$
$E_0$	$1.07 \cdot 10^{-6}$
$E_1$	$1.57 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.295

Color Code	
$\lambda_{80}/\lambda_5$	41/37*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	

### Other Properties

$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.9
$T_g [^\circ C]$	629
$T_{10}^{13.0} [^\circ C]$	616
$T_{10}^{7.6} [^\circ C]$	716
$c_p [J/(g \cdot K)]$	0.660
$\lambda [W/(m \cdot K)]$	0.990
$\rho [g/cm^3]$	3.53
$E [10^3 N/mm^2]$	96
$\mu$	0.260
$K [10^{-6} mm^2/N]$	2.78
$HK_{0.1/20}$	520
HG	4
CR	1
FR	0
SR	1
AR	1
PR	1

### Temperature Coefficients of Refractive Index

[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.5	1.7	4.9	-2.9	-0.8	2.3
+20/ +40	-0.5	2.2	6.0	-2.1	0.6	4.3
+60/ +80	-0.4	2.6	6.9	-1.6	1.3	5.6

## N-SF57HTultra 847238.353

$n_d = 1.84666$	$v_d = 23.78$	$n_F - n_C = 0.035604$
$n_e = 1.85504$	$v_e = 23.59$	$n_{F'} - n_{C'} = 0.036247$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.78502
$n_{1970.1}$	1970.1	1.79190
$n_{1529.6}$	1529.6	1.80011
$n_{1060.0}$	1060.0	1.81138
$n_t$	1014.0	1.81296
$n_s$	852.1	1.82023
$n_r$	706.5	1.83099
$n_C$	656.3	1.83650
$n_{C'}$	643.8	1.83807
$n_{632.8}$	632.8	1.83956
$n_D$	589.3	1.84635
$n_d$	587.6	1.84666
$n_e$	546.1	1.85504
$n_F$	486.1	1.87210
$n_{F'}$	480.0	1.87432
$n_g$	435.8	1.89423
$n_h$	404.7	1.91440
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.806	0.584
2325	0.838	0.642
1970	0.956	0.893
1530	0.992	0.980
1060	0.999	0.998
700	0.995	0.988
660	0.994	0.985
620	0.993	0.983
580	0.992	0.981
546	0.989	0.973
500	0.978	0.947
460	0.962	0.908
436	0.943	0.864
420	0.917	0.805
405	0.864	0.693
400	0.830	0.627
390	0.702	0.413
380	0.420	0.114
370	0.063	0.001
365	0.003	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2042
$P_{C,s}$	0.4568
$P_{d,C}$	0.2855
$P_{e,d}$	0.2353
$P_{g,F}$	0.6216
$P_{i,h}$	
$P'_{s,t}$	0.2005
$P'_{C',s}$	0.4922
$P'_{d,C'}$	0.2369
$P'_{e,d}$	0.2311
$P'_{g,F'}$	0.5493
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0032
$\Delta P_{C,s}$	-0.0015
$\Delta P_{F,e}$	0.0033
$\Delta P_{g,F}$	0.0178
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.87543831
$B_2$	0.37375749
$B_3$	2.30001797
$C_1$	0.0141749518
$C_2$	0.0640509927
$C_3$	177.389795

Color Code	
$\lambda_{80}/\lambda_5$	40/37*
(* = $\lambda_{70}/\lambda_5$ )	

Other Properties	
$\alpha_{-30/+70^\circ\text{C}} [10^{-6}/\text{K}]$	8.5
$\alpha_{+20/+300^\circ\text{C}} [10^{-6}/\text{K}]$	9.9
$T_g [^\circ\text{C}]$	629
$T_{10}^{13.0} [^\circ\text{C}]$	616
$T_{10}^{7.6} [^\circ\text{C}]$	716
$c_p [\text{J}/(\text{g}\cdot\text{K})]$	0.660
$\lambda [\text{W}/(\text{m}\cdot\text{K})]$	0.990
$\rho [\text{g}/\text{cm}^3]$	3.53
$E [10^3 \text{N}/\text{mm}^2]$	96
$\mu$	0.260
$K [10^{-6} \text{mm}^2/\text{N}]$	2.78
$\text{HK}_{0.1/20}$	520
$\text{HG}$	4
$\text{CR}$	1
$\text{FR}$	0
$\text{SR}$	1
$\text{AR}$	1
$\text{PR}$	1

Constants of Dispersion $dn/dT$	
$D_0$	$-4.51 \cdot 10^{-6}$
$D_1$	$8.73 \cdot 10^{-9}$
$D_2$	$-1.64 \cdot 10^{-11}$
$E_0$	$1.07 \cdot 10^{-6}$
$E_1$	$1.57 \cdot 10^{-9}$
$\lambda_{TK} [\mu\text{m}]$	0.295

Remarks	

Temperature Coefficients of Refractive Index						
[ $^\circ\text{C}$ ]	$\Delta n_{\text{rel}}/\Delta T [10^{-6}/\text{K}]$			$\Delta n_{\text{abs}}/\Delta T [10^{-6}/\text{K}]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.5	1.7	4.9	-2.9	-0.8	2.3
+20/ +40	-0.5	2.2	6.0	-2.1	0.6	4.3
+60/ +80	-0.4	2.6	6.9	-1.6	1.3	5.6

## N-SF66 923209.400

$n_d = 1.92286$	$v_d = 20.88$	$n_F - n_C = 0.044199$
$n_e = 1.93322$	$v_e = 20.70$	$n_{F'} - n_{C'} = 0.045076$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.84839
$n_{1970.1}$	1970.1	1.85665
$n_{1529.6}$	1529.6	1.86650
$n_{1060.0}$	1060.0	1.87999
$n_t$	1014.0	1.88189
$n_s$	852.1	1.89064
$n_r$	706.5	1.90368
$n_C$	656.3	1.91039
$n_{C'}$	643.8	1.91232
$n_{632.8}$	632.8	1.91414
$n_D$	589.3	1.92248
$n_d$	587.6	1.92286
$n_e$	546.1	1.93322
$n_F$	486.1	1.95459
$n_{F'}$	480.0	1.95739
$n_g$	435.8	1.98285
$n_h$	404.7	
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.793	0.560
2325	0.837	0.640
1970	0.947	0.873
1530	0.989	0.973
1060	0.996	0.991
700	0.991	0.977
660	0.987	0.968
620	0.983	0.958
580	0.976	0.940
546	0.963	0.910
500	0.928	0.830
460	0.887	0.740
436	0.831	0.630
420	0.758	0.500
405	0.592	0.270
400	0.504	0.180
390	0.250	0.020
380	0.040	
370	0.001	
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.1980
$P_{C,s}$	0.4467
$P_{d,C}$	0.2822
$P_{e,d}$	0.2345
$P_{g,F}$	0.6394
$P_{i,h}$	
$P'_{s,t}$	0.1941
$P'_{C',s}$	0.4808
$P'_{d,C'}$	0.2339
$P'_{e,d}$	0.2299
$P'_{g,F'}$	0.5647
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0007
$\Delta P_{C,s}$	-0.0048
$\Delta P_{F,e}$	0.0059
$\Delta P_{g,F}$	0.0307
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.0245976
$B_2$	0.470187196
$B_3$	2.59970433
$C_1$	0.0147053225
$C_2$	0.0692998276
$C_3$	161.817601

Constants of Dispersion $dn/dT$	
$D_0$	$-4.30 \cdot 10^{-6}$
$D_1$	$1.15 \cdot 10^{-8}$
$D_2$	$4.31 \cdot 10^{-11}$
$E_0$	$9.62 \cdot 10^{-7}$
$E_1$	$1.62 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.322

Color Code	
$\lambda_{80}/\lambda_5$	45/39*
(* = $\lambda_{70}/\lambda_5$ )	

Remarks

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	5.9
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.8
$T_g [^\circ C]$	710
$T_{10}^{13.0} [^\circ C]$	711
$T_{10}^{7.6} [^\circ C]$	806
$c_p [J/(g \cdot K)]$	0.540
$\lambda [W/(m \cdot K)]$	0.800
$\rho [g/cm^3]$	4.00
$E [10^3 N/mm^2]$	95
$\mu$	0.259
$K [10^{-6} mm^2/N]$	2.86
$HK_{0.1/20}$	440
<b>HG</b>	3
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.4	1.9	5.8	-2.9	-0.7	3.1
+20/ +40	-0.5	2.4	7.3	-2.1	0.8	5.5
+60/ +80	0.1	3.4	8.9	-1.2	2.1	7.5



## P-SF8 689313.290

$n_d = 1.68893$	$v_d = 31.25$	$n_F - n_C = 0.022046$
$n_e = 1.69414$	$v_e = 31.01$	$n_{F'} - n_{C'} = 0.022386$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.64480
$n_{1970.1}$	1970.1	1.65079
$n_{1529.6}$	1529.6	1.65760
$n_{1060.0}$	1060.0	1.66598
$n_t$	1014.0	1.66708
$n_s$	852.1	1.67200
$n_r$	706.5	1.67901
$n_C$	656.3	1.68252
$n_{C'}$	643.8	1.68353
$n_{632.8}$	632.8	1.68447
$n_D$	589.3	1.68874
$n_d$	587.6	1.68893
$n_e$	546.1	1.69414
$n_F$	486.1	1.70457
$n_{F'}$	480.0	1.70591
$n_g$	435.8	1.71778
$n_h$	404.7	1.72950
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.727	0.450
2325	0.799	0.570
1970	0.937	0.850
1530	0.991	0.977
1060	0.999	0.997
700	0.995	0.988
660	0.994	0.984
620	0.994	0.984
580	0.995	0.987
546	0.994	0.986
500	0.989	0.972
460	0.980	0.950
436	0.971	0.930
420	0.959	0.900
405	0.937	0.850
400	0.924	0.820
390	0.872	0.710
380	0.746	0.480
370	0.468	0.150
365	0.260	0.040
350	0.001	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2229
$P_{C,s}$	0.4776
$P_{d,C}$	0.2905
$P_{e,d}$	0.2362
$P_{g,F}$	0.5991
$P_{i,h}$	
$P'_{s,t}$	0.2195
$P'_{C',s}$	0.5150
$P'_{d,C'}$	0.2414
$P'_{e,d}$	0.2326
$P'_{g,F'}$	0.5301
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0072
$\Delta P_{C,s}$	0.0018
$\Delta P_{F,e}$	0.0013
$\Delta P_{g,F}$	0.0079
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.55370411
$B_2$	0.206332561
$B_3$	1.39708831
$C_1$	0.011658267
$C_2$	0.0582087757
$C_3$	130.748028

Constants of Dispersion $dn/dT$	
$D_0$	$-4.27 \cdot 10^{-6}$
$D_1$	$8.16 \cdot 10^{-9}$
$D_2$	$-2.00 \cdot 10^{-11}$
$E_0$	$9.02 \cdot 10^{-7}$
$E_1$	$1.22 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.272

Color Code	
$\lambda_{80}/\lambda_5$	40/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	11.1
$T_g [^\circ C]$	524
$T_{10}^{13.0} [^\circ C]$	531
$T_{10}^{7.6} [^\circ C]$	629
$c_p [J/(g \cdot K)]$	0.790
$\lambda [W/(m \cdot K)]$	1.020
$AT [^\circ C]$	580
$\rho [g/cm^3]$	2.90
$E [10^3 N/mm^2]$	86
$\mu$	0.253
$K [10^{-6} mm^2/N]$	2.73
$HK_{0.1/20}$	533
<b>HG</b>	
<b>Abrasion Aa</b>	200
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1.2
<b>PR</b>	1
<b>SR-J</b>	1
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	-0.2	1.3	3.2	-2.4	-1.0	0.8
+20/ +40	-0.3	1.5	3.7	-1.7	0.0	2.2
+60/ +80	-0.3	1.7	4.1	-1.4	0.5	3.0

## P-SF68 005210.619

$n_d = 2.00520$	$v_d = 21.00$	$n_F - n_C = 0.047867$
$n_e = 2.01643$	$v_e = 20.82$	$n_{F'} - n_{C'} = 0.048826$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.93381
$n_{1970.1}$	1970.1	1.93968
$n_{1529.6}$	1529.6	1.94732
$n_{1060.0}$	1060.0	1.95970
$n_t$	1014.0	1.96160
$n_s$	852.1	1.97063
$n_r$	706.5	1.98449
$n_C$	656.3	1.99171
$n_{C'}$	643.8	1.99380
$n_{632.8}$	632.8	1.99576
$n_D$	589.3	2.00479
$n_d$	587.6	2.00520
$n_e$	546.1	2.01643
$n_F$	486.1	2.03958
$n_{F'}$	480.0	2.04262
$n_g$	435.8	2.07018
$n_h$	404.7	
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.793	0.560
2325	0.905	0.780
1970	0.976	0.940
1530	0.996	0.990
1060	0.999	0.998
700	0.997	0.993
660	0.996	0.989
620	0.994	0.985
580	0.989	0.973
546	0.976	0.940
500	0.905	0.780
460	0.758	0.500
436	0.574	0.250
420	0.302	0.050
405	0.036	
400	0.007	
390		
380		
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.1885
$P_{C,s}$	0.4406
$P_{d,C}$	0.2817
$P_{e,d}$	0.2346
$P_{g,F}$	0.6392
$P_{i,h}$	
$P'_{s,t}$	0.1848
$P'_{C',s}$	0.4746
$P'_{d,C'}$	0.2336
$P'_{e,d}$	0.2300
$P'_{g,F'}$	0.5644
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0156
$\Delta P_{C,s}$	-0.0113
$\Delta P_{F,e}$	0.0063
$\Delta P_{g,F}$	0.0308
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	2.3330067
$B_2$	0.452961396
$B_3$	1.25172339
$C_1$	0.0168838419
$C_2$	0.0716086325
$C_3$	118.707479

Constants of Dispersion $dn/dT$	
$D_0$	$1.55 \cdot 10^{-5}$
$D_1$	$2.30 \cdot 10^{-8}$
$D_2$	$-3.46 \cdot 10^{-11}$
$E_0$	$2.76 \cdot 10^{-6}$
$E_1$	$2.93 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.297

Color Code	
$\lambda_{80}/\lambda_5$	49/41*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.7
$T_g [^\circ C]$	428
$T_{10}^{13.0} [^\circ C]$	430
$T_{10}^{7.6} [^\circ C]$	504
$c_p [J/(g \cdot K)]$	0.370
$\lambda [W/(m \cdot K)]$	0.650
$AT [^\circ C]$	468
$\rho [g/cm^3]$	6.19
$E [10^3 N/mm^2]$	79
$\mu$	0.275
$K [10^{-6} mm^2/N]$	1.61
$HK_{0.1/20}$	404
$HG$	
$Abrasion Aa$	298
$CR$	1
$FR$	5
$SR$	53.3
$AR$	2.3
$PR$	2.3
$SR-J$	4
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	13.7	21.5	32.3	11.1	18.8	29.5
+20/ +40	15.2	24.1	36.5	13.5	22.3	34.6
+60/ +80	16.2	25.8	39.1	15.4	25.3	39.2

## P-SF69 723292.293

$n_d = 1.72250$	$v_d = 29.23$	$n_F - n_C = 0.024718$
$n_e = 1.72883$	$v_e = 29.00$	$n_{F'} - n_{C'} = 0.025116$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67440
$n_{1970.1}$	1970.1	1.68073
$n_{1529.6}$	1529.6	1.68797
$n_{1060.0}$	1060.0	1.69705
$n_t$	1014.0	1.69826
$n_s$	852.1	1.70367
$n_r$	706.5	1.71144
$n_C$	656.3	1.71535
$n_{C'}$	643.8	1.71647
$n_{632.8}$	632.8	1.71752
$n_D$	589.3	1.72229
$n_d$	587.6	1.72250
$n_e$	546.1	1.72833
$n_F$	486.1	1.74007
$n_{F'}$	480.0	1.74158
$n_g$	435.8	1.75502
$n_h$	404.7	1.76840
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.804	0.580
2325	0.857	0.680
1970	0.954	0.890
1530	0.993	0.983
1060	0.999	0.998
700	0.998	0.994
660	0.997	0.993
620	0.997	0.993
580	0.998	0.994
546	0.997	0.992
500	0.993	0.983
460	0.985	0.964
436	0.976	0.940
420	0.963	0.910
405	0.933	0.840
400	0.915	0.800
390	0.847	0.660
380	0.686	0.390
370	0.364	0.080
365	0.160	0.009
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2188
$P_{C,s}$	0.4727
$P_{d,C}$	0.2893
$P_{e,d}$	0.2360
$P_{g,F}$	0.6050
$P_{i,h}$	
$P'_{s,t}$	0.2153
$P'_{C',s}$	0.5096
$P'_{d,C'}$	0.2403
$P'_{e,d}$	0.2322
$P'_{g,F'}$	0.5352
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0078
$\Delta P_{C,s}$	0.0016
$\Delta P_{F,e}$	0.0017
$\Delta P_{g,F}$	0.0104
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.62594647
$B_2$	0.235927609
$B_3$	1.67434623
$C_1$	0.0121696677
$C_2$	0.0600710405
$C_3$	145.651908

Color Code	
$\lambda_{80}/\lambda_5$	41/36
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding

Constants of Dispersion $dn/dT$	
$D_0$	$-2.55 \cdot 10^{-6}$
$D_1$	$5.68 \cdot 10^{-9}$
$D_2$	$-2.85 \cdot 10^{-11}$
$E_0$	$9.50 \cdot 10^{-7}$
$E_1$	$1.54 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.275

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	9.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	11.1
$T_g [^\circ C]$	508
$T_{10}^{13.0} [^\circ C]$	508
$T_{10}^{7.6} [^\circ C]$	602
$c_p [J/(g \cdot K)]$	0.820
$\lambda [W/(m \cdot K)]$	1.120
$AT [^\circ C]$	547
$\rho [g/cm^3]$	2.93
$E [10^3 N/mm^2]$	96
$\mu$	0.251
$K [10^{-6} mm^2/N]$	2.66
$HK_{0.1/20}$	612
<b>HG</b>	
<b>Abrasion Aa</b>	0
<b>CR</b>	
<b>FR</b>	
<b>SR</b>	
<b>AR</b>	
<b>PR</b>	
<b>SR-J</b>	1
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	0.9	2.5	4.6	-1.4	0.1	2.1
+20/ +40	0.6	2.6	5.2	-0.8	1.1	3.6
+60/ +80	0.5	2.8	5.6	-0.6	1.6	4.4

**SF1**  
**717295.446**

$n_d = 1.71736$	$v_d = 29.51$	$n_F - n_C = 0.024307$
$n_e = 1.72310$	$v_e = 29.29$	$n_{F'} - n_{C'} = 0.024687$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67352
$n_{1970.1}$	1970.1	1.67855
$n_{1529.6}$	1529.6	1.68449
$n_{1060.0}$	1060.0	1.69258
$n_t$	1014.0	1.69371
$n_s$	852.1	1.69888
$n_r$	706.5	1.70647
$n_C$	656.3	1.71031
$n_{C'}$	643.8	1.71141
$n_{632.8}$	632.8	1.71245
$n_D$	589.3	1.71715
$n_d$	587.6	1.71736
$n_e$	546.1	1.72310
$n_F$	486.1	1.73462
$n_{F'}$	480.0	1.73610
$n_g$	435.8	1.74916
$n_h$	404.7	1.76201
$n_i$	365.0	1.78580
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.842	0.650
2325	0.882	0.730
1970	0.959	0.900
1530	0.994	0.985
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.998	0.996
500	0.997	0.993
460	0.994	0.984
436	0.990	0.976
420	0.984	0.961
405	0.971	0.930
400	0.967	0.920
390	0.946	0.870
380	0.910	0.790
370	0.837	0.640
365	0.758	0.500
350	0.300	0.030
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2127
$P_{C,s}$	0.4705
$P_{d,C}$	0.2899
$P_{e,d}$	0.2364
$P_{g,F}$	0.5983
$P_{i,h}$	0.9791
$P'_{s,t}$	0.2094
$P'_{C',s}$	0.5078
$P'_{d,C'}$	0.2409
$P'_{e,d}$	0.2327
$P'_{g,F'}$	0.5292
$P'_{i,h}$	0.9640

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0018
$\Delta P_{C,s}$	-0.0012
$\Delta P_{F,e}$	0.0009
$\Delta P_{g,F}$	0.0042
$\Delta P_{i,g}$	0.0307

Constants of Dispersion Formula	
$B_1$	1.55912923
$B_2$	0.284246288
$B_3$	0.968842926
$C_1$	0.0121481001
$C_2$	0.0534549042
$C_3$	112.174809

Color Code	
$\lambda_{80}/\lambda_5$	39/34
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
lead containing glass type

Constants of Dispersion $dn/dT$	
$D_0$	$4.84 \cdot 10^{-6}$
$D_1$	$1.70 \cdot 10^{-8}$
$D_2$	$-4.52 \cdot 10^{-11}$
$E_0$	$1.38 \cdot 10^{-6}$
$E_1$	$1.26 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.259

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.8
$T_g [^\circ C]$	417
$T_{10}^{13.0} [^\circ C]$	415
$T_{10}^{7.6} [^\circ C]$	566
$c_p [J/(g \cdot K)]$	0.430
$\lambda [W/(m \cdot K)]$	0.660
$\rho [g/cm^3]$	4.46
$E [10^3 N/mm^2]$	56
$\mu$	0.232
$K [10^{-6} mm^2/N]$	1.80
$HK_{0.1/20}$	390
<b>HG</b>	1
<b>CR</b>	2
<b>FR</b>	1
<b>SR</b>	3.2
<b>AR</b>	2.3
<b>PR</b>	3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.5	7.0	10.1	2.2	4.7	7.7
+20/ +40	5.0	7.9	11.3	3.6	6.4	9.8
+60/ +80	5.3	8.4	12.1	4.2	7.3	10.9

**SF2**  
**648339.386**

$n_d = 1.64769$	$v_d = 33.85$	$n_F - n_C = 0.019135$
$n_e = 1.65222$	$v_e = 33.60$	$n_{F'} - n_{C'} = 0.019412$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.61003
$n_{1970.1}$	1970.1	1.61494
$n_{1529.6}$	1529.6	1.62055
$n_{1060.0}$	1060.0	1.62766
$n_t$	1014.0	1.62861
$n_s$	852.1	1.63289
$n_r$	706.5	1.63902
$n_C$	656.3	1.64210
$n_{C'}$	643.8	1.64297
$n_{632.8}$	632.8	1.64379
$n_D$	589.3	1.64752
$n_d$	587.6	1.64769
$n_e$	546.1	1.65222
$n_F$	486.1	1.66123
$n_{F'}$	480.0	1.66238
$n_g$	435.8	1.67249
$n_h$	404.7	1.68233
$n_i$	365.0	1.70027
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.826	0.620
2325	0.872	0.710
1970	0.950	0.880
1530	0.994	0.985
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.994
620	0.998	0.995
580	0.998	0.995
546	0.998	0.995
500	0.997	0.993
460	0.995	0.988
436	0.993	0.982
420	0.990	0.975
405	0.985	0.962
400	0.981	0.954
390	0.967	0.920
380	0.946	0.870
370	0.910	0.790
365	0.877	0.720
350	0.672	0.370
334	0.110	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2233
$P_{C,s}$	0.4813
$P_{d,C}$	0.2923
$P_{e,d}$	0.2367
$P_{g,F}$	0.5886
$P_{i,h}$	0.9376
$P'_{s,t}$	0.2201
$P'_{C',s}$	0.5196
$P'_{d,C'}$	0.2430
$P'_{e,d}$	0.2334
$P'_{g,F'}$	0.5209
$P'_{i,h}$	0.9242

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0009
$\Delta P_{C,s}$	-0.0005
$\Delta P_{F,e}$	0.0004
$\Delta P_{g,F}$	0.0017
$\Delta P_{i,g}$	0.0112

Constants of Dispersion Formula	
$B_1$	1.40301821
$B_2$	0.231767504
$B_3$	0.939056586
$C_1$	0.0105795466
$C_2$	0.0493226978
$C_3$	112.405955

Color Code	
$\lambda_{80}/\lambda_5$	37/33
(*= $\lambda_{70}/\lambda_5$ )	

**Remarks**  
lead containing glass type, step 0.5 available

Constants of Dispersion $dn/dT$	
$D_0$	$1.10 \cdot 10^{-6}$
$D_1$	$1.75 \cdot 10^{-8}$
$D_2$	$-1.29 \cdot 10^{-11}$
$E_0$	$1.08 \cdot 10^{-6}$
$E_1$	$1.03 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.249

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	441
$T_{10}^{13.0} [^\circ C]$	428
$T_{10}^{7.6} [^\circ C]$	600
$c_p [J/(g \cdot K)]$	0.498
$\lambda [W/(m \cdot K)]$	0.735
$\rho [g/cm^3]$	3.86
$E [10^3 N/mm^2]$	55
$\mu$	0.227
$K [10^{-6} mm^2/N]$	2.62
$HK_{0.1/20}$	410
<b>HG</b>	2
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	2
<b>AR</b>	2.3
<b>PR</b>	2

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.3	4.0	6.0	0.1	1.8	3.7
+20/ +40	2.7	4.6	6.9	1.3	3.2	5.4
+60/ +80	3.1	5.2	7.6	2.0	4.1	6.4

**SF4**  
**755276.479**

$n_d = 1.75520$	$v_d = 27.58$	$n_F - n_C = 0.027383$
$n_e = 1.76167$	$v_e = 27.37$	$n_{F'} - n_{C'} = 0.027829$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.70789
$n_{1970.1}$	1970.1	1.71294
$n_{1529.6}$	1529.6	1.71904
$n_{1060.0}$	1060.0	1.72765
$n_t$	1014.0	1.72888
$n_s$	852.1	1.73456
$n_r$	706.5	1.74300
$n_C$	656.3	1.74730
$n_{C'}$	643.8	1.74853
$n_{632.8}$	632.8	1.74969
$n_D$	589.3	1.75496
$n_d$	587.6	1.75520
$n_e$	546.1	1.76167
$n_F$	486.1	1.77468
$n_{F'}$	480.0	1.77636
$n_g$	435.8	1.79121
$n_h$	404.7	1.80589
$n_i$	365.0	1.83330
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.847	0.660
2325	0.887	0.740
1970	0.963	0.910
1530	0.996	0.989
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.998	0.996
500	0.996	0.991
460	0.992	0.980
436	0.987	0.967
420	0.980	0.950
405	0.963	0.910
400	0.954	0.890
390	0.924	0.820
380	0.862	0.690
370	0.727	0.450
365	0.601	0.280
350	0.090	
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2076
$P_{C,s}$	0.4650
$P_{d,C}$	0.2886
$P_{e,d}$	0.2361
$P_{g,F}$	0.6036
$P_{i,h}$	1.0012
$P'_{s,t}$	0.2042
$P'_{C',s}$	0.5018
$P'_{d,C'}$	0.2398
$P'_{e,d}$	0.2323
$P'_{g,F'}$	0.5337
$P'_{i,h}$	0.9851

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0032
$\Delta P_{C,s}$	-0.0022
$\Delta P_{F,e}$	0.0014
$\Delta P_{g,F}$	0.0062
$\Delta P_{i,g}$	0.0443

Constants of Dispersion Formula	
$B_1$	1.61957826
$B_2$	0.339493189
$B_3$	1.02566931
$C_1$	0.0125502104
$C_2$	0.0544559822
$C_3$	117.652222

Color Code	
$\lambda_{80}/\lambda_5$	40/35
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Constants of Dispersion $dn/dT$	
$D_0$	$5.60 \cdot 10^{-6}$
$D_1$	$1.70 \cdot 10^{-8}$
$D_2$	$-5.27 \cdot 10^{-11}$
$E_0$	$1.54 \cdot 10^{-6}$
$E_1$	$1.46 \cdot 10^{-9}$
$\lambda_{TK}[\mu m]$	0.266

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.0
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.9
$T_g [^\circ C]$	420
$T_{10}^{13.0} [^\circ C]$	415
$T_{10}^{7.6} [^\circ C]$	552
$c_p [J/(g \cdot K)]$	0.410
$\lambda [W/(m \cdot K)]$	0.650
$\rho [g/cm^3]$	4.79
$E [10^3 N/mm^2]$	56
$\mu$	0.241
$K [10^{-6} mm^2/N]$	1.36
$HK_{0.1/20}$	390
<b>HG</b>	1
<b>CR</b>	1
<b>FR</b>	2
<b>SR</b>	4.3
<b>AR</b>	2.3
<b>PR</b>	3.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	5.1	8.1	11.8	2.8	5.7	9.4
+20/ +40	5.7	9.2	13.3	4.3	7.7	11.8
+60/ +80	6.0	9.7	14.2	4.9	8.5	13.0

**SF5**  
**673322.407**

$n_d = 1.67270$	$v_d = 32.21$	$n_F - n_C = 0.020885$
$n_e = 1.67764$	$v_e = 31.97$	$n_{F'} - n_{C'} = 0.021195$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.63289
$n_{1970.1}$	1970.1	1.63785
$n_{1529.6}$	1529.6	1.64359
$n_{1060.0}$	1060.0	1.65104
$n_t$	1014.0	1.65206
$n_s$	852.1	1.65664
$n_r$	706.5	1.66327
$n_C$	656.3	1.66661
$n_{C'}$	643.8	1.66756
$n_{632.8}$	632.8	1.66846
$n_D$	589.3	1.67252
$n_d$	587.6	1.67270
$n_e$	546.1	1.67764
$n_F$	486.1	1.68750
$n_{F'}$	480.0	1.68876
$n_g$	435.8	1.69986
$n_h$	404.7	1.71069
$n_i$	365.0	1.73056
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.847	0.660
2325	0.887	0.740
1970	0.959	0.900
1530	0.995	0.987
1060	0.998	0.996
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.996
546	0.998	0.996
500	0.997	0.993
460	0.995	0.988
436	0.993	0.982
420	0.989	0.973
405	0.983	0.959
400	0.980	0.950
390	0.967	0.920
380	0.950	0.880
370	0.915	0.800
365	0.882	0.730
350	0.626	0.310
334	0.200	
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2194
$P_{C,s}$	0.4775
$P_{d,C}$	0.2915
$P_{e,d}$	0.2366
$P_{g,F}$	0.5919
$P_{i,h}$	0.9513
$P'_{s,t}$	0.2162
$P'_{C',s}$	0.5153
$P'_{d,C'}$	0.2423
$P'_{e,d}$	0.2331
$P'_{g,F'}$	0.5237
$P'_{i,h}$	0.9374

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0010
$\Delta P_{C,s}$	-0.0005
$\Delta P_{F,e}$	0.0005
$\Delta P_{g,F}$	0.0023
$\Delta P_{i,g}$	0.0160

Constants of Dispersion Formula	
$B_1$	1.46141885
$B_2$	0.247713019
$B_3$	0.949995832
$C_1$	0.0111826126
$C_2$	0.0508594669
$C_3$	112.041888

Constants of Dispersion $dn/dT$	
$D_0$	$2.59 \cdot 10^{-6}$
$D_1$	$1.76 \cdot 10^{-8}$
$D_2$	$-2.03 \cdot 10^{-11}$
$E_0$	$1.17 \cdot 10^{-6}$
$E_1$	$1.09 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.255

Color Code	
$\lambda_{80}/\lambda_5$	37/33
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.2
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.0
$T_g [^\circ C]$	425
$T_{10}^{13.0} [^\circ C]$	421
$T_{10}^{7.6} [^\circ C]$	580
$c_p [J/(g \cdot K)]$	0.470
$\lambda [W/(m \cdot K)]$	0.690
$\rho [g/cm^3]$	4.07
$E [10^3 N/mm^2]$	56
$\mu$	0.233
$K [10^{-6} mm^2/N]$	2.28
$HK_{0.1/20}$	410
$HG$	2
$CR$	1
$FR$	1
$SR$	2
$AR$	2.3
$PR$	3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.1	5.1	7.4	0.9	2.8	5.1
+20/ +40	3.5	5.8	8.4	2.1	4.4	6.9
+60/ +80	3.9	6.4	9.2	2.8	5.2	8.0



SF6  
805254.518

$n_d = 1.80518$	$v_d = 25.43$	$n_F - n_C = 0.031660$
$n_e = 1.81265$	$v_e = 25.24$	$n_{F'} - n_{C'} = 0.032201$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75302
$n_{1970.1}$	1970.1	1.75813
$n_{1529.6}$	1529.6	1.76444
$n_{1060.0}$	1060.0	1.77380
$n_t$	1014.0	1.77517
$n_s$	852.1	1.78157
$n_r$	706.5	1.79117
$n_C$	656.3	1.79609
$n_{C'}$	643.8	1.79750
$n_{632.8}$	632.8	1.79884
$n_D$	589.3	1.80491
$n_d$	587.6	1.80518
$n_e$	546.1	1.81265
$n_F$	486.1	1.82775
$n_{F'}$	480.0	1.82970
$n_g$	435.8	1.84707
$n_h$	404.7	1.86436
$n_i$	365.0	1.89703
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Constants of Dispersion Formula	
$B_1$	1.72448482
$B_2$	0.390104889
$B_3$	1.04572858
$C_1$	0.0134871947
$C_2$	0.0569318095
$C_3$	118.557185

Constants of Dispersion $dn/dT$	
$D_0$	$6.69 \cdot 10^{-6}$
$D_1$	$1.78 \cdot 10^{-8}$
$D_2$	$-3.36 \cdot 10^{-11}$
$E_0$	$1.77 \cdot 10^{-6}$
$E_1$	$1.70 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.269

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel} / \Delta T [10^{-6} / K]$			$\Delta n_{abs} / \Delta T [10^{-6} / K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.1	9.9	14.5	3.7	7.4	11.9
+20/ +40	6.8	11.1	16.2	5.3	9.5	14.6
+60/ +80	7.3	11.8	17.4	6.1	10.6	16.1

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.887	0.740
2325	0.910	0.790
1970	0.971	0.930
1530	0.996	0.991
1060	0.999	0.999
700	0.999	0.996
660	0.998	0.996
620	0.998	0.995
580	0.999	0.996
546	0.998	0.996
500	0.996	0.991
460	0.991	0.978
436	0.982	0.955
420	0.967	0.920
405	0.933	0.840
400	0.915	0.800
390	0.847	0.660
380	0.720	0.440
370	0.442	0.130
365	0.246	0.030
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Color Code	
$\lambda_{80} / \lambda_5$	42/36
(* = $\lambda_{70} / \lambda_5$ )	

Remarks	
lead containing glass type	

Relative Partial Dispersion	
$P_{s,t}$	0.2020
$P_{C,s}$	0.4588
$P_{d,C}$	0.2871
$P_{e,d}$	0.2359
$P_{g,F}$	0.6102
$P_{i,h}$	1.0316
$P'_{s,t}$	0.1986
$P'_{C,s}$	0.4950
$P'_{d,C'}$	0.2384
$P'_{e,d}$	0.2319
$P'_{g,F'}$	0.5393
$P'_{i,h}$	1.0143

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0048
$\Delta P_{C,s}$	-0.0033
$\Delta P_{F,e}$	0.0020
$\Delta P_{g,F}$	0.0092
$\Delta P_{i,g}$	0.0669

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.0
$T_g [^\circ C]$	423
$T_{10}^{13.0} [^\circ C]$	410
$T_{10}^{7.6} [^\circ C]$	538
$c_p [J/(g \cdot K)]$	0.389
$\lambda [W/(m \cdot K)]$	0.673
$\rho [g/cm^3]$	5.18
$E [10^3 N/mm^2]$	55
$\mu$	0.244
$K [10^{-6} mm^2/N]$	0.65
$HK_{0.1/20}$	370
HG	1
CR	2
FR	3
SR	51.3
AR	2.3
PR	3.3

## SF6HT 805254.518

$n_d = 1.80518$	$v_d = 25.43$	$n_F - n_C = 0.031660$
$n_e = 1.81265$	$v_e = 25.24$	$n_{F'} - n_{C'} = 0.032201$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.75302
$n_{1970.1}$	1970.1	1.75813
$n_{1529.6}$	1529.6	1.76444
$n_{1060.0}$	1060.0	1.77380
$n_t$	1014.0	1.77517
$n_s$	852.1	1.78157
$n_r$	706.5	1.79117
$n_C$	656.3	1.79609
$n_{C'}$	643.8	1.79750
$n_{632.8}$	632.8	1.79884
$n_D$	589.3	1.80491
$n_d$	587.6	1.80518
$n_e$	546.1	1.81265
$n_F$	486.1	1.82775
$n_{F'}$	480.0	1.82970
$n_g$	435.8	1.84707
$n_h$	404.7	1.86436
$n_i$	365.0	1.89703
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.887	0.740
2325	0.910	0.790
1970	0.971	0.930
1530	0.996	0.991
1060	0.999	0.999
700	0.999	0.996
660	0.998	0.996
620	0.998	0.995
580	0.999	0.996
546	0.998	0.996
500	0.996	0.991
460	0.992	0.981
436	0.987	0.967
420	0.977	0.943
405	0.954	0.890
400	0.941	0.860
390	0.891	0.750
380	0.770	0.520
370	0.504	0.180
365	0.302	0.050
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2020
$P_{C,s}$	0.4588
$P_{d,C}$	0.2871
$P_{e,d}$	0.2359
$P_{g,F}$	0.6102
$P_{i,h}$	1.0316
$P'_{s,t}$	0.1986
$P'_{C',s}$	0.4950
$P'_{d,C'}$	0.2384
$P'_{e,d}$	0.2319
$P'_{g,F'}$	0.5393
$P'_{i,h}$	1.0143

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0048
$\Delta P_{C,s}$	-0.0033
$\Delta P_{F,e}$	0.0020
$\Delta P_{g,F}$	0.0092
$\Delta P_{i,g}$	0.0669

Constants of Dispersion Formula	
$B_1$	1.72448482
$B_2$	0.390104889
$B_3$	1.04572858
$C_1$	0.0134871947
$C_2$	0.0569318095
$C_3$	118.557185

Constants of Dispersion $dn/dT$	
$D_0$	$6.69 \cdot 10^{-6}$
$D_1$	$1.78 \cdot 10^{-8}$
$D_2$	$-3.36 \cdot 10^{-11}$
$E_0$	$1.77 \cdot 10^{-6}$
$E_1$	$1.70 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.269

Color Code	
$\lambda_{80}/\lambda_5$	41/36
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.0
$T_g [^\circ C]$	423
$T_{10}^{13.0} [^\circ C]$	410
$T_{10}^{7.6} [^\circ C]$	538
$c_p [J/(g \cdot K)]$	0.389
$\lambda [W/(m \cdot K)]$	0.673
$\rho [g/cm^3]$	5.18
$E [10^3 N/mm^2]$	55
$\mu$	0.244
$K [10^{-6} mm^2/N]$	0.65
$HK_{0.1/20}$	370
<b>HG</b>	1
<b>CR</b>	2
<b>FR</b>	3
<b>SR</b>	51.3
<b>AR</b>	2.3
<b>PR</b>	3.3

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.1	9.9	14.5	3.7	7.4	11.9
+20/ +40	6.8	11.1	16.2	5.3	9.5	14.6
+60/ +80	7.3	11.8	17.4	6.1	10.6	16.1

**SF10**  
**728284.428**

$n_d = 1.72825$	$v_d = 28.41$	$n_F - n_C = 0.025633$
$n_e = 1.73430$	$v_e = 28.19$	$n_{F'} - n_{C'} = 0.026051$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.68218
$n_{1970.1}$	1970.1	1.68750
$n_{1529.6}$	1529.6	1.69378
$n_{1060.0}$	1060.0	1.70227
$n_t$	1014.0	1.70345
$n_s$	852.1	1.70887
$n_r$	706.5	1.71681
$n_C$	656.3	1.72085
$n_{C'}$	643.8	1.72200
$n_{632.8}$	632.8	1.72309
$n_D$	589.3	1.72803
$n_d$	587.6	1.72825
$n_e$	546.1	1.73430
$n_F$	486.1	1.74648
$n_{F'}$	480.0	1.74805
$n_g$	435.8	1.76198
$n_h$	404.7	1.77579
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.862	0.690
2325	0.896	0.760
1970	0.967	0.920
1530	0.995	0.987
1060	0.999	0.997
700	0.998	0.995
660	0.997	0.993
620	0.997	0.993
580	0.998	0.995
546	0.998	0.995
500	0.996	0.989
460	0.991	0.978
436	0.984	0.961
420	0.967	0.920
405	0.910	0.790
400	0.862	0.690
390	0.672	0.370
380	0.360	0.060
370	0.080	
365	0.020	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2111
$P_{C,s}$	0.4674
$P_{d,C}$	0.2888
$P_{e,d}$	0.2361
$P_{g,F}$	0.6046
$P_{i,h}$	
$P'_{s,t}$	0.2077
$P'_{C',s}$	0.5042
$P'_{d,C'}$	0.2399
$P'_{e,d}$	0.2323
$P'_{g,F'}$	0.5346
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0012
$\Delta P_{C,s}$	-0.0017
$\Delta P_{F,e}$	0.0017
$\Delta P_{g,F}$	0.0085
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.61625977
$B_2$	0.259229334
$B_3$	1.07762317
$C_1$	0.0127534559
$C_2$	0.0581983954
$C_3$	116.60768

Color Code	
$\lambda_{80}/\lambda_5$	41/37
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Constants of Dispersion $dn/dT$	
$D_0$	$5.31 \cdot 10^{-6}$
$D_1$	$1.59 \cdot 10^{-8}$
$D_2$	$-4.07 \cdot 10^{-11}$
$E_0$	$1.28 \cdot 10^{-6}$
$E_1$	$1.32 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.27

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.5
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.4
$T_g [^\circ C]$	454
$T_{10}^{13.0} [^\circ C]$	445
$T_{10}^{7.6} [^\circ C]$	595
$c_p [J/(g \cdot K)]$	0.465
$\lambda [W/(m \cdot K)]$	0.741
$\rho [g/cm^3]$	4.28
$E [10^3 N/mm^2]$	64
$\mu$	0.232
$K [10^{-6} mm^2/N]$	1.95
$HK_{0.1/20}$	430
$HG$	1
$CR$	1
$FR$	0
$SR$	1
$AR$	1.2
$PR$	2

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.8	7.3	10.3	2.5	4.9	7.9
+20/ +40	5.3	8.1	11.6	3.8	6.6	10.0
+60/ +80	5.6	8.6	12.4	4.4	7.4	11.1

**SF11**  
**785258.474**

$n_d = 1.78472$	$v_d = 25.76$	$n_F - n_C = 0.030467$
$n_e = 1.79190$	$v_e = 25.55$	$n_{F'} - n_{C'} = 0.030997$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.73294
$n_{1970.1}$	1970.1	1.73843
$n_{1529.6}$	1529.6	1.74506
$n_{1060.0}$	1060.0	1.75445
$n_t$	1014.0	1.75579
$n_s$	852.1	1.76200
$n_r$	706.5	1.77125
$n_C$	656.3	1.77599
$n_{C'}$	643.8	1.77734
$n_{632.8}$	632.8	1.77862
$n_D$	589.3	1.78446
$n_d$	587.6	1.78472
$n_e$	546.1	1.79190
$n_F$	486.1	1.80645
$n_{F'}$	480.0	1.80834
$n_g$	435.8	1.82518
$n_h$	404.7	1.84208
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.821	0.610
2325	0.867	0.700
1970	0.971	0.930
1530	0.993	0.982
1060	0.999	0.997
700	0.997	0.993
660	0.996	0.991
620	0.996	0.991
580	0.996	0.991
546	0.996	0.989
500	0.990	0.976
460	0.976	0.940
436	0.941	0.860
420	0.867	0.700
405	0.650	0.340
400	0.525	0.200
390	0.180	0.010
380		
370		
365		
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2039
$P_{C,s}$	0.4590
$P_{d,C}$	0.2866
$P_{e,d}$	0.2356
$P_{g,F}$	0.6147
$P_{i,h}$	
$P'_{s,t}$	0.2004
$P'_{C',s}$	0.4949
$P'_{d,C'}$	0.2380
$P'_{e,d}$	0.2316
$P'_{g,F'}$	0.5433
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0043
$\Delta P_{C,s}$	-0.0040
$\Delta P_{F,e}$	0.0029
$\Delta P_{g,F}$	0.0142
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.73848403
$B_2$	0.311168974
$B_3$	1.17490871
$C_1$	0.0136068604
$C_2$	0.0615960463
$C_3$	121.922711

Color Code	
$\lambda_{80}/\lambda_5$	44/39
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing	

Constants of Dispersion $dn/dT$	
$D_0$	$1.12 \cdot 10^{-5}$
$D_1$	$1.81 \cdot 10^{-8}$
$D_2$	$-5.03 \cdot 10^{-11}$
$E_0$	$1.46 \cdot 10^{-6}$
$E_1$	$1.58 \cdot 10^{-9}$
$\lambda_{TK}[\mu m]$	0.282

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	6.8
$T_g [^\circ C]$	503
$T_{10}^{13.0} [^\circ C]$	500
$T_{10}^{7.6} [^\circ C]$	635
$c_p [J/(g \cdot K)]$	0.431
$\lambda [W/(m \cdot K)]$	0.737
$\rho [g/cm^3]$	4.74
$E [10^3 N/mm^2]$	66
$\mu$	0.235
$K [10^{-6} mm^2/N]$	1.33
$HK_{0.1/20}$	450
$HG$	1
$CR$	1
$FR$	0
$SR$	1
$AR$	1.2
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	8.4	11.7	15.8	6.1	9.2	13.3
+20/ +40	9.2	12.9	17.6	7.7	11.3	16.0
+60/ +80	9.6	13.6	18.7	8.4	12.4	17.4

## SF56A 785261.492

$n_d = 1.78470$	$v_d = 26.08$	$n_F - n_C = 0.030092$
$n_e = 1.79180$	$v_e = 25.87$	$n_{F'} - n_{C'} = 0.030603$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.73406
$n_{1970.1}$	1970.1	1.73925
$n_{1529.6}$	1529.6	1.74559
$n_{1060.0}$	1060.0	1.75473
$n_t$	1014.0	1.75606
$n_s$	852.1	1.76220
$n_r$	706.5	1.77136
$n_C$	656.3	1.77605
$n_{C'}$	643.8	1.77740
$n_{632.8}$	632.8	1.77866
$n_D$	589.3	1.78444
$n_d$	587.6	1.78470
$n_e$	546.1	1.79180
$n_F$	486.1	1.80615
$n_{F'}$	480.0	1.80800
$n_g$	435.8	1.82449
$n_h$	404.7	1.84092
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.867	0.700
2325	0.896	0.760
1970	0.967	0.920
1530	0.996	0.989
1060	0.999	0.997
700	0.998	0.995
660	0.997	0.993
620	0.998	0.994
580	0.998	0.994
546	0.998	0.994
500	0.996	0.989
460	0.990	0.974
436	0.980	0.950
420	0.959	0.900
405	0.896	0.760
400	0.857	0.680
390	0.700	0.410
380	0.398	0.100
370	0.120	0.010
365	0.040	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2040
$P_{C,s}$	0.4605
$P_{d,C}$	0.2874
$P_{e,d}$	0.2359
$P_{g,F}$	0.6098
$P_{i,h}$	
$P'_{s,t}$	0.2006
$P'_{C',s}$	0.4967
$P'_{d,C'}$	0.2387
$P'_{e,d}$	0.2319
$P'_{g,F'}$	0.5390
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0042
$\Delta P_{C,s}$	-0.0032
$\Delta P_{F,e}$	0.0021
$\Delta P_{g,F}$	0.0098
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.70579259
$B_2$	0.344223052
$B_3$	1.09601828
$C_1$	0.0133874699
$C_2$	0.0579561608
$C_3$	121.616024

Constants of Dispersion $dn/dT$	
$D_0$	$6.02 \cdot 10^{-6}$
$D_1$	$1.70 \cdot 10^{-8}$
$D_2$	$-2.61 \cdot 10^{-11}$
$E_0$	$1.63 \cdot 10^{-6}$
$E_1$	$1.59 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.269

Color Code	
$\lambda_{80}/\lambda_5$	42/37
(* = $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.9
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.8
$T_g [^\circ C]$	429
$T_{10}^{13.0} [^\circ C]$	426
$T_{10}^{7.6} [^\circ C]$	556
$c_p [J/(g \cdot K)]$	0.400
$\lambda [W/(m \cdot K)]$	0.690
$\rho [g/cm^3]$	4.92
$E [10^3 N/mm^2]$	57
$\mu$	0.239
$K [10^{-6} mm^2/N]$	1.10
$HK_{0.1/20}$	380
HG	1
CR	1
FR	1
SR	3.2
AR	2.2
PR	3.2

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	5.6	9.0	13.1	3.3	6.6	10.6
+20/ +40	6.2	10.0	14.7	4.7	8.5	13.1
+60/ +80	6.6	10.7	15.8	5.5	9.5	14.5

**SF57**  
**847238.551**

$n_d = 1.84666$	$v_d = 23.83$	$n_F - n_C = 0.035536$
$n_e = 1.85504$	$v_e = 23.64$	$n_{F'} - n_{C'} = 0.036166$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.79026
$n_{1970.1}$	1970.1	1.79539
$n_{1529.6}$	1529.6	1.80187
$n_{1060.0}$	1060.0	1.81185
$n_t$	1014.0	1.81335
$n_s$	852.1	1.82038
$n_r$	706.5	1.83102
$n_C$	656.3	1.83650
$n_{C'}$	643.8	1.83808
$n_{632.8}$	632.8	1.83957
$n_D$	589.3	1.84636
$n_d$	587.6	1.84666
$n_e$	546.1	1.85504
$n_F$	486.1	1.87204
$n_{F'}$	480.0	1.87425
$n_g$	435.8	1.89393
$n_h$	404.7	1.91366
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.891	0.750
2325	0.910	0.790
1970	0.971	0.930
1530	0.996	0.991
1060	0.999	0.997
700	0.998	0.996
660	0.998	0.994
620	0.998	0.994
580	0.998	0.994
546	0.998	0.994
500	0.994	0.986
460	0.987	0.968
436	0.971	0.930
420	0.941	0.860
405	0.882	0.730
400	0.847	0.660
390	0.727	0.450
380	0.523	0.198
370	0.160	0.010
365	0.040	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.1976
$P_{C,s}$	0.4539
$P_{d,C}$	0.2859
$P_{e,d}$	0.2356
$P_{g,F}$	0.6160
$P_{i,h}$	
$P'_{s,t}$	0.1942
$P'_{C',s}$	0.4895
$P'_{d,C'}$	0.2373
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5443
$P'_{i,h}$	

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	-0.0065
$\Delta P_{C,s}$	-0.0046
$\Delta P_{F,e}$	0.0026
$\Delta P_{g,F}$	0.0123
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.81651371
$B_2$	0.428893641
$B_3$	1.07186278
$C_1$	0.0143704198
$C_2$	0.0592801172
$C_3$	121.419942

Constants of Dispersion $dn/dT$	
$D_0$	$7.26 \cdot 10^{-6}$
$D_1$	$1.88 \cdot 10^{-8}$
$D_2$	$-5.14 \cdot 10^{-11}$
$E_0$	$1.96 \cdot 10^{-6}$
$E_1$	$1.79 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.276

Color Code	
$\lambda_{80}/\lambda_5$	40/37*
(*= $\lambda_{70}/\lambda_5$ )	

**Remarks**  
lead containing glass type, suitable for precision molding

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	414
$T_{10}^{13.0} [^\circ C]$	391
$T_{10}^{7.6} [^\circ C]$	519
$c_p [J/(g \cdot K)]$	0.360
$\lambda [W/(m \cdot K)]$	0.620
$AT [^\circ C]$	449
$\rho [g/cm^3]$	5.51
$E [10^3 N/mm^2]$	54
$\mu$	0.248
$K [10^{-6} mm^2/N]$	0.02
$HK_{0.1/20}$	350
$HG$	1
<b>Abrasion Aa</b>	344
<b>CR</b>	2
<b>FR</b>	5
<b>SR</b>	52.3
<b>AR</b>	2.3
<b>PR</b>	4.3
<b>SR-J</b>	6
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.6	11.1	16.7	4.2	8.6	14.1
+20/ +40	7.6	12.5	18.9	6.0	10.9	17.2
+60/ +80	8.0	13.4	20.1	6.8	12.1	18.8

## SF57HTultra 847238.551

$n_d = 1.84666$	$v_d = 23.83$	$n_F - n_C = 0.035536$
$n_e = 1.85504$	$v_e = 23.64$	$n_{F'} - n_{C'} = 0.036166$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.79026
$n_{1970.1}$	1970.1	1.79539
$n_{1529.6}$	1529.6	1.80187
$n_{1060.0}$	1060.0	1.81185
$n_t$	1014.0	1.81335
$n_s$	852.1	1.82038
$n_r$	706.5	1.83102
$n_C$	656.3	1.83650
$n_{C'}$	643.8	1.83808
$n_{632.8}$	632.8	1.83957
$n_D$	589.3	1.84636
$n_d$	587.6	1.84666
$n_e$	546.1	1.85504
$n_F$	486.1	1.87204
$n_{F'}$	480.0	1.87425
$n_g$	435.8	1.89393
$n_h$	404.7	1.91366
$n_i$	365.0	
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.914	0.798
2325	0.930	0.835
1970	0.980	0.951
1530	0.998	0.994
1060	0.999	0.999
700	0.999	0.998
660	0.999	0.997
620	0.999	0.997
580	0.999	0.997
546	0.999	0.997
500	0.996	0.990
460	0.991	0.978
436	0.985	0.962
420	0.971	0.930
405	0.941	0.860
400	0.924	0.820
390	0.831	0.630
380	0.621	0.304
370	0.250	0.029
365	0.100	
350		
334		
320		
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.1976
$P_{C,s}$	0.4539
$P_{d,C}$	0.2859
$P_{e,d}$	0.2356
$P_{g,F}$	0.6160
$P_{i,h}$	
$P'_{s,t}$	0.1942
$P'_{C',s}$	0.4895
$P'_{d,C'}$	0.2373
$P'_{e,d}$	0.2315
$P'_{g,F'}$	0.5443
$P'_{i,h}$	

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	-0.0065
$\Delta P_{C,s}$	-0.0046
$\Delta P_{F,e}$	0.0026
$\Delta P_{g,F}$	0.0123
$\Delta P_{i,g}$	

Constants of Dispersion Formula	
$B_1$	1.81651371
$B_2$	0.428893641
$B_3$	1.07186278
$C_1$	0.0143704198
$C_2$	0.0592801172
$C_3$	121.419942

Constants of Dispersion $dn/dT$	
$D_0$	$7.26 \cdot 10^{-6}$
$D_1$	$1.88 \cdot 10^{-8}$
$D_2$	$-5.14 \cdot 10^{-11}$
$E_0$	$1.96 \cdot 10^{-6}$
$E_1$	$1.79 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.276

Color Code	
$\lambda_{80}/\lambda_5$	39/36*
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
lead containing glass type. suitable for precision molding, step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	414
$T_{10}^{13.0} [^\circ C]$	391
$T_{10}^{7.6} [^\circ C]$	519
$c_p [J/(g \cdot K)]$	0.360
$\lambda [W/(m \cdot K)]$	0.620
$AT [^\circ C]$	449
$\rho [g/cm^3]$	5.51
$E [10^3 N/mm^2]$	54
$\mu$	0.248
$K [10^{-6} mm^2/N]$	0.02
$HK_{0.1/20}$	350
$HG$	1
$Abrasion Aa$	344
$CR$	2
$FR$	5
$SR$	52.3
$AR$	2.3
$PR$	4.3
$SR-J$	6
$WR-J$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	6.6	11.1	16.7	4.2	8.6	14.1
+20/ +40	7.6	12.5	18.9	6.0	10.9	17.2
+60/ +80	8.0	13.4	20.1	6.8	12.1	18.8



## N-KZFS11 638424.320

$n_d = 1.63775$	$v_d = 42.41$	$n_F - n_C = 0.015038$
$n_e = 1.64132$	$v_e = 42.20$	$n_{F'} - n_{C'} = 0.015198$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.59699
$n_{1970.1}$	1970.1	1.60439
$n_{1529.6}$	1529.6	1.61223
$n_{1060.0}$	1060.0	1.62044
$n_t$	1014.0	1.62139
$n_s$	852.1	1.62540
$n_r$	706.5	1.63069
$n_C$	656.3	1.63324
$n_{C'}$	643.8	1.63395
$n_{632.8}$	632.8	1.63462
$n_D$	589.3	1.63762
$n_d$	587.6	1.63775
$n_e$	546.1	1.64132
$n_F$	486.1	1.64828
$n_{F'}$	480.0	1.64915
$n_g$	435.8	1.65670
$n_h$	404.7	1.66385
$n_i$	365.0	1.67636
$n_{334.1}$	334.1	1.69037
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.507	0.183
2325	0.779	0.535
1970	0.965	0.914
1530	0.991	0.977
1060	0.999	0.999
700	0.998	0.994
660	0.997	0.992
620	0.997	0.992
580	0.997	0.992
546	0.997	0.993
500	0.996	0.989
460	0.993	0.982
436	0.991	0.978
420	0.990	0.975
405	0.988	0.971
400	0.987	0.968
390	0.983	0.957
380	0.976	0.940
370	0.963	0.910
365	0.950	0.880
350	0.882	0.730
334	0.727	0.450
320	0.468	0.150
310	0.230	0.020
300	0.048	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2664
$P_{C,s}$	0.5212
$P_{d,C}$	0.3000
$P_{e,d}$	0.2377
$P_{g,F}$	0.5605
$P_{i,h}$	0.8319
$P'_{s,t}$	0.2636
$P'_{C',s}$	0.5627
$P'_{d,C'}$	0.2499
$P'_{e,d}$	0.2352
$P'_{g,F'}$	0.4971
$P'_{i,h}$	0.8232

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0415
$\Delta P_{C,s}$	0.0194
$\Delta P_{F,e}$	-0.0039
$\Delta P_{g,F}$	-0.0120
$\Delta P_{i,g}$	-0.0617

Constants of Dispersion Formula	
$B_1$	1.3322245
$B_2$	0.28924161
$B_3$	1.15161734
$C_1$	0.0084029848
$C_2$	0.034423972
$C_3$	88.4310532

Constants of Dispersion $dn/dT$	
$D_0$	$3.34 \cdot 10^{-6}$
$D_1$	$1.16 \cdot 10^{-8}$
$D_2$	$-1.80 \cdot 10^{-11}$
$E_0$	$6.32 \cdot 10^{-7}$
$E_1$	$7.21 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.206

Color Code	
$\lambda_{80}/\lambda_5$	36/30
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding, step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.6
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.6
$T_g [^\circ C]$	551
$T_{10}^{13.0} [^\circ C]$	554
$T_{10}^{7.6} [^\circ C]$	0
$c_p [J/(g \cdot K)]$	0.690
$\lambda [W/(m \cdot K)]$	0.810
$\rho [g/cm^3]$	3.20
$E [10^3 N/mm^2]$	79
$\mu$	0.251
$K [10^{-6} mm^2/N]$	4.21
$HK_{0.1/20}$	530
<b>HG</b>	3
<b>Abrasion Aa</b>	74
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	3.4
<b>AR</b>	1
<b>PR</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	3.5	4.4	5.4	1.3	2.2	3.1
+20/ +40	3.5	4.6	5.7	2.1	3.1	4.2
+60/ +80	3.6	4.8	6.0	2.5	3.7	4.8

## N-KZFS2 558540.255

$n_d = 1.55836$	$v_d = 54.01$	$n_F - n_C = 0.010338$
$n_e = 1.56082$	$v_e = 53.83$	$n_{F'} - n_{C'} = 0.010418$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.52239
$n_{1970.1}$	1970.1	1.53011
$n_{1529.6}$	1529.6	1.53798
$n_{1060.0}$	1060.0	1.54546
$n_t$	1014.0	1.54625
$n_s$	852.1	1.54944
$n_r$	706.5	1.55337
$n_C$	656.3	1.55519
$n_{C'}$	643.8	1.55570
$n_{632.8}$	632.8	1.55617
$n_D$	589.3	1.55827
$n_d$	587.6	1.55836
$n_e$	546.1	1.56082
$n_F$	486.1	1.56553
$n_{F'}$	480.0	1.56612
$n_g$	435.8	1.57114
$n_h$	404.7	1.57580
$n_i$	365.0	1.58382
$n_{334.1}$	334.1	1.59259
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.276	0.040
2325	0.583	0.260
1970	0.915	0.800
1530	0.976	0.940
1060	0.996	0.991
700	0.998	0.996
660	0.998	0.994
620	0.998	0.994
580	0.998	0.994
546	0.998	0.994
500	0.997	0.992
460	0.995	0.987
436	0.992	0.981
420	0.990	0.975
405	0.987	0.967
400	0.985	0.963
390	0.980	0.950
380	0.971	0.930
370	0.963	0.910
365	0.954	0.890
350	0.915	0.800
334	0.810	0.590
320	0.565	0.240
310	0.246	0.030
300	0.012	
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.3080
$P_{C,s}$	0.5568
$P_{d,C}$	0.3061
$P_{e,d}$	0.2383
$P_{g,F}$	0.5419
$P_{i,h}$	0.7758
$P'_{s,t}$	0.3056
$P'_{C',s}$	0.6011
$P'_{d,C'}$	0.2552
$P'_{e,d}$	0.2365
$P'_{g,F'}$	0.4814
$P'_{i,h}$	0.7699

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0636
$\Delta P_{C,s}$	0.0280
$\Delta P_{F,e}$	-0.0044
$\Delta P_{g,F}$	-0.0111
$\Delta P_{i,g}$	-0.0440

Constants of Dispersion Formula	
$B_1$	1.23697554
$B_2$	0.153569376
$B_3$	0.903976272
$C_1$	0.00747170505
$C_2$	0.0308053556
$C_3$	70.1731084

Constants of Dispersion $dn/dT$	
$D_0$	$6.77 \cdot 10^{-6}$
$D_1$	$1.31 \cdot 10^{-8}$
$D_2$	$-1.23 \cdot 10^{-11}$
$E_0$	$3.84 \cdot 10^{-7}$
$E_1$	$5.51 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.196

Color Code	
$\lambda_{80}/\lambda_5$	34/30
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding, step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	4.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	5.4
$T_g [^\circ C]$	472
$T_{10}^{13.0} [^\circ C]$	488
$T_{10}^{7.6} [^\circ C]$	600
$c_p [J/(g \cdot K)]$	0.830
$\lambda [W/(m \cdot K)]$	0.810
$AT [^\circ C]$	533
$\rho [g/cm^3]$	2.54
$E [10^3 N/mm^2]$	66
$\mu$	0.266
$K [10^{-6} mm^2/N]$	4.02
$HK_{0.1/20}$	490
$HG$	3
$Abrasion Aa$	70
$CR$	1
$FR$	4
$SR$	52.3
$AR$	4.3
$PR$	4.2
$SR-J$	6
$WR-J$	6

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.6	5.2	5.7	2.5	3.0	3.5
+20/ +40	4.7	5.3	5.9	3.3	3.9	4.5
+60/ +80	4.8	5.5	6.2	3.8	4.5	5.1

## N-KZFS4 613445.300

$n_d = 1.61336$	$v_d = 44.49$	$n_F - n_C = 0.013785$
$n_e = 1.61664$	$v_e = 44.27$	$n_{F'} - n_{C'} = 0.013929$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57535
$n_{1970.1}$	1970.1	1.58233
$n_{1529.6}$	1529.6	1.58971
$n_{1060.0}$	1060.0	1.59739
$n_t$	1014.0	1.59828
$n_s$	852.1	1.60199
$n_r$	706.5	1.60688
$n_C$	656.3	1.60922
$n_{C'}$	643.8	1.60987
$n_{632.8}$	632.8	1.61049
$n_D$	589.3	1.61324
$n_d$	587.6	1.61336
$n_e$	546.1	1.61664
$n_F$	486.1	1.62300
$n_{F'}$	480.0	1.62380
$n_g$	435.8	1.63071
$n_h$	404.7	1.63723
$n_i$	365.0	1.64865
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.510	0.186
2325	0.749	0.486
1970	0.951	0.881
1530	0.984	0.961
1060	0.998	0.996
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.997	0.993
546	0.997	0.992
500	0.995	0.987
460	0.990	0.976
436	0.987	0.968
420	0.984	0.961
405	0.981	0.952
400	0.979	0.948
390	0.971	0.930
380	0.963	0.910
370	0.941	0.860
365	0.924	0.820
350	0.815	0.600
334	0.468	0.150
320	0.040	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2694
$P_{C,s}$	0.5240
$P_{d,C}$	0.3006
$P_{e,d}$	0.2378
$P_{g,F}$	0.5590
$P_{i,h}$	0.8284
$P'_{s,t}$	0.2666
$P'_{C',s}$	0.5657
$P'_{d,C'}$	0.2503
$P'_{e,d}$	0.2353
$P'_{g,F'}$	0.4958
$P'_{i,h}$	0.8199

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0373
$\Delta P_{C,s}$	0.0173
$\Delta P_{F,e}$	-0.0033
$\Delta P_{g,F}$	-0.0100
$\Delta P_{i,g}$	-0.0496

Constants of Dispersion Formula	
$B_1$	1.35055424
$B_2$	0.197575506
$B_3$	1.09962992
$C_1$	0.0087628207
$C_2$	0.0371767201
$C_3$	90.3866994

Constants of Dispersion $dn/dT$	
$D_0$	$1.81 \cdot 10^{-6}$
$D_1$	$1.16 \cdot 10^{-8}$
$D_2$	$-7.99 \cdot 10^{-12}$
$E_0$	$6.20 \cdot 10^{-7}$
$E_1$	$7.94 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.205

Color Code	
$\lambda_{80}/\lambda_5$	36/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
suitable for precision molding, step 0.5 available	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.2
$T_g [^\circ C]$	536
$T_{10}^{13.0} [^\circ C]$	541
$T_{10}^{7.6} [^\circ C]$	664
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	0.840
$AT [^\circ C]$	597
$\rho [g/cm^3]$	3.00
$E [10^3 N/mm^2]$	78
$\mu$	0.241
$K [10^{-6} mm^2/N]$	3.90
$HK_{0.1/20}$	520
$HG$	3
<b>Abrasion Aa</b>	130
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	3.4
<b>AR</b>	1.2
<b>PR</b>	1
<b>SR-J</b>	6
<b>WR-J</b>	4

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.7	3.5	4.4	0.5	1.3	2.2
+20/ +40	2.7	3.7	4.7	1.3	2.3	3.2
+60/ +80	2.8	3.9	5.0	1.7	2.8	3.9

## N-KZFS4HT 613445.300

$n_d = 1.61336$	$v_d = 44.49$	$n_F - n_C = 0.013785$
$n_e = 1.61664$	$v_e = 44.27$	$n_{F'} - n_{C'} = 0.013929$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.57535
$n_{1970.1}$	1970.1	1.58233
$n_{1529.6}$	1529.6	1.58971
$n_{1060.0}$	1060.0	1.59739
$n_t$	1014.0	1.59828
$n_s$	852.1	1.60199
$n_r$	706.5	1.60688
$n_C$	656.3	1.60922
$n_{C'}$	643.8	1.60987
$n_{632.8}$	632.8	1.61049
$n_D$	589.3	1.61324
$n_d$	587.6	1.61336
$n_e$	546.1	1.61664
$n_F$	486.1	1.62300
$n_{F'}$	480.0	1.62380
$n_g$	435.8	1.63071
$n_h$	404.7	1.63723
$n_i$	365.0	1.64865
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.510	0.186
2325	0.749	0.486
1970	0.951	0.881
1530	0.984	0.961
1060	0.999	0.999
700	0.998	0.994
660	0.997	0.993
620	0.997	0.992
580	0.997	0.993
546	0.997	0.993
500	0.995	0.988
460	0.992	0.980
436	0.990	0.975
420	0.988	0.971
405	0.986	0.966
400	0.985	0.962
390	0.980	0.951
380	0.973	0.934
370	0.959	0.901
365	0.948	0.874
350	0.867	0.700
334	0.549	0.223
320	0.060	0.002
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2694
$P_{C,s}$	0.5240
$P_{d,C}$	0.3006
$P_{e,d}$	0.2378
$P_{g,F}$	0.5590
$P_{i,h}$	0.8284
$P'_{s,t}$	0.2666
$P'_{C',s}$	0.5657
$P'_{d,C'}$	0.2503
$P'_{e,d}$	0.2353
$P'_{g,F'}$	0.4958
$P'_{i,h}$	0.8199

### Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"

$\Delta P_{C,t}$	0.0373
$\Delta P_{C,s}$	0.0173
$\Delta P_{F,e}$	-0.0033
$\Delta P_{g,F}$	-0.0100
$\Delta P_{i,g}$	-0.0496

Constants of Dispersion Formula	
$B_1$	1.35055424
$B_2$	0.197575506
$B_3$	1.09962992
$C_1$	0.0087628207
$C_2$	0.0371767201
$C_3$	90.3866994

Constants of Dispersion $dn/dT$	
$D_0$	$1.81 \cdot 10^{-6}$
$D_1$	$1.16 \cdot 10^{-8}$
$D_2$	$-7.99 \cdot 10^{-12}$
$E_0$	$6.20 \cdot 10^{-7}$
$E_1$	$7.94 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.205

Color Code	
$\lambda_{80}/\lambda_5$	36/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding, step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.3
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	8.2
$T_g [^\circ C]$	536
$T_{10}^{13.0} [^\circ C]$	541
$T_{10}^{7.6} [^\circ C]$	664
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	0.840
$AT [^\circ C]$	597
$\rho [g/cm^3]$	3.00
$E [10^3 N/mm^2]$	78
$\mu$	0.241
$K [10^{-6} mm^2/N]$	3.90
$HK_{0.1/20}$	520
$HG$	3
<b>Abrasion Aa</b>	130
<b>CR</b>	1
<b>FR</b>	1
<b>SR</b>	3.4
<b>AR</b>	1.2
<b>PR</b>	1
<b>SR-J</b>	6
<b>WR-J</b>	4

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.7	3.5	4.4	0.5	1.3	2.2
+20/ +40	2.7	3.7	4.7	1.3	2.3	3.2
+60/ +80	2.8	3.9	5.0	1.7	2.8	3.9

## N-KZFS5 654397.304

$n_d = 1.65412$	$v_d = 39.70$	$n_F - n_C = 0.016477$
$n_e = 1.65803$	$v_e = 39.46$	$n_{F'} - n_{C'} = 0.016675$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.61392
$n_{1970.1}$	1970.1	1.62058
$n_{1529.6}$	1529.6	1.62780
$n_{1060.0}$	1060.0	1.63577
$n_t$	1014.0	1.63673
$n_s$	852.1	1.64087
$n_r$	706.5	1.64649
$n_C$	656.3	1.64922
$n_{C'}$	643.8	1.65000
$n_{632.8}$	632.8	1.65072
$n_D$	589.3	1.65398
$n_d$	587.6	1.65412
$n_e$	546.1	1.65803
$n_F$	486.1	1.66570
$n_{F'}$	480.0	1.66667
$n_g$	435.8	1.67511
$n_h$	404.7	1.68318
$n_i$	365.0	1.69756
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.657	0.350
2325	0.826	0.620
1970	0.963	0.910
1530	0.988	0.970
1060	0.999	0.998
700	0.998	0.994
660	0.997	0.992
620	0.997	0.992
580	0.997	0.993
546	0.997	0.992
500	0.994	0.985
460	0.990	0.974
436	0.986	0.965
420	0.983	0.958
405	0.978	0.946
400	0.976	0.940
390	0.967	0.920
380	0.950	0.880
370	0.928	0.830
365	0.910	0.790
350	0.793	0.560
334	0.372	0.080
320	0.017	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2511
$P_{C,s}$	0.5070
$P_{d,C}$	0.2972
$P_{e,d}$	0.2374
$P_{g,F}$	0.5710
$P_{i,h}$	0.8729
$P'_{s,t}$	0.2481
$P'_{C',s}$	0.5473
$P'_{d,C'}$	0.2474
$P'_{e,d}$	0.2345
$P'_{g,F'}$	0.5060
$P'_{i,h}$	0.8625

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0248
$\Delta P_{C,s}$	0.0115
$\Delta P_{F,e}$	-0.0021
$\Delta P_{g,F}$	-0.0060
$\Delta P_{i,g}$	-0.0286

Constants of Dispersion Formula	
$B_1$	1.47460789
$B_2$	0.193584488
$B_3$	1.26589974
$C_1$	0.00986143816
$C_2$	0.0445477583
$C_3$	106.436258

Color Code	
$\lambda_{80}/\lambda_5$	37/32
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding, step 0.5 available

Constants of Dispersion dn/dT	
$D_0$	$4.54 \cdot 10^{-6}$
$D_1$	$1.19 \cdot 10^{-8}$
$D_2$	$2.93 \cdot 10^{-12}$
$E_0$	$6.89 \cdot 10^{-7}$
$E_1$	$8.60 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.23

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	6.4
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	7.4
$T_g [^\circ C]$	584
$T_{10}^{13.0} [^\circ C]$	593
$T_{10}^{7.6} [^\circ C]$	739
$c_p [J/(g \cdot K)]$	0.730
$\lambda [W/(m \cdot K)]$	0.950
AT [°C]	648
$\rho [g/cm^3]$	3.04
$E [10^3 N/mm^2]$	89
$\mu$	0.243
$K [10^{-6} mm^2/N]$	3.57
HK <sub>0.1/20</sub>	555
HG	
Abrasion Aa	122
CR	1
FR	0
SR	1
AR	1
PR	1
SR-J	1
WR-J	1

Temperature Coefficients of Refractive Index						
[°C]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	4.2	5.3	6.5	2.0	3.1	4.2
+20/ +40	4.2	5.5	6.8	2.8	4.0	5.4
+60/ +80	4.4	5.8	7.3	3.3	4.7	6.1

## N-KZFS8 720347.320

$n_d = 1.72047$	$v_d = 34.70$	$n_F - n_C = 0.020763$
$n_e = 1.72539$	$v_e = 34.47$	$n_{F'} - n_{C'} = 0.021046$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.67524
$n_{1970.1}$	1970.1	1.68193
$n_{1529.6}$	1529.6	1.68939
$n_{1060.0}$	1060.0	1.69816
$n_t$	1014.0	1.69927
$n_s$	852.1	1.70416
$n_r$	706.5	1.71099
$n_C$	656.3	1.71437
$n_{C'}$	643.8	1.71532
$n_{632.8}$	632.8	1.71622
$n_D$	589.3	1.72029
$n_d$	587.6	1.72047
$n_e$	546.1	1.72539
$n_F$	486.1	1.73513
$n_{F'}$	480.0	1.73637
$n_g$	435.8	1.74724
$n_h$	404.7	1.75777
$n_i$	365.0	1.77690
$n_{334.1}$	334.1	
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.764	0.510
2325	0.867	0.700
1970	0.967	0.920
1530	0.993	0.983
1060	0.999	0.999
700	0.998	0.996
660	0.998	0.995
620	0.998	0.995
580	0.998	0.995
546	0.997	0.993
500	0.994	0.985
460	0.988	0.971
436	0.982	0.955
420	0.976	0.940
405	0.967	0.920
400	0.963	0.910
390	0.946	0.870
380	0.924	0.820
370	0.887	0.740
365	0.857	0.680
350	0.665	0.360
334	0.141	0.010
320	0.042	
310		
300		
290		
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2353
$P_{C,s}$	0.4916
$P_{d,C}$	0.2940
$P_{e,d}$	0.2369
$P_{g,F}$	0.5833
$P_{i,h}$	0.9212
$P'_{s,t}$	0.2322
$P'_{C',s}$	0.5305
$P'_{d,C'}$	0.2445
$P'_{e,d}$	0.2337
$P'_{g,F'}$	0.5165
$P'_{i,h}$	0.9088

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0173
$\Delta P_{C,s}$	0.0078
$\Delta P_{F,e}$	-0.0011
$\Delta P_{g,F}$	-0.0021
$\Delta P_{i,g}$	-0.0048

Constants of Dispersion Formula	
$B_1$	1.62693651
$B_2$	0.24369876
$B_3$	1.62007141
$C_1$	0.010880863
$C_2$	0.0494207753
$C_3$	131.009163

Constants of Dispersion $dn/dT$	
$D_0$	$7.93 \cdot 10^{-7}$
$D_1$	$6.47 \cdot 10^{-9}$
$D_2$	$-5.00 \cdot 10^{-12}$
$E_0$	$7.71 \cdot 10^{-7}$
$E_1$	$1.01 \cdot 10^{-9}$
$\lambda_{TK} [\mu m]$	0.254

Color Code	
$\lambda_{80}/\lambda_5$	38/33
(*= $\lambda_{70}/\lambda_5$ )	

Remarks
suitable for precision molding, step 0.5 available

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	7.8
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.4
$T_g [^\circ C]$	509
$T_{10}^{13.0} [^\circ C]$	515
$T_{10}^{7.6} [^\circ C]$	635
$c_p [J/(g \cdot K)]$	0.760
$\lambda [W/(m \cdot K)]$	1.050
$AT [^\circ C]$	561
$\rho [g/cm^3]$	3.20
$E [10^3 N/mm^2]$	103
$\mu$	0.248
$K [10^{-6} mm^2/N]$	2.94
$HK_{0.1/20}$	570
$HG$	4
<b>Abrasion Aa</b>	152
<b>CR</b>	1
<b>FR</b>	0
<b>SR</b>	1
<b>AR</b>	1
<b>PR</b>	1
<b>SR-J</b>	1
<b>WR-J</b>	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	2.7	4.1	5.6	0.4	1.7	3.2
+20/ +40	2.4	4.0	5.8	0.9	2.5	4.2
+60/ +80	2.4	4.1	6.1	1.2	2.9	4.9

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