

Refractive Index n_d	1.766 34 1.766 342	Abbe Number ν_d	35.82	Dispersion $n_F - n_C$	0.021 393
Refractive Index n_e	1.771 415	Abbe Number ν_e	35.59	Dispersion $n_{F'} - n_{C'}$	0.021 677

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.720 69
n_{1970}	1.970 09	1.727 21
n_{1530}	1.529 58	1.734 54
n_{1129}	1.128 64	1.741 82
n_t	1.013 98	1.744 50
n_s	0.852 11	1.749 51
$n_{A'}$	0.768 19	1.753 13
n_F	0.706 52	1.756 55
n_C	0.656 27	1.760 04
$n_{C'}$	0.643 85	1.761 03
n_{He-Ne}	0.632 8	1.761 96
n_D	0.589 29	1.766 15
n_d	0.587 56	1.766 34
n_e	0.546 07	1.771 41
n_F	0.486 13	1.781 43
$n_{F'}$	0.479 99	1.782 70
n_{He-Cd}	0.441 57	1.792 15
n_g	0.435 835	1.793 82
n_h	0.404 656	1.804 53
n_i	0.365 015	1.823 78

Constants of Dispersion Formula	
A_1	1.736 898 64E+00
A_2	2.873 625 41E-01
A_3	1.851 261 36E+00
B_1	1.078 665 06E-02
B_2	4.580 850 77E-02
B_3	1.496 469 00E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	112.1
Rigidity Modulus G (GPa)	44.4
Poisson's Ratio σ	0.261
Knoop Hardness Hk[Class]	590
Abrasion Aa	135

Partial Dispersions	
$n_C - n_t$	0.015 542
$n_C - n_{A'}$	0.006 912
$n_d - n_C$	0.006 303
$n_e - n_C$	0.011 376
$n_g - n_d$	0.027 481
$n_g - n_F$	0.012 391
$n_h - n_g$	0.010 708
$n_i - n_g$	0.029 960
$n_{C'} - n_t$	0.016 531
$n_e - n_{C'}$	0.010 387
$n_{F'} - n_e$	0.011 290
$n_i - n_{F'}$	0.041 078

Relative Partial Dispersions	
$\theta_{C,t}$	0.726 5
$\theta_{C,A'}$	0.323 1
$\theta_{d,C}$	0.294 6
$\theta_{e,C}$	0.531 8
$\theta_{g,d}$	1.284 6
$\theta_{g,F}$	0.579 2
$\theta_{h,g}$	0.500 5
$\theta_{i,g}$	1.400 5
$\theta'_{C,t}$	0.762 6
$\theta'_{e,C'}$	0.479 2
$\theta'_{F',e}$	0.520 8
$\theta'_{i,F'}$	1.895 0

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.011 8
$\Delta\theta_{C,A'}$	0.003 8
$\Delta\theta_{g,d}$	-0.005 7
$\Delta\theta_{g,F}$	-0.004 3
$\Delta\theta_{i,g}$	-0.024 6

Coloring			
λ_{80}	395	λ_5	325
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	366	$\lambda_{0.05}$	322
CCI			
B	G	R	
0.00	1.09	1.08	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	0.02
330	0.17
340	0.42
350	0.62
360	0.75
370	0.84
380	0.90
390	0.932
400	0.952
420	0.970
440	0.976
460	0.982
480	0.987
500	0.991
550	0.997
600	0.996
650	0.995
700	0.997
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.997
1 600	0.995
1 800	0.987
2 000	0.975
2 200	0.942
2 400	0.87

Thermal Properties	
Strain Point StP (°C)	493
Annealing Point AP (°C)	516
Transformation Temperature Tg (°C)	528
Yield Point At (°C)	578
Softening Point SP (°C)	623
Expansion Coefficients (-30 °C ~ 70 °C)	84
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	107
Thermal Conductivity λ (W/(m·K))	1.10

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	64
-90 ~ -80	66
-80 ~ -70	68
-70 ~ -60	69
-60 ~ -50	71
-50 ~ -40	73
-40 ~ -30	75
-30 ~ -20	76
-20 ~ -10	78
-10 ~ 0	80
0 ~ 10	81
10 ~ 20	83
20 ~ 30	84
30 ~ 40	86
40 ~ 50	88
50 ~ 60	89
60 ~ 70	90
70 ~ 80	92
80 ~ 90	93
90 ~ 100	95
100 ~ 110	96
110 ~ 120	97
120 ~ 130	99
130 ~ 140	100
140 ~ 150	101
150 ~ 160	102
160 ~ 170	103
170 ~ 180	105
180 ~ 190	106
190 ~ 200	107
200 ~ 210	108
210 ~ 220	109
220 ~ 230	110
230 ~ 240	111
240 ~ 250	112
250 ~ 260	113
260 ~ 270	114
270 ~ 280	115
280 ~ 290	115
290 ~ 300	116

Other Properties	
Photoelastic Constant β nm/(cm ³ 105Pa)	2.40
Specific Gravity d	3.47
Remarks	

Temperature Coefficients of Refractive Index												
Range of Temperature (°C)	$\Delta n_{rel} / \Delta T$ (10 ⁻⁶ K ⁻¹)											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	1.8	2.2	2.6	2.8	2.8	3.1	3.5	4.0	4.1	4.8	5.7	7.4
-60 ~ -40	1.7	1.9	2.4	2.6	2.6	2.9	3.3	3.9	4.0	4.8	5.7	7.4
-40 ~ -20	1.5	1.8	2.4	2.6	2.6	2.9	3.2	3.9	4.0	4.9	5.7	7.6
-20 ~ 0	1.5	1.8	2.3	2.5	2.6	3.0	3.3	4.0	4.1	4.9	5.9	7.9
0 ~ 20	1.5	1.8	2.4	2.7	2.6	3.0	3.4	4.1	4.2	5.1	6.0	8.1
20 ~ 40	1.5	1.8	2.5	2.7	2.7	3.1	3.5	4.3	4.4	5.3	6.3	8.4
40 ~ 60	1.6	1.9	2.5	2.7	2.8	3.2	3.6	4.4	4.5	5.5	6.5	8.7
60 ~ 80	1.7	2.0	2.6	2.9	2.9	3.3	3.7	4.5	4.6	5.6	6.8	9.1
80 ~ 100	1.6	2.0	2.7	3.0	3.1	3.4	3.8	4.7	4.8	5.8	7.0	9.3
100 ~ 120	1.7	2.0	2.7	3.1	3.1	3.5	3.9	4.8	4.9	6.0	7.2	9.6
120 ~ 140	1.7	2.1	2.9	3.1	3.2	3.6	4.0	4.9	5.0	6.2	7.4	9.9
140 ~ 160	1.7	2.1	2.9	3.2	3.2	3.6	4.1	5.0	5.2	6.3	7.6	10.3
160 ~ 180	1.7	2.1	2.9	3.1	3.2	3.7	4.1	5.1	5.2	6.4	7.7	10.5