

Refractive Index n_d	1.720 00 1.719 995	Abbe Number ν_d	50.23	Dispersion $n_F - n_C$	0.014 334
Refractive Index n_e	1.723 409	Abbe Number ν_e	49.98	Dispersion $n_{F'} - n_{C'}$	0.014 474

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.681 59
n_{1970}	1.970 09	1.688 41
n_{1530}	1.529 58	1.695 67
n_{1129}	1.128 64	1.702 13
n_t	1.013 98	1.704 30
n_s	0.852 11	1.708 14
$n_{A'}$	0.768 19	1.710 79
n_F	0.706 52	1.713 23
n_C	0.656 27	1.715 67
$n_{C'}$	0.643 85	1.716 36
n_{He-Ne}	0.632 8	1.717 00
n_D	0.589 29	1.719 87
n_d	0.587 56	1.720 00
n_e	0.546 07	1.723 41
n_F	0.486 13	1.730 00
$n_{F'}$	0.479 99	1.730 83
n_{He-Cd}	0.441 57	1.736 86
n_g	0.435 835	1.737 92
n_h	0.404 656	1.744 55
n_i	0.365 015	1.755 97

Constants of Dispersion Formula	
A_1	1.528 125 75E+00
A_2	3.679 652 67E-01
A_3	1.117 517 84E+00
B_1	7.768 176 44E-03
B_2	2.720 265 48E-02
B_3	8.886 974 00E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	52.2
Phosphate Resistance PR	3.0

Mechanical Properties	
Young's Modulus E (GPa)	106.1
Rigidity Modulus G (GPa)	41.0
Poisson's Ratio σ	0.294
Knoop Hardness Hk[Class]	640
Abrasion Aa	89

Partial Dispersions	
$n_C - n_t$	0.011 368
$n_C - n_{A'}$	0.004 885
$n_d - n_C$	0.004 325
$n_e - n_C$	0.007 739
$n_g - n_d$	0.017 923
$n_g - n_F$	0.007 914
$n_h - n_g$	0.006 628
$n_i - n_g$	0.018 051
$n_{C'} - n_t$	0.012 054
$n_e - n_{C'}$	0.007 053
$n_{F'} - n_e$	0.007 421
$n_i - n_{F'}$	0.025 139

Relative Partial Dispersions	
$\theta_{C,t}$	0.793 1
$\theta_{C,A'}$	0.340 8
$\theta_{d,C}$	0.301 7
$\theta_{e,C}$	0.539 9
$\theta_{g,d}$	1.250 4
$\theta_{g,F}$	0.552 1
$\theta_{h,g}$	0.462 4
$\theta_{i,g}$	1.259 3
$\theta'_{C,t}$	0.832 8
$\theta'_{e,C'}$	0.487 3
$\theta'_{F',e}$	0.512 7
$\theta'_{i,F'}$	1.736 8

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.010 7
$\Delta\theta_{C,A'}$	0.004 0
$\Delta\theta_{g,d}$	-0.010 0
$\Delta\theta_{g,F}$	-0.008 1
$\Delta\theta_{i,g}$	-0.045 1

Coloring			
λ_{80}	380	λ_5	310
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	357	$\lambda_{0.05}$	309
CCI			
B	G	R	
0.00	0.59	0.60	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	0.07
320	0.22
330	0.40
340	0.58
350	0.72
360	0.83
370	0.89
380	0.937
390	0.959
400	0.972
420	0.983
440	0.988
460	0.991
480	0.994
500	0.996
550	0.998
600	0.997
650	0.998
700	0.998
800	0.998
900	0.998
1 000	0.998
1 200	0.998
1 400	0.997
1 600	0.996
1 800	0.990
2 000	0.971
2 200	0.922
2 400	0.71

Thermal Properties	
Strain Point StP (°C)	582
Annealing Point AP (°C)	600
Transformation Temperature Tg (°C)	628
Yield Point At (°C)	658
Softening Point SP (°C)	692
Expansion Coefficients (-30 °C ~ 70 °C)	62
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	76
Thermal Conductivity λ (W/(m·K))	0.850

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	48
-90 ~ -80	50
-80 ~ -70	51
-70 ~ -60	52
-60 ~ -50	54
-50 ~ -40	55
-40 ~ -30	56
-30 ~ -20	57
-20 ~ -10	58
-10 ~ 0	59
0 ~ 10	60
10 ~ 20	61
20 ~ 30	63
30 ~ 40	64
40 ~ 50	64
50 ~ 60	65
60 ~ 70	66
70 ~ 80	67
80 ~ 90	68
90 ~ 100	69
100 ~ 110	70
110 ~ 120	71
120 ~ 130	71
130 ~ 140	72
140 ~ 150	73
150 ~ 160	74
160 ~ 170	74
170 ~ 180	75
180 ~ 190	76
190 ~ 200	76
200 ~ 210	77
210 ~ 220	77
220 ~ 230	78
230 ~ 240	78
240 ~ 250	79
250 ~ 260	79
260 ~ 270	80
270 ~ 280	80
280 ~ 290	80
290 ~ 300	81

Other Properties	
Photoelastic Constant β nm/(cm ³ 105Pa)	2.17
Specific Gravity d	3.86
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	3.5	3.7	4.0	4.1	4.1	4.3	4.5	4.8	4.9	5.3	5.8	6.6
-60 ~ -40	3.4	3.5	3.9	4.1	4.1	4.3	4.4	4.8	4.8	5.2	5.8	6.6
-40 ~ -20	3.4	3.6	3.9	4.0	4.1	4.2	4.4	4.9	4.9	5.4	5.8	6.7
-20 ~ 0	3.4	3.7	4.1	4.2	4.2	4.4	4.6	4.9	5.0	5.4	6.0	6.9
0 ~ 20	3.6	3.8	4.1	4.2	4.3	4.5	4.6	5.0	5.1	5.6	6.1	7.0
20 ~ 40	3.7	3.9	4.3	4.4	4.4	4.6	4.8	5.2	5.3	5.7	6.3	7.3
40 ~ 60	3.8	4.0	4.4	4.5	4.6	4.8	5.0	5.4	5.4	6.0	6.5	7.5
60 ~ 80	3.9	4.2	4.6	4.7	4.7	4.9	5.2	5.6	5.6	6.1	6.6	7.6
80 ~ 100	4.0	4.2	4.6	4.7	4.8	5.0	5.3	5.7	5.8	6.3	6.8	7.8
100 ~ 120	4.1	4.3	4.7	4.9	4.9	5.1	5.3	5.9	5.9	6.4	7.0	8.0
120 ~ 140	4.2	4.4	4.8	4.9	5.0	5.3	5.4	6.0	6.0	6.6	7.1	8.2
140 ~ 160	4.2	4.4	4.9	5.1	5.1	5.3	5.5	6.0	6.1	6.6	7.2	8.3
160 ~ 180	4.3	4.5	4.9	5.1	5.1	5.3	5.6	6.0	6.1	6.7	7.2	8.3