

Refractive Index n_d	1.497 00 1.496 999	Abbe Number ν_d	81.54	Dispersion $n_F - n_C$	0.006 095
Refractive Index n_e	1.498 455	Abbe Number ν_e	81.14	Dispersion $n_{F'} - n_{C'}$	0.006 143

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.479 52
n_{1970}	1.970 09	1.482 69
n_{1530}	1.529 58	1.486 10
n_{1129}	1.128 64	1.489 11
n_t	1.013 98	1.490 10
n_s	0.852 11	1.491 83
$n_{A'}$	0.768 19	1.493 00
n_F	0.706 52	1.494 07
n_C	0.656 27	1.495 14
$n_{C'}$	0.643 85	1.495 43
n_{He-Ne}	0.632 8	1.495 71
n_D	0.589 29	1.496 94
n_d	0.587 56	1.497 00
n_e	0.546 07	1.498 45
n_F	0.486 13	1.501 23
$n_{F'}$	0.479 99	1.501 58
n_{He-Cd}	0.441 57	1.504 07
n_g	0.435 835	1.504 51
n_h	0.404 656	1.507 20
n_i	0.365 015	1.511 76

Constants of Dispersion Formula	
A_1	1.170 105 05E+00
A_2	4.757 107 83E-02
A_3	7.638 324 45E-01
B_1	6.162 039 24E-03
B_2	2.633 728 76E-02
B_3	1.418 826 42E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	52.1
Phosphate Resistance PR	4.0

Mechanical Properties		
Young's Modulus E (GPa)	72.7	
Rigidity Modulus G (GPa)	28.0	
Poisson's Ratio σ	0.299	
Knoop Hardness Hk[Class]	360	4
Abrasion Aa	493	

Partial Dispersions	
$n_C - n_t$	0.005 033
$n_C - n_{A'}$	0.002 134
$n_d - n_C$	0.001 863
$n_e - n_C$	0.003 319
$n_g - n_d$	0.007 508
$n_g - n_F$	0.003 276
$n_h - n_g$	0.002 698
$n_i - n_g$	0.007 253
$n_{C'} - n_t$	0.005 330
$n_e - n_{C'}$	0.003 022
$n_{F'} - n_e$	0.003 121
$n_i - n_{F'}$	0.010 184

Relative Partial Dispersions	
$\theta_{C,t}$	0.825 8
$\theta_{C,A'}$	0.350 1
$\theta_{d,C}$	0.305 7
$\theta_{e,C}$	0.544 5
$\theta_{g,d}$	1.231 8
$\theta_{g,F}$	0.537 5
$\theta_{h,g}$	0.442 7
$\theta_{i,g}$	1.190 0
$\theta'_{C,t}$	0.867 7
$\theta'_{e,C'}$	0.491 9
$\theta'_{F,e}$	0.508 1
$\theta'_{i,F'}$	1.657 8

Anomalous dispersion	
$\Delta\theta_{C,t}$	-0.103 5
$\Delta\theta_{C,A'}$	-0.024 6
$\Delta\theta_{g,d}$	0.036 4
$\Delta\theta_{g,F}$	0.028 0
$\Delta\theta_{i,g}$	0.147 8

Coloring			
λ_{80}	340	λ_5	290
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	333	$\lambda_{0.05}$	290
CCI			
B	G	R	
0.00	0.16	0.13	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	0.01
290	0.05
300	0.17
310	0.37
320	0.60
330	0.77
340	0.88
350	0.947
360	0.975
370	0.988
380	0.994
390	0.996
400	0.995
420	0.994
440	0.994
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.998
700	0.998
800	0.999
900	0.999
1 000	0.999
1 200	0.999
1 400	0.999
1 600	0.999
1 800	0.999
2 000	0.999
2 200	0.997
2 400	0.996

Thermal Properties	
Strain Point StP (°C)	-
Annealing Point AP (°C)	-
Transformation Temperature Tg (°C)	459
Yield Point At (°C)	488
Softening Point SP (°C)	-
Expansion Coefficients (-30 °C ~ 70 °C)	133
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	157
Thermal Conductivity λ (W/(mK))	0.780

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	110
-90 ~ -80	112
-80 ~ -70	114
-70 ~ -60	116
-60 ~ -50	118
-50 ~ -40	120
-40 ~ -30	122
-30 ~ -20	124
-20 ~ -10	126
-10 ~ 0	128
0 ~ 10	130
10 ~ 20	131
20 ~ 30	133
30 ~ 40	135
40 ~ 50	137
50 ~ 60	138
60 ~ 70	140
70 ~ 80	141
80 ~ 90	143
90 ~ 100	145
100 ~ 110	146
110 ~ 120	147
120 ~ 130	149
130 ~ 140	150
140 ~ 150	151
150 ~ 160	153
160 ~ 170	154
170 ~ 180	155
180 ~ 190	156
190 ~ 200	158
200 ~ 210	159
210 ~ 220	160
220 ~ 230	161
230 ~ 240	162
240 ~ 250	163
250 ~ 260	164
260 ~ 270	165
270 ~ 280	165
280 ~ 290	166
290 ~ 300	167

Other Properties	
Photoelastic Constant β nm/(cm ³ 105Pa)	0.74
Specific Gravity d	3.62
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	-5.3	-5.3	-5.2	-5.2	-5.2	-5.1	-5.1	-4.9	-4.9	-4.7	-4.6	-4.3
-60 ~ -40	-5.7	-5.7	-5.6	-5.6	-5.6	-5.5	-5.5	-5.3	-5.3	-5.1	-5.0	-4.7
-40 ~ -20	-6.0	-6.0	-5.9	-5.9	-5.9	-5.8	-5.8	-5.5	-5.5	-5.4	-5.2	-5.0
-20 ~ 0	-6.2	-6.2	-6.1	-6.1	-6.1	-6.0	-6.0	-5.8	-5.7	-5.6	-5.4	-5.2
0 ~ 20	-6.4	-6.4	-6.3	-6.2	-6.2	-6.2	-6.1	-6.0	-6.0	-5.8	-5.7	-5.3
20 ~ 40	-6.5	-6.5	-6.4	-6.4	-6.4	-6.3	-6.2	-6.1	-6.1	-5.9	-5.8	-5.4
40 ~ 60	-6.7	-6.7	-6.6	-6.5	-6.4	-6.3	-6.3	-6.2	-6.1	-6.0	-5.8	-5.5
60 ~ 80	-6.8	-6.7	-6.6	-6.6	-6.6	-6.5	-6.5	-6.3	-6.3	-6.1	-6.0	-5.6
80 ~ 100	-6.9	-6.8	-6.7	-6.7	-6.7	-6.6	-6.5	-6.4	-6.4	-6.2	-6.0	-5.7
100 ~ 120	-6.9	-6.9	-6.8	-6.8	-6.7	-6.7	-6.6	-6.5	-6.5	-6.3	-6.1	-5.8
120 ~ 140	-7.1	-7.0	-6.9	-6.9	-6.9	-6.8	-6.7	-6.6	-6.6	-6.3	-6.1	-5.8
140 ~ 160	-7.1	-7.1	-6.9	-6.9	-6.9	-6.8	-6.7	-6.6	-6.6	-6.4	-6.2	-5.9
160 ~ 180	-7.2	-7.2	-7.1	-7.0	-7.0	-6.9	-6.9	-6.7	-6.7	-6.5	-6.4	-6.0