

S-TIH14

Code(d) 762265

Code(e) 769263

Refractive Index n_d	1.761 82 1.761 821	Abbe Number ν_d	26.52	Dispersion $n_F - n_C$	0.028 729
Refractive Index n_e	1.768 591	Abbe Number ν_e	26.30	Dispersion $n_{F'} - n_{C'}$	0.029 221

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.709 16
n_{1970}	1.970 09	1.715 54
n_{1530}	1.529 58	1.723 02
n_{1129}	1.128 64	1.731 02
n_t	1.013 98	1.734 15
n_s	0.852 11	1.740 22
$n_{A'}$	0.768 19	1.744 74
n_F	0.706 52	1.749 08
n_C	0.656 27	1.753 57
$n_{C'}$	0.643 85	1.754 85
n_{He-Ne}	0.632 8	1.756 06
n_D	0.589 29	1.761 57
n_d	0.587 56	1.761 82
n_e	0.546 07	1.768 59
n_F	0.486 13	1.782 30
$n_{F'}$	0.479 99	1.784 07
n_{He-Cd}	0.441 57	1.797 50
n_g	0.435 835	1.799 92
n_h	0.404 656	1.815 84
n_i	0.365 015	

Constants of Dispersion Formula	
A_1	1.689 151 08E+00
A_2	2.904 620 24E-01
A_3	2.379 715 16E+00
B_1	1.282 025 14E-02
B_2	6.180 908 41E-02
B_3	2.010 943 52E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	88.8
Rigidity Modulus G (GPa)	35.4
Poisson's Ratio σ	0.254
Knoop Hardness Hk[Class]	550 6
Abrasion Aa	171

Partial Dispersions	
$n_C - n_t$	0.019 413
$n_C - n_{A'}$	0.008 831
$n_d - n_C$	0.008 254
$n_e - n_C$	0.015 024
$n_g - n_d$	0.038 102
$n_g - n_F$	0.017 627
$n_h - n_g$	0.015 917
$n_i - n_g$	
$n_{C'} - n_t$	0.020 697
$n_e - n_{C'}$	0.013 740
$n_{F'} - n_e$	0.015 481
$n_i - n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.675 7
$\theta_{C,A'}$	0.307 4
$\theta_{d,C}$	0.287 3
$\theta_{e,C}$	0.523 0
$\theta_{g,d}$	1.326 3
$\theta_{g,F}$	0.613 6
$\theta_{h,g}$	0.554 0
$\theta_{i,g}$	
$\theta'_{C,t}$	0.708 3
$\theta'_{e,C'}$	0.470 2
$\theta'_{F,e}$	0.529 8
$\theta'_{i,F'}$	

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.004 6
$\Delta\theta_{C,A'}$	-0.000 6
$\Delta\theta_{g,d}$	0.016 7
$\Delta\theta_{g,F}$	0.015 0
$\Delta\theta_{i,g}$	

Coloring			
λ_{80}	420	λ_5	365
λ_{70}			
Internal transmission			
$\lambda_{0.80}$	397	$\lambda_{0.05}$	368
CCI			
B	G	R	
0.00	3.11	3.10	

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.10
380	0.43
390	0.70
400	0.84
420	0.934
440	0.960
460	0.971
480	0.977
500	0.983
550	0.993
600	0.993
650	0.990
700	0.992
800	0.997
900	0.999
1 000	0.999
1 200	0.999
1 400	0.997
1 600	0.996
1 800	0.988
2 000	0.982
2 200	0.961
2 400	0.942

Thermal Properties	
Strain Point StP (°C)	565
Annealing Point AP (°C)	590
Transformation Temperature Tg (°C)	616
Yield Point At (°C)	649
Softening Point SP (°C)	693
Expansion Coefficients (-30 °C ~ 70 °C)	86
α_i (10 ⁻⁷ K ⁻¹) (100 °C ~ 300 °C)	104
Thermal Conductivity λ (W/(m·K))	1.03

Linear coefficient of thermal expansion	
Temperature range (°C)	α_i (10 ⁻⁷ K ⁻¹)
-100 ~ -90	71
-90 ~ -80	72
-80 ~ -70	74
-70 ~ -60	75
-60 ~ -50	76
-50 ~ -40	78
-40 ~ -30	79
-30 ~ -20	80
-20 ~ -10	82
-10 ~ 0	83
0 ~ 10	84
10 ~ 20	85
20 ~ 30	87
30 ~ 40	88
40 ~ 50	89
50 ~ 60	90
60 ~ 70	91
70 ~ 80	92
80 ~ 90	93
90 ~ 100	95
100 ~ 110	96
110 ~ 120	97
120 ~ 130	98
130 ~ 140	99
140 ~ 150	100
150 ~ 160	101
160 ~ 170	102
170 ~ 180	103
180 ~ 190	104
190 ~ 200	104
200 ~ 210	105
210 ~ 220	106
220 ~ 230	107
230 ~ 240	108
240 ~ 250	109
250 ~ 260	110
260 ~ 270	110
270 ~ 280	111
280 ~ 290	112
290 ~ 300	113

Other Properties	
Photoelastic Constant β nm/(cm ³ ·105Pa)	2.86
Specific Gravity d	3.17
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	-1.0	-0.8	-0.2	0.0	0.0	0.4	0.7	1.6	1.8	3.0	4.6	-
-60 ~ -40	-1.0	-0.7	-0.2	0.0	0.1	0.4	0.9	1.8	1.9	3.2	5.0	-
-40 ~ -20	-0.9	-0.7	0.0	0.2	0.3	0.6	1.0	2.0	2.1	3.6	5.3	-
-20 ~ 0	-0.8	-0.5	0.1	0.3	0.4	0.8	1.3	2.3	2.5	3.9	5.8	-
0 ~ 20	-0.7	-0.4	0.3	0.6	0.6	1.1	1.6	2.6	2.8	4.3	6.4	-
20 ~ 40	-0.5	-0.2	0.5	0.8	0.8	1.3	1.8	3.0	3.1	4.8	6.8	-
40 ~ 60	-0.4	0.0	0.7	1.0	1.0	1.6	2.1	3.3	3.4	5.2	7.3	-
60 ~ 80	-0.2	0.2	0.9	1.2	1.3	1.8	2.3	3.5	3.7	5.5	7.9	-
80 ~ 100	-0.2	0.2	1.0	1.4	1.5	2.0	2.6	3.8	4.0	5.9	8.2	-
100 ~ 120	-0.1	0.3	1.1	1.6	1.6	2.2	2.8	4.1	4.3	6.2	8.7	-
120 ~ 140	0.0	0.4	1.3	1.7	1.8	2.3	2.9	4.3	4.5	6.5	9.1	-
140 ~ 160	0.1	0.5	1.4	1.7	1.8	2.4	3.0	4.5	4.7	6.8	9.4	-
160 ~ 180	0.0	0.4	1.4	1.7	1.8	2.4	3.1	4.6	4.8	7.0	9.8	-

OHARA 25-04