

S-TIH 1

Code(d) **717295**

Code(e) **723293**

Refractive Index n_d	1.71736 1.717362	Abbe Number v_d	29.5 29.52	Dispersion n_F-n_C	0.02430 0.024303
Refractive Index n_e	1.723098	Abbe Number v_e	29.28	Dispersion $n_F'-n_C'$	0.024694

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.67018
n_{1970}	1.97009	1.67636
n_{1530}	1.52958	1.68344
n_{1129}	1.12864	1.69075
n_t	1.01398	1.69353
n_s	0.85211	1.69885
$n_{A'}$	0.76819	1.70275
n_r	0.70652	1.70649
n_C	0.65627	1.71033
$n_{C'}$	0.64385	1.71143
$n_{\text{He-Ne}}$	0.6328	1.71246
n_D	0.58929	1.71715
n_d	0.58756	1.71736
n_e	0.54607	1.72310
n_F	0.48613	1.73463
$n_{F'}$	0.47999	1.73612
$n_{\text{He-Cd}}$	0.44157	1.74732
n_g	0.435835	1.74933
n_h	0.404656	1.76247
n_i	0.365015	

Partial Dispersions	
n_C-n_t	0.016798
$n_C-n_{A'}$	0.007579
n_d-n_C	0.007030
n_e-n_C	0.012766
n_g-n_d	0.031970
n_g-n_F	0.014697
n_h-n_g	0.013136
n_i-n_g	
n_C-n_t	0.017894
$n_e-n_{C'}$	0.011670
$n_{F'}-n_e$	0.013024
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.6912
$\theta_{C,A'}$	0.3119
$\theta_{d,C}$	0.2893
$\theta_{e,C}$	0.5253
$\theta_{g,d}$	1.3155
$\theta_{g,F}$	0.6047
$\theta_{h,g}$	0.5405
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7246
$\theta'_{e,C'}$	0.4726
$\theta'_{F',e}$	0.5274
$\theta'_{i,F}$	

Thermal Properties	
Strain Point StP (°C)	569
Annealing Point AP (°C)	597
Transformation Temperature Tg (°C)	622
Yield Point At (°C)	653
Softening Point SP (°C)	703
Expansion Coefficients (-30~+70°C)	82
α ($10^{-7}/^\circ\text{C}$) (+100~+300°C)	96
Thermal Conductivity k (W/m-K)	1.018

Coloring			
λ_{80}	41	λ_5	36
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.19
380	0.56
390	0.78
400	0.88
420	0.952
440	0.971
460	0.978
480	0.982
500	0.987
550	0.994
600	0.994
650	0.991
700	0.993
800	0.998
900	0.999
1000	0.998
1200	0.998
1400	0.996
1600	0.995
1800	0.988
2000	0.981
2200	0.957
2400	0.941

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0060
$\Delta\theta_{C,A'}$	0.0003
$\Delta\theta_{g,d}$	0.0121
$\Delta\theta_{g,F}$	0.0110
$\Delta\theta_{i,g}$	

Mechanical Properties	
Young's Modulus E (10^8N/m^2)	884
Rigidity Modulus G (10^8N/m^2)	355
Poisson's Ratio σ	0.247
Knoop Hardness Hk[Class]	550 6
Abrasion Aa	161
Photoelastic Constant β (nm/cm/ 10^5Pa)	2.85

Constants of Dispersion Formula	
A_1	1.60326759E+00
A_2	2.42980935E-01
A_3	1.81313592E+00
B_1	1.18019139E-02
B_2	5.91363658E-02
B_3	1.61218747E+02

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

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.06
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative ($10^{-6}/^\circ\text{C}$)						
	t	C'	He-Ne	D	e	F'	g
-40~-20		3.2	3.3	3.6	4.0	5.1	6.2
-20~0		3.4	3.5	3.8	4.3	5.4	6.7
0~20		3.7	3.7	4.1	4.6	5.7	7.1
20~40		3.9	4.0	4.3	4.8	6.0	7.5
40~60		4.1	4.2	4.6	5.1	6.4	7.9
60~80		4.3	4.4	4.8	5.3	6.7	8.3

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屈折率	n_d	1.71736 1.717362	アツベ数	v_d	29.5 29.52	分散	n_F-n_C	0.02430 0.024303
屈折率	n_e	1.723098	アツベ数	v_e	29.28	分散	$n_F'-n_C'$	0.024694

屈折率		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.67018
n_{1970}	1.97009	1.67636
n_{1530}	1.52958	1.68344
n_{1129}	1.12864	1.69075
n_t	1.01398	1.69353
n_s	0.85211	1.69885
$n_{A'}$	0.76819	1.70275
n_r	0.70652	1.70649
n_C	0.65627	1.71033
$n_{C'}$	0.64385	1.71143
$n_{\text{He-Ne}}$	0.6328	1.71246
n_D	0.58929	1.71715
n_d	0.58756	1.71736
n_e	0.54607	1.72310
n_F	0.48613	1.73463
$n_{F'}$	0.47999	1.73612
$n_{\text{He-Cd}}$	0.44157	1.74732
n_g	0.435835	1.74933
n_h	0.404656	1.76247
n_i	0.365015	

異常分散性	
$\Delta \theta_{C,t}$	0.0060
$\Delta \theta_{C,A'}$	0.0003
$\Delta \theta_{g,d}$	0.0121
$\Delta \theta_{g,F}$	0.0110
$\Delta \theta_{i,g}$	

分散式の定数	
A_1	1.60326759E+00
A_2	2.42980935E-01
A_3	1.81313592E+00
B_1	1.18019139E-02
B_2	5.91363658E-02
B_3	1.61218747E+02

その他	
泡 B	
比重 d	3.06
備考	

部分分散	
n_C-n_t	0.016798
$n_C-n_{A'}$	0.007579
n_d-n_C	0.007030
n_e-n_C	0.012766
n_g-n_d	0.031970
n_g-n_F	0.014697
n_h-n_g	0.013136
n_i-n_g	
n_C-n_t	0.017894
$n_e-n_{C'}$	0.011670
$n_{F'-n_e}$	0.013024
$n_i-n_{F'}$	

熱的性質	
歪点 StP (°C)	569
徐冷点 AP (°C)	597
転移点 Tg (°C)	622
屈伏点 At (°C)	653
軟化点 SP (°C)	703
線膨張係数	(-30~+70°C) 82
α (10 ⁻⁷ /°C)	(+100~+300°C) 96
熱伝導率 k (W/m·K)	1.018

機械的性質	
ヤング率 E (10 ⁸ N/m ²)	884
剛性率 G (10 ⁸ N/m ²)	355
ポアソン比 σ	0.247
ヌーブ硬さ Hk [Class]	550 6
磨耗度 Aa	161
光弾性定数 β (nm/cm/10 ⁹ Pa)	2.85

化学的性質	
耐水性 (粉末法) RW(P)	1
耐酸性 (粉末法) RA(P)	1
耐候性 (表面法) W(S)	1
耐酸性 SR	1.0
耐洗剤性 PR	1.0

部分分散比	
$\theta_{C,t}$	0.6912
$\theta_{C,A'}$	0.3119
$\theta_{d,C}$	0.2893
$\theta_{e,C}$	0.5253
$\theta_{g,d}$	1.3155
$\theta_{g,F}$	0.6047
$\theta_{h,g}$	0.5405
$\theta_{i,g}$	
$\theta'_{C,t}$	0.7246
$\theta'_{e,C'}$	0.4726
$\theta'_{F',e}$	0.5274
$\theta'_{i,F}$	

着色度			
λ_{80}	41	λ_5	36
λ_{70}			

内部透過率	
$\lambda(\text{nm})$	$\tau 10\text{mm}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	0.19
380	0.56
390	0.78
400	0.88
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1200	0.998
1400	0.996
1600	0.995
1800	0.988
2000	0.981
2200	0.957
2400	0.941

屈折率の温度係数							
温度範囲 (°C)	dn/dt relative (10 ⁻⁶ /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~20		3.2	3.3	3.6	4.0	5.1	6.2
-20~0		3.4	3.5	3.8	4.3	5.4	6.7
0~20		3.7	3.7	4.1	4.6	5.7	7.1
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