

H-ZF11	699301
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nd =1.69894	vd =30.05	nF - nC =0.023259
ne =1.70444	ve =29.81	nF' - nc' =0.023628

Refractive Indices		
	λ (nm)	
n_r	706.5	1.68852
n_c	656.3	1.69221
$n_{c'}$	643.8	1.69326
n_{He-Ne}	632.8	1.69425
n_D	589.3	1.69875
n_d	587.6	1.69894
n_e	546.1	1.70444
n_F	486.1	1.71547
$n_{F'}$	480.0	1.71689
n_g	435.8	1.72948
n_h	404.7	1.74204
n_i	365.0	1.76588

Chemical Properties	
	Group
RC(S)	2
RA(S)	1
DW	1
DA	1

Internal Transmittance		
λ (nm)	τ_{5mm}	τ_{10mm}
2400	0.938	0.88
2200	0.959	0.92
2000	0.98	0.96
1800	0.99	0.98
1600	0.999	0.998
1400	0.999	0.998
1200	0.999	0.998
1060	0.999	0.998
1000	0.999	0.998
950	0.999	0.998
900	0.999	0.998
850	0.999	0.998
800	0.999	0.998
700	0.996	0.993
650	0.995	0.99
600	0.996	0.993
550	0.996	0.993
500	0.993	0.986
480	0.99	0.981
460	0.987	0.975
440	0.984	0.968
420	0.976	0.952
400	0.944	0.892
390	0.9	0.81
380	0.79	0.62
370	0.51	0.26
360	0.13	0.02
350		
340		
330		
320		
310		
300		
290		
280		

Thermal Properties	
Tg (°C)	592
Ts (°C)	628
T ₁₀ ^{14.5} (°C)	517
T ₁₀ ¹³ (°C)	551
$\alpha_{20/120^\circ C}$ (10 ⁻⁷ /K)	92.15
$\alpha_{20/300^\circ C}$ (10 ⁻⁷ /K)	100.04

constants of Dispersion Formula	
A ₀	2.7919943
A ₁	-1.23112061×10 ⁻²
A ₂	2.88027401×10 ⁻²
A ₃	2.14300591×10 ⁻³
A ₄	-1.69321191×10 ⁻⁴
A ₅	1.97417661×10 ⁻⁵

Mechanical Properties	
Hardness (10 ⁷ Pa)	521
FA (Relative Abrasion)	
Young's Modulus (10 ⁷ Pa)	8410
Rigidity Modulus (10 ⁷ Pa)	3371
Poisson's Ratio	0.248

Relative Partial Dispersions			
P _{d,c}	0.2897	P' _{d,c'}	0.2407
P _{e,d}	0.2362	P' _{e,d}	0.2325
P _{g,F}	0.6028	P' _{g,F'}	0.5333

Stress-Optical Coefficient	
B (10 ⁻¹² /Pa)	

Deviation of Relative Partial Dispersions	
$\Delta P_{F,e}$	0.001
$\Delta P_{g,F}$	0.0083

Color	
λ_{80}/λ_5	41/36

Specific Gravity	
ρ (g/cm ³)	2.96

NHG	HOYA	OHARA	SCHOTT
H-ZF11	E-FD15	S-TIM35	N-SF15



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