



Properties of NICF Series

(Nikon Calcium Fluoride)

Refractive Indices	Wavelength	Refractive Index
	[nm]	
He	1082.989	1.42838
t	1013.98	1.42880
s	852.11	1.43003
A'	768.195	1.43089
r	706.519	1.43168
C	656.273	1.43246
C'	643.847	1.43269
He-Ne	632.8	1.43289
D	589.294	1.43381
d	587.562	1.43385
e	546.074	1.43494
F	486.133	1.43702
F'	479.992	1.43727
g	435.835	1.43947
h	404.656	1.44148
i	365.015	1.44487
KrF	248.3	1.46791
ArF	193.4	1.50134

*measured at:
temperature : 25 °C
humidity : 50%*

n_d (He, 587.56 nm)	1.43385
n_e (Hg, 546.07 nm)	1.43494
$n_F - n_C$	0.00456
$n_{F'} - n_{C'}$	0.00459
d	95.2
e	94.9

Mechanical Properties

Density	3.18 g / cm ³
Knoop Hardness (ISO9385)	158.3
Abrasion	334
Young's Modulus	7.58×10^{10} N / m ²
Shear Modulus	3.37×10^{10} N / m ²
Poisson's Ratio	0.26

Physical / Chemical / Electrical Properties

Molecular Weight *	78.08	
Solubility in Water 20 °C *	0.016 g / l	
Crystal Structure	Cubic, Fluorite type	
Cleavage Plane	{111}	
Dielectric Constants ϵ_r *	27	6.81
Water Resistance [Class]	4	
Acid Resistance [Class]	0	
Weathering [Class]	1	

Thermal Properties

Melting Point *	1420	
Linear Thermal Expansion Coefficient	20 ~60	187 / 10 ⁻⁷ K
Thermal Conductivity *	0	10.3 W / mK
Heat Capacity *	298 K	71.13 J /K/mol
	1000 K	90.49 J/K/mol
	1500 K	123.7 J/K/mol

* excerpts from literature

We show each properties as representative value.