

Mateck Lithium Fluoride (LiF)

Category : Ceramic , Halide

Material Notes:

Optical crystals

Order this product through the following link:

http://www.lookpolymers.com/polymer_Mateck-Lithium-Fluoride-LiF.php

Physical Properties	Metric	English	Comments
Density	2.60 g/cc	0.0939 lb/in ³	
Solubility	0.27 ppm	0.27 ppm	
a Lattice Constant	4.026 Å...	4.026 Å...	
c Lattice Constant	4.026 Å...	4.026 Å...	
Molecular Weight	25.94 g/mol	25.94 g/mol	

Mechanical Properties	Metric	English	Comments
Vickers Microhardness	980	980	MPa
Hardness, Mohs	4.0	4.0	
Modulus of Elasticity	88.4 GPa	12800 ksi	in <100> direction
	142.2 GPa	20620 ksi	in <111> direction
Poissons Ratio	0.27	0.27	
Shear Modulus	40.9 GPa	5930 ksi	in <100> direction
	62.9 GPa	9120 ksi	in <111> direction

Thermal Properties	Metric	English	Comments
CTE, linear	28.1 - 34.8 Åµm/m-Â°C @Temperature -60.0 - 60.0 Â°C	15.6 - 19.3 Åµin/in-Â°F @Temperature -76.0 - 140 Â°F	
Specific Heat Capacity	1.562 J/g-Â°C	0.3733 BTU/lb-Â°F	
Thermal Conductivity	14.2 W/m-K @Temperature 38.0 Â°C	98.5 BTU-in/hr-ftÂ²-Â°F @Temperature 100 Â°F	
Melting Point	870 Â°C	1600 Â°F	

Optical Properties	Metric	English	Comments
Refractive Index	1.3931	1.3931	at ne
	1.101	1.101	
	@Wavelength 10000 nm	@Wavelength 10000 nm	
	1.262	1.262	
	@Wavelength 7000 nm	@Wavelength 7000 nm	
	1.3871	1.3871	
	@Wavelength 1000 nm	@Wavelength 1000 nm	
	1.439	1.439	
	@Wavelength 200 nm	@Wavelength 200 nm	
IR Transmittance	14 %	14 %	Internal Transmittance
	@Wavelength 7000 nm	@Wavelength 7000 nm	
	97 %	97 %	Internal Transmittance
	@Wavelength 1000 nm	@Wavelength 1000 nm	
	97 %	97 %	Internal Transmittance
	@Wavelength 3000 nm	@Wavelength 3000 nm	
UV Transmittance	90 %	90 %	Internal Transmittance
	@Wavelength 200 nm	@Wavelength 200 nm	

Descriptive Properties	Value	Comments
Cleavability	(100)	perfect
Constants of Elastic Compliance (Pa ⁻¹)	1.132E-11	S11
	1.591E-11	S44
	-3.06E-12	S12
Symmetry Class	m3m	
Syngony	cubic	
Thermal Coefficient of Refractive Index	-1.25E-5 to -1.51E-5	at 3.39 microns for Â± 60Â°C
Transmission Range (microns)	0.12 - 6.5	

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