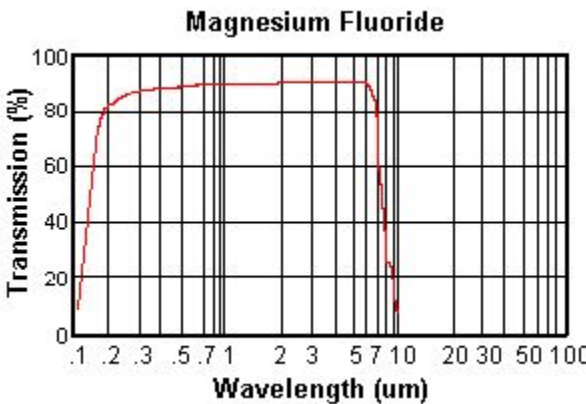


**MaF2** Magnesium Fluoride (MgF<sub>2</sub>) transmits well into the VUV region at the hydrogen Lyman-alpha line (121nm) and beyond. Application as window, lens, in most VUV region optics and is excellent for excimer laser use.

MgF<sub>2</sub> is a positive birefringent crystal with high optical transmittance from the vacuum ultraviolet to the infrared spectrum region. It is resistant to mechanical and thermal shock, to radiation, and is chemically stable.

### Main Properties

Crystal properties					
Crystal Growth Method			Vacuum Stockbarger		
Max. Size (mm)			<100		
Optical properties					
Transmission range (um)			0.12~7.00		
Reflection Loss, % for two surfaces at 5 μm			4.8		
Refractive Index			See below		
Wavelength (um)	No	Ne	Wavelength (um)	No	Ne
0.121	1.62750	1.63200	0.656	1.37661	1.38835
0.140	1.50950	1.52300	1.000	1.37360	1.38521
0.178	1.43975	1.45365	2.000	1.36800	1.37922
0.200	1.42309	1.43657	3.000	1.36000	1.37060
0.300	1.39298	1.40543	4.000	1.35250	1.36220
0.436	1.38203	1.39402	5.000	1.33020	1.33930
0.488	1.38016	1.39206	6.000	1.32420	1.33150
0.588	1.37770	1.38960	7.000	1.30440	1.31010
Transmission Curve See below					
 <p style="text-align: center;"><b>Magnesium Fluoride</b></p>					

Crystallographic properties	
Syngony	Tetragonal
Lattice Constant	a=4.64; c=3.06
Cleavability	(100),(110), imperfect
Physical properties	
Density, at 291 K	3.18g/cm <sup>3</sup>
Hardness, Mohs	6
Dielectric Constant for 95x10 <sup>3</sup> - 42x10 <sup>6</sup> Hz	5.45
Melting point, °C	1255
Thermal Conductivity, W/m·K	3.14
Thermal Expansion, K	
Parallel to c-axis (//)	14 × 10 <sup>-6</sup>
Perpendicular to c-axis (⊥)	8.9 × 10 <sup>-6</sup>
Bandgap, eV	10.8
Knoop Hardness, kg/mm <sup>2</sup>	415
Young's Modulus, GPa	138.5
Shear Modulus, GPa	54.66
Bulk Modulus, GPa	101.32
Apparent Elastic Limit, MPa	49.64
Poisson Ratio	0.276
Solubility in water at 18°C	0.0076g (per 100g water)
Molecular Weight	62.31