

Magnesium Fluoride(MgF2)

SPECIFICATIONS



Magnesium fluoride (MgF₂) is a birefringent crystal with good optical properties in the UV band and it is the known optical crystal in the UV cut-off band. Magnesium fluoride has good transmittance in UV, visible and IR fields, and is widely used in scientific and technological fields such as laser, IR optics, UV optics and high energy detectors. With high transmittance and low fluorescence radiation, magnesium fluoride is an ideal material for UV photodetectors, UV lasers and UV optical systems.

OPTICAL

Transmission Range, microns	0.12-7.5
Transmittance, at 0.193-6 μm	>90%
Reflection Loss at 1μm(double-sided)	5.1%
Absorption Coefficient at 2.7μm	40×10 ⁻³
Structure	Quadratic Crystal System
Cleavage Planes, direction	<100>

THERMAL

Melting Point [°C]	1255
Thermal Conductivity, [W/(m×K)]	21 //c, 33.6 ⊥ c @ 300K
Thermal Expansion [10 ⁻⁶ /K]	13.7//c, 8.9 ⊥ c @ 373k
Specific Heat Capacity [J/(kg×K)]	1003

MECHANICAL

Density[g/cm ³]	3.177
Dielectric Constant	4.87 //c, 5.44 ⊥ c @ 1MHz
Young's Modulus (E) [GPa]	138.5
Shear Modulus(G) [GPa]	54.66
Bulk modulus(K) [GPa]	101.32
Poisson Coefficient	0.276

CHEMICAL

Molecular Weight / g/mol	62.3018
Solubility in water at 20°C	0.002g

REFRACTIVE INDEX

Wavelength (um)	Refractive Index n _o	Refractive Index n _e
0.2	1.4231	1.4367
0.5	1.3797	1.3916
1.0	1.3736	1.3852
2.0	1.3686	1.3797
3.0	1.3618	1.3724
4.0	1.3525	1.3622
5.0	1.3400	1.3487
6.0	1.3242	1.3315
7.0	1.3044	1.3101

