

Magnesium Fluoride

Optical

Transmission Range :	118 nm to 8.5 μm
Refractive Index:	1.413 at 220 nm
Reflection Loss :	5.7 % at 220 nm (loses from two surfaces)
Absorption Coefficient :	$40 \times 10^{-3} \text{ cm}^{-1}$ at 2.7 μm

Physical

Density :	3.18 g/cm^3
Melting Point :	1255 $^{\circ}\text{C}$
Thermal Conductivity (parallel) :	21 $\text{W m}^{-1} \text{K}^{-1}$ at RT
Thermal Conductivity (perpendicular) :	33.6 $\text{W m}^{-1} \text{K}^{-1}$ at RT
Linear CTE (parallel) :	$13.7 \times 10^{-6} /^{\circ}\text{C}$ at RT
Linear CTE (perpendicular):	$8.9 \times 10^{-6} /^{\circ}\text{C}$ at RT
Specific Heat Capacity :	1003 $\text{J Kg m}^{-1} \text{K}^{-1}$

Mechanical

Youngs Modulus :	138 GPa
Shear Modulus (G) :	54.66 GPa
Bulk Modulus (K) :	101.32 GPa
Rupture Modulus :	49.6 Mpa
Hardness :	415 Knoop
Poisson Ratio :	0.276

Chemical

Formula	MgF_2
Solubility :	0.0002 g/100g water
Molecular Weight :	62.32 g/mole

Notes

Magnesium Fluoride transmits well into the VUV region

MgF_2 is slightly birefringent and usually supplied with the optic axis cut perpendicular to the window faces.