

## Magnesium Oxide ( MgO )

Magnesium oxide (MgO) single crystal substrates are widely used in many thin film technology fields, such as the production of magnetic films, semiconductor films, optical films, and high-temperature superconducting films. Because the dielectric constant and loss of MgO single crystal in the microwave band are very small, and large-area substrates (2 inches in diameter or larger) can be obtained, it is an important high-temperature superconducting thin-film single crystal substrate for current industrialization. one. It can be used to make high-temperature superconducting microwave filters and other devices required by mobile communication equipment, and has a large realistic and potential application market.



### PARAMETERS

Growth Method	Special Arc Melting
Crystal Structure	Cubic
Lattice Constant	a=4.130 Å
Melting Point	2800°C
Purity	99.95%
Density	3.58 (g/cm <sup>3</sup> )
Mohs Hardness	5.5 (mohs)
Thermal Expansion	11.2x10 <sup>-6</sup> /K
Cleavage Plane	<100>
Transmittance	>90% (200~1000nm)
Dielectric Constants	ε= 9.65
Thermal Conductivity	36 W/mk @ 300°K
Dimension	5x5mm, 10x10mm, 20x20mm, 30x30mm ,Ø50.8 mm
Thickness	0.5mm, 1.0mm
Polishing	One side or two sides
Orientation	<001>,<110>,<111>
Crystal Plane Orientation Accuracy	±0.5°
Edge Orientation Accuracy	2° (Special requirements can reach within 1°)
Surface Roughness	Ra≤5Å (5×5μm)
Package	Class 100 clean bag, Class 1000 super clean room