

Strontium Titanate (SrTiO₃)

Strontium titanate(SrTiO₃)is an insulating material, which can be transformed into ferroelectric materials or superconductors by chemical doping, pressure, strain or isotope substitution.

It is one of the most widely used excellent high temperature superconducting single crystal substrates. It matches well the lattice of high temperature superconducting materials such as YBa₂Cu₃O₇, twinning less structure and has excellent physical and mechanical properties. A variety of high-temperature superconducting thin films (Y-line, Bi-line, La-line, etc.) made using various membrane making techniques (such

as magnetic sputtering, pulse laser deposition, laser molecular beam epitaxy, etc.) can obtain TCO 90 ° K, JCO 106A / cm².SrTiO₃ is also the preferred single crystal material for high temperature superconducting



PARAMETERS

Crystal Structure	Cubic
Growth Method	Verneuil's method, floating zone method
Lattice Constant	a=3.905Å
Melting Point	2060℃
Density	5.122 (g/cm ³)
Mohs Hardness	6-6.5 (mohs)
Thermal Expansion	9.4×10 ⁻⁶ /K
Dielectric Constant	ε=5.20
Chemical Stability	Insoluble in water
Loss Tangent	~5×10 ⁻⁴ (300k) ~3×10 ⁻⁴ (77k)
Color	Transparent (sometimes slightly yellow according to the annealing state)
Dimension	5x5mm、10×5mm、10×10mm、20×20mm,Dia25.4mm,Dia30mm, According to customer needs, substrates with special orientation and size can be customized.
Thickness	0.5mm、1.0mm
Dimension Tolerance	<±0.1mm
Thickness Tolerance	<±0.05mm
Polishing	One side or two sides
Orientation	<100>、<110>、<111>
Orientation Tolerance	±0.5°
Edge Orientation Accuracy	2° (Special requirements can reach within 1°)
Package	Class 100 clean bag, Class 1000 super clean room.