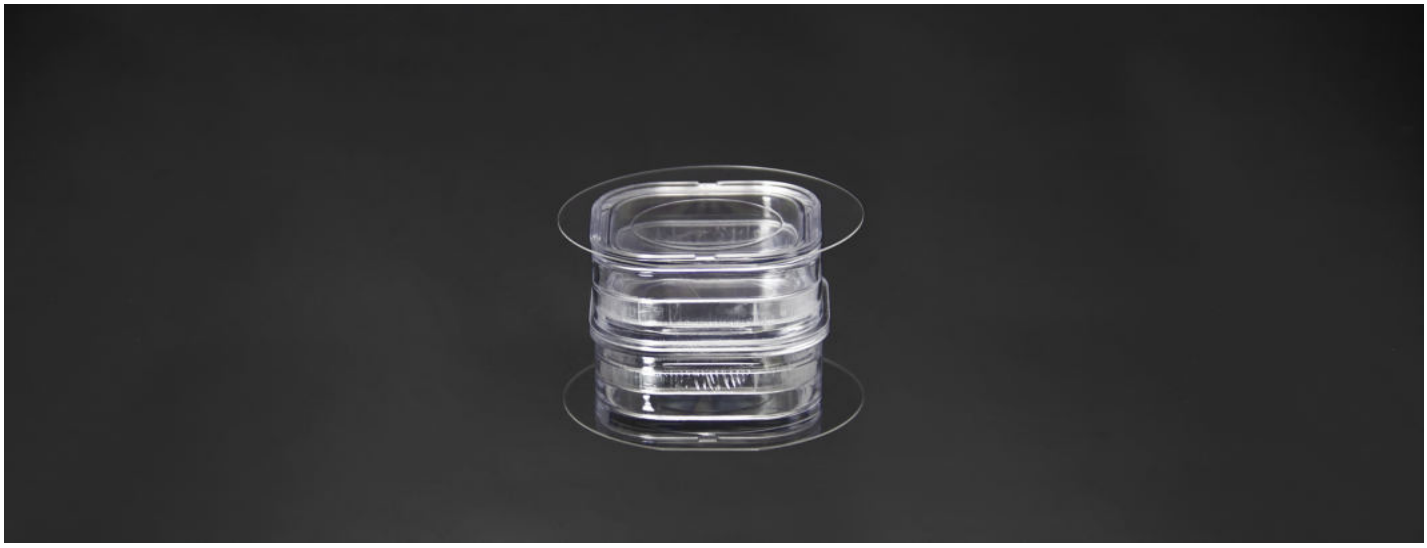
YSZ

Yttria Stabilized Zirconia (YSZ) Crystal Substrate



DESCRIPTION

Yttria-stabilized zirconia (YSZ) single crystal substrate is one of the earliest materials to be applied to high temperature superconducting thin films. Zirconium oxide has been used in ceramics, refractories, machinery, electronics, optics, aerospace due to its high physicochemical properties. Usually using the zirconium oxide necessary to incorporate yttria as a stabilizer. Common doping concentration in 13 mol%, YSZ has good mechanical and chemical stability, low cost. It has been named Yttria stabilized zirconia.

FEATURE

- High hardness
- High strength
- High toughness
- High wear resistance
- Excellent chemical resistance

APPLICATION

- High-temperature superconducting thin films
- Stabilizer

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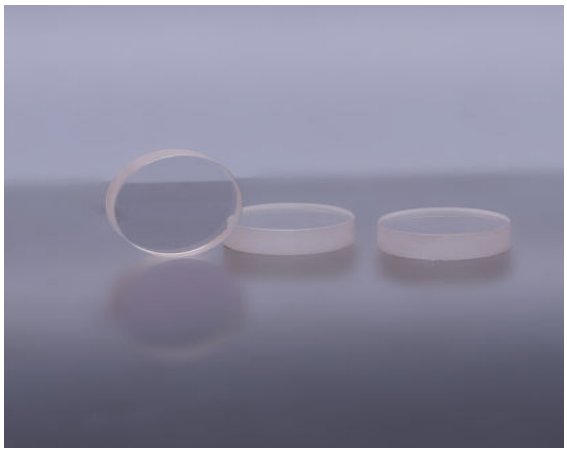
YSZ

PARAMETER

Physical Properties

Product Name	YSZ single crystal substrate/wafer
Crystal structure	Cubic
Lattice constant	a=5.147 Å
Growth method	Skull melting Technique
Melt point	2700°C
Density	6g/cm^3
Hardness	8-8.5(Mohs)
Purity	0.9999
Thermal expansion	10.3×10^{-6}/K
Dielectric constants	ε=27



Main Specification

Product Name	YSZ substrate
Orientation	<100> ±0.5° <110> ±0.5° <111> ±0.5° Or other off-angle
Standard Size	10x10mm 10x5mm 5x5mm 25x25mm 50x50mm φ1" x 0.5mm φ2"x0.5mm Or others
Thickness	0.1mm 0.2mm 0.5mm 1.0mm 2.0mm Or others
Polishing	Fine ground Single side polished Double side polished Roughness: Ra<5A(0.5nm)