

Strontium Titanate (SrTiO₃) Crystals and Substrates

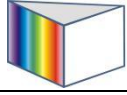
Strontium Titanate or SrTiO₃ single crystal provides a good lattice match to most materials with Perovskite structure. It is an excellent substrate for epitaxial growth of HTS and many oxide thin films. Its lattice constant (3.905Å) fits the common high T_c superconductive material YBCO (3.88 Å) very well. It has twin-less crystal structure and very good physical and mechanical properties for film growth. It is suitable for various high T_c films such as YBCO, Bi-system, La-system and others. SrTiO₃ is an excellent and wide applied High T_c superconductive single crystalline substrate.

SrTiO₃ single crystal has also been used widely for special optical windows and as high quality sputtering target. It is also suitable for different film growth technologies such as Magnet Sputtering, Pulsed Laser Deposition (PLD), Vapourization, MOCVD, CVD, and laser MBE etc. Films made by these materials and technologies on SrTiO₃ substrate have excellent performance, for instance T_c>90K, J_c> = 106A/cm².



SPECIFICATIONS

Specifications	
Orientations	<100>, <110>, <111>
Orientation Tolerance	±0.5°
Standard Size (mm)	Φ50.8, Φ25.4, 20x20, 15x15, 10x10, 10x5, 10x3mm
Thickness	0.5 mm and 1.0 mm
Dimensional Tolerance	±0.1mm or ±0.05mm
Grown Boule	55 mm dia. x 50-80 mm length
Surface Quality	20/10 S/D
Flatness	1/4 Lambda @633nm for thickness less than 2mm
Parallelism	30 arc sec.
Perpendicularity	5 arc minutes
Wavefront Distortion	<1/4 Lambda @ 633nm
Micro Roughness (5µm x 5µm)	Ra: <1Å



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