

$(\text{La,Sr})(\text{Al,Ta})\text{O}_3$

Lanthanum Strontium Aluminum Tantalum Oxide ((La,Sr)(Al,Ta)O₃) Crystal Substrate



DESCRIPTION

LSAT-Lanthanum Strontium Aluminum Tantalum Oxide or $(\text{La,Sr})(\text{Al,Ta})\text{O}_3$ is a mixed perovskite crystal substrate for epitaxial thin films in ferroelectric and high temperature superconductor devices because of its high chemical and thermal stability, and very low electrical conductivity. LAST crystals are grown via the Czochralski method. LSAT's cubic structure and lattice parameter of 3.868 Å makes it compatible for the epitaxial growth of a wide range of perovskite oxide thin film with a relatively low strain. Furthermore, LSAT is stable in both oxidizing and fairly reducing atmospheres at high temperatures, thus enabling a larger operating window for the processing and growth conditions.

FEATURE

- Maximum Diameter: 2 inches
- Custom wafers available upon request

APPLICATION

- Strontium titanate substrate material
- Cuprate superconductors substrate material
- Iron-based superconductors substrate material
- Rare-earth manganites substrate material
- Rare-earth nickelates substrate material



(La,Sr)(Al,Ta)O₃

PARAMETER

Physical and Chemical Properties

Compound Formula	Al ₁₀ La ₃ O ₅₁ Sr ₁₄ Ta ₇
Molecular Weight	3995.82
Appearance	Colorless to light yellow crystal
Melting Point	1840 °C
Boiling Point	N/A
Density	6.74 g/cm ³
Solubility in H ₂ O	N/A
Crystal Phase / Structure	Cubic mixed perovskite
Specific Heat	0.57 J/g·°C
Thermal Conductivity	5.1 W/m·K
Thermal Expansion	8.2 10 ⁻⁶ k ⁻¹ (295°K)
Monoisotopic Mass	3999.5896

Main Specification

Size	10x3, 10x5, 10x10, 15x15, 20x15, 20x20, Φ15,Φ20, Φ1", Φ2",Φ2.6"
Thickness	0.5mm, 1.0mm
Polishing	Single or double
Crystal Orientation	<100>、<110>、<111>±0.5°
redirection precision	±0.5°
Redirection the edge	2° (special in 1°)
Angle of crystalline	Special size and orientation are available upon request
Ra:	≤5Å (5μm×5μm)

