

Certificate of Analysis (CoA)

Oct. 31, 2025

Product Name: Tin–Thulium Sputtering Target
Chemical Formula: Sn:Tm = 96.5:3.5 (atomic ratio)
Purity: 99.99% (4N)
Dimensions: Ø101.6 mm × 5.0 mm (±0.1 mm)
Backing Plate: None
Quantity: 1 Piece
Lot Number: CSXK-251031TB
Manufactured by: Thin-Film Materials

Physical Description

- Form: Metallic sputtering target
- Appearance: Silvery metallic surface, uniform alloy microstructure
- Phase Structure: Homogeneous Sn–Tm solid solution (metallic phase)
- Theoretical Density: ~7.4 g/cm³
- Fabrication: Vacuum induction melted, hot-pressed, and precision machined

Chemical Composition (by GDMS / ICP-OES)

Element	Symbol	Max. Content (ppm)
Tin	Sn	Balance (>99.99%)
Thulium	Tm	Balance (stoichiometric)
Iron	Fe	<20
Silicon	Si	<20
Aluminum	Al	<20
Calcium	Ca	<20
Nickel	Ni	<10
Copper	Cu	<10
Lead	Pb	<10
Oxygen	O	<30

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Element	Symbol	Max. Content (ppm)
Other trace elements (each)	—	<10
Total Impurities	—	<100 ppm

Handling & Storage

- Store in vacuum-sealed or inert gas packaging to prevent surface oxidation.
 - Handle with clean gloves to maintain surface purity.
 - Avoid exposure to moisture or acids.
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Declaration

We certify that the above product has been manufactured and tested in accordance with our quality control system and meets the specifications stated herein.

Authorized Signature:Inspection Certificate by: Nancy LiuApprover by: Chen Qiang