THIN-FILM MATERIALS
32 N Gould St., Sheridan, WY 82801, USA
Tel.: +1 (786) 825 8645
WhatsApp: Keyue Advanced Materials
Email: sales@thinfilmmaterials.com
Website: www.thinfilmmaterials.com

Certificate of Analysis (CoA)

Dec. 2, 2025

Product Name: Bismuth Antimony (BiSb) Alloy Sputtering Target
Chemical Formula: $Bi_{0.85}Sb_{0.15}$
Composition: 85 at% Bi / 15 at% Sb
Purity: 99.99% (4N, metal basis)
Dimensions: Ø50.8 mm × 3.0 mm
Bonding: Bonded to Copper (Cu) Backing Plate, 2 mm thick
Lot Number: CSJM-251202TB
Quantity: 1 PCS
Manufactured by: Thin-Film Materials

Physical Description

- Form: Metallic sputtering target, bonded
- Appearance: Silvery-white to metallic gray, solid
- Crystal Structure: Rhombohedral (A7 structure, typical of Bi/Sb alloys)
- Theoretical Density: ~9.8 g/cm³
- Fabrication: Vacuum melting, casting, homogenization, precision machining, and bonding

Total Impurities (by ICP-OES / GDMS)

Element	Symbol	Max. Content (ppm)
Bi, Sb	**Bi, Sb**	**Balance (>99.99%)**
Lead	Pb	< 5
Tellurium	Te	< 5
Arsenic	As	< 3
Iron	Fe	< 3
Sulfur	S	< 3
Other Metallic (each)	-	< 1

Handling & Storage

- This material is relatively soft and brittle. Handle with care to avoid scratches and dents.
- Store in a dry environment. Recommended to keep in vacuum or inert packaging to minimize surface oxidation.
- Avoid thermal shock.

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Declaration

This BiSb alloy target is manufactured with precise composition control, making it suitable for the deposition of thermoelectric thin films in advanced energy conversion and cooling device research.

Authorized Signature:

Inspection Certificate by: **Nancy Liu**

Approver by: **Chen Qiang**