

Certificate of Analysis (CoA)

Aug. 11, 2025

Product Name: Antimony Selenide – Copper Composite Sputtering Target**Chemical Formula:** Sb_2Se_3 – Cu (95:5 at%)**Purity:** 99.99% (4N, excluding intentional elements)**Target Dimensions:** Ø76.2 mm × 3.0 mm (±0.1 mm)**Backing Plate:** Elastomer bonded to Copper plate, Ø76.2 mm × 3.0 mm**Lot Number:** CSJM-250711TB**Manufactured by:** Thin-Film Materials

Physical Description

- Form: Composite sputtering target
- Appearance: Dark gray solid with metallic inclusions
- Crystal Structure: Sb_2Se_3 + FCC Cu
- Fabrication: Hot pressing, machining, elastomer bonding to Cu plate
- Theoretical Density: ~5.4–5.6 g/cm³ (composite)

Nominal Atomic Composition

| Component | Formula | Atomic % |
|-------------------|--------------------------|----------|
| Antimony Selenide | Sb_2Se_3 | 95 |
| Copper | Cu | 5 |

Chemical Purity of Raw Materials (by ICP-OES)

| Element | Symbol | Min. Purity |
|---------|--------|-------------|
| Sb | Sb | 99.999% |
| Se | Se | 99.999% |
| Cu | Cu | 99.999% |

Impurity Analysis (Composite Target)

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| Element | Symbol | Max. Content (ppm) |
|-------------------------------|--------|--------------------|
| Iron | Fe | <15 |
| Lead | Pb | <10 |
| Silver | Ag | <10 |
| Other trace elements (each) – | | <10 |
| Total Impurities | – | <100 ppm |

Handling & Storage

- Composite target is brittle; handle with care.
- Store in vacuum-sealed or inert atmosphere packaging.
- Avoid contact with moisture or corrosive gases.
- Handle using gloves to prevent contamination.

Declaration

We certify that the above product has been manufactured using high-purity raw materials and tested according to our quality management system. The product meets the specifications stated herein.

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