

Certificate of Analysis (CoA)

Aug. 11, 2025

Product Name: Antimony Sulfide – Copper Composite Sputtering Target**Chemical Formula:** $\text{Sb}_2\text{S}_3 - \text{Cu}$ (95:5 at%)**Purity:** 99.99% (4N, excluding intentional elements)**Target Dimensions:** $\varnothing 76.2 \text{ mm} \times 3.0 \text{ mm}$ ($\pm 0.1 \text{ mm}$)**Backing Plate:** Elastomer bonded to Copper plate, $\varnothing 76.2 \text{ mm} \times 3.0 \text{ mm}$ **Lot Number:** CSJM-250711TB**Manufactured by:** Thin-Film Materials

Physical Description

- Form: Composite sputtering target
- Appearance: Dark gray to black, brittle solid with metallic inclusions
- Crystal Structure: Orthorhombic Sb_2S_3 + FCC Cu
- Fabrication: Hot pressing, machining, indium bonding to Cu plate
- Theoretical Density: $\sim 4.8\text{--}5.0 \text{ g/cm}^3$ (composite)

Nominal Atomic Composition

Component	Formula	Atomic %
Antimony Sulfide	Sb_2S_3	95
Copper	Cu	5

Chemical Purity of Raw Materials (by ICP-OES)

Element	Symbol	Min. Purity
Sb	Sb	99.999%
S	S	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

- Brittle material; handle carefully to prevent cracking.
- Store in vacuum-sealed or inert atmosphere packaging.
- Avoid exposure to moisture or corrosive gases.
- Handle with clean 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