



>>Entry Name: Antimony iodide sulfide (SbIS)

Synonym(s): Iodothioxostibine, 9Cl. Iodothioxoantimony(*III*)

CAS Registry Number: 13816-38-1

ISb=S

Molecular Formula: ISSb

Molecular Weight: 280.721

Accurate Mass: 279.780364

Percentage Composition: I 45.21%; S 11.42%; Sb 43.37%

General Statement: Orthorhombic. Each S atom is surrounded by 4 Sb atoms and I is 4 coordinated by Sb. Double (Sb₂S₂I₂)_n chains are linked such that the Sb of one chain contacts the S of the next

Source/Synthesis: Synth. from Sb + S + SbI₃ at 400°; or from SbI₃ + Sb₂S₃; or Sb₂S₃ + I₂ + Sb

Use/Importance: Used in thermoelectric and photoelectric devices

Physical Description: Ruby-red prisms or needles

Melting Point: Mp 400° (377°)

Other Data: Exhibits photoconductive and electrooptical props. with large anisotropic behaviour along *c*-axis. Also piezoelectric, pyroelectric: ferroelectric - paraelectric transition at *ca.* 20°

References:

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