



>>Entry Name: Antimony iodide (SbI₃), 8Cl

Synonym(s): Triiodostibine, 9Cl. Triiodoantimony(*III*). Antimony triiodide. Antimonous iodide

CAS Registry Number: 7790-44-5

SbI₃

Molecular Formula: I₃Sb

Molecular Weight: 502.464

Accurate Mass: 501.61724

Percentage Composition: I 75.77%; Sb 24.23%

General Statement: In addition to cryst.-forms, a yellow amorphous form is known. In vap., Sb-I 271.9 pm

Source/Synthesis: Synth. from Sb + I₂; or from SbCl₃ + BI₃

Solubility: Insol. CCl₄. Sol. EtOH, Me₂CO, CS₂, HCl, KI soln.

Other Data: Unchanged when distilled in H₂. Dec. by air. Forms complex iodides with iodides of other metals e.g. those of Group I. Forms adduct with sulfur. $\Delta H_f^\circ -100 \text{ kJ mol}^{-1}$

Hazard & Toxicity: Poison. Incompat. with Na, K

Aldrich: 40118-8

Fluka: 10782

>>Derivative: THF complex (1:1)

Molecular Formula: C₄H₈I₃OSb

Molecular Weight: 574.57

Accurate Mass: 573.674755

Percentage Composition: C 8.36%; H 1.40%; I 66.26%; O 2.78%; Sb 21.19%

Source/Synthesis: Synth. from SbI₃ + tetracyanoethylene in THF

Physical Description: Orange cryst. (THF/hexane)

>>Derivative: Tris-S₈ complex

CAS Registry Number: 37428-61-8

Molecular Formula: I₃S₂₄Sb

Molecular Weight: 1272.048

Accurate Mass: 1268.94692

Percentage Composition: I 29.93%; S 60.50%; Sb 9.57%

Physical Description: Deep yellow cryst.

Melting Point: Mp 116-118°

Other Data: Interatomic distance: Sb-I 274.7 pm. S linked to Sb through I. I-S 360.2 pm

>>Variant: Trigonal-form

Molecular Formula: I₃Sb

Molecular Weight: 502.464

Accurate Mass: 501.61724

Percentage Composition: I 75.77%; Sb 24.23%

Physical Description: Red cryst. flakes (CS₂) yielding pomegranate-red liq. when fused and finally giving orange-red vap.

Melting Point: Mp 171° (163°)

Boiling Point: Bp 400°

Other Data: Possesses v. strong negative birefringence

>>Variant: Rhombic-form

Molecular Formula: I₃Sb

Molecular Weight: 502.464

Accurate Mass: 501.61724

Percentage Composition: I 75.77%; Sb 24.23%

Physical Description: Greenish-yellow flakes

Other Data: Possesses negative birefringence. When sublimed at *ca.* 100° yields the trigonal form

>>Variant: Monoclinic-form

Molecular Formula: I₃Sb

Molecular Weight: 502.464

Accurate Mass: 501.61724

Percentage Composition: I 75.77%; Sb 24.23%

Physical Description: Greenish-yellow to yellow plates (from solns. containing iodine)

References: