



>>Entry Name: Antimony fluoride (SbF₃), 8Cl

Synonym(s): Trifluorostibine, 9Cl. Trifluoroantimony(III). Antimony(III) trifluoride. Antimonous fluoride

CAS Registry Number: 7783-56-4

SbF₃

Molecular Formula: F₃Sb

Molecular Weight: 178.745

Accurate Mass: 177.89903

Percentage Composition: F 31.89%; Sb 68.11%

General Statement: Lewis acid. Orthorhombic. V. Much distorted octahedral coordination around Sb in 3-D network formed by pyramidal groups connected through fluorine bridges

Source/Synthesis: Synth. from Sb₂O₃ + HF aq.

Use/Importance: Catalyst for organic reactions. Fluorinating agent. Commercially available

Physical Description: Colourless v. deliquescent cryst.

Melting Point: Mp 292°

Boiling Point: Bp 376° (319°)

Solubility: Readily sol. H₂O (385 g per 100 g at 0°) with part. hydrol., sol. polar org. solvs. (55 g per 100 cm³ Me₂CO, 154 g per 100 cm³ MeOH). Insol. C₆H₆, chlorobenzene, petrol

Other Data: ΔH_f° -899 kJ mol⁻¹. Forms complexes with Na₂SO₄, K₂SO₄, other fluorides of Group V, and also with Group I fluorides

Hazard & Toxicity: Highly toxic. Skin irritant. Corrosive

Aldrich: 20111-1

Fluka: 10778

References:

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