



>>Entry Name: Potassium hexafluoroantimonate(V)

Synonym(s): Hexafluoroantimonate(1-), potassium salt, 8Cl. Potassium antimony hexafluoride

CAS Registry Number: 16893-92-8

Related CAS Registry Numbers(s): 17111-95-4

K[SbF₆]

Molecular Formula: F₆KSb

Molecular Weight: 274.839

Accurate Mass: 273.857946

Percentage Composition: F 41.48%; K 14.23%; Sb 44.30%

Source/Synthesis: Synth. by reaction of K₂H₂Sb₂O₇ with HF or by treatment of the product of the reaction of a mixt. of solid Sb₂O₃ and KOH with aq. H₂O₂ soln. (30%) with aq. HF soln. (48%). Manuf. by treatment of an equimolar mixt. of SbCl₅ and KCl (or KF) with excess anhydrous HF at high temp. and pressure

Physical Description: Moisture-sensitive cubic cryst. Undergoes cubic to tetragonal transition at 16°. Hydrol. in H₂O forming [SbF_{6-n}(OH)_n]⁽⁻⁾ species

Solubility: V. sol. H₂O (102 g per 100 cm³ at 20°) but aged samples dissolve much less owing to surface impurity formation

Other Data: ΔH_f -1324 kJ mol⁻¹

Aldrich: 23800-7

Fluka: 60315

References:

Longe, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1935, **223**, 370, (*synth*)

Bode, H. *et al.*, *Z. Anorg. Allg. Chem.*, 1951, **264**, 144, (*cryst struct*)

Kemmitt, R.D.W. *et al.*, *J.C.S.*, 1963, 4408, (*cryst struct*)

Mazeika, W.A. *et al.*, *Inorg. Chem.*, 1966, **5**, 309, (*synth, hydrol*)

Evans, J.A. *et al.*, *J.C.S.(A)*, 1968, 1688, (*ir, Raman*)

Heyns, A.M. *et al.*, *Spectrochim. Acta A*, 1976, **32**, 535, (*ir, Raman, polymorphs*)

Heyns, A.M. *et al.*, *J. Phys. Chem.*, 1981, **42**, 461, (*F-19 nmr, Raman*)

Burgess, J. *et al.*, *J. Fluorine Chem.*, 1982, **20**, 541, (*thermodynamics*)

Ger. Pat., 1986, 3 432 221; *CA*, 1986, **104**, 170920, (*manuf*)