



>>Entry Name: Silver(I) fluoride

Synonym(s): Argentous fluoride. Silver monofluoride

CAS Registry Number: 7775-41-9

AgF

Molecular Formula: AgF

Molecular Weight: 126.867

Accurate Mass: 125.903495

Percentage Composition: Ag 85.02%; F 14.98%

Use/Importance: Converts organic Br and Cl compds. into their F analogues; antiseptic. Commercially available

Physical Description: V. hygroscopic leaflets. Darkens on exp. to light

Melting Point: Mp 435°

Boiling Point: Bp 1150°

Solubility: Sol. H₂O, HF, NH₃, MeCN

Other Data: In moist air becomes insol. in H₂O due to the formation of the basic fluoride. Reduced to the subfluoride by uv light. $\Delta H_f^\circ -203.7 \text{ kJ mol}^{-1}$

Hazard & Toxicity: Reacts explosively in intimate contact with B; violent reaction with Si

Aldrich: 22686-6

Fluka: 85183

>>Derivative: Dihydrate

Molecular Formula: AgFH₄O₂

Molecular Weight: 162.897

Percentage Composition: Ag 66.22%; F 11.66%; H 2.47%; O 19.64%

Other Data: Stable to 39.5°

>>Derivative: Tetrahydrate

Molecular Formula: AgFH₈O₄

Molecular Weight: 198.927

Percentage Composition: Ag 54.22%; F 9.55%; H 4.05%; O 32.17%

Other Data: Stable from -14° to +18.7°

References:

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Jahn-Held, W. *et al.*, *Z. Elektrochem.*, 1936, **42**, 608, (*hydrate*)

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Abraham, A. *et al.*, *C. R. Hebd. Seances Acad. Sci.*, 1959, **249**, 1633, (*Ag-109 nmr*)

Ladd, M.F. *et al.*, *J. Inorg. Nucl. Chem.*, 1959, **11**, 264, (*theory*)

Won Choi, Q., *J.A.C.S.*, 1960, **82**, 2686, (*F-19 nmr*)

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