



>>Entry Name: Arsenic fluoride (AsF<sub>3</sub>), 8Cl

Synonym(s): Arsenous trifluoride, 9Cl. Trifluoroarsine. Trifluoroarsenic(III)

CAS Registry Number: 7784-35-2

AsF<sub>3</sub>

Molecular Formula: AsF<sub>3</sub>

Molecular Weight: 131.917

Accurate Mass: 131.916803

Percentage Composition: As 56.79%; F 43.21%

General Statement: Detected in Jupiter's atm. Pyramidal struct. in gas phase. Interatomic distance: As-F 170.6 pm; angle: FAsF =102°. Orthorhombic cryst. system containing distorted tricapped trigonal prisms of F around As

Source/Synthesis: Synth. from As<sub>2</sub>O<sub>3</sub> + HF or HSO<sub>3</sub>F

Use/Importance: Fluorinating agent, although weaker than SbF<sub>3</sub>. Commercially available

Physical Description: V. mobile, colourless liq. which fumes in air and readily hydrol.

Melting Point: Mp -6° (-8.5°)

Boiling Point: Bp 63°

Solubility: Sol. alcohols, Et<sub>2</sub>O, C<sub>6</sub>H<sub>6</sub>

Density: d<sup>15</sup> 2.73

Other Data: Attacks glass, but not polythene  $\Delta H_f^\circ$  -956.5 kJ mol<sup>-1</sup>;  $\Delta H_f^\circ$  (g) -910 kJ mol<sup>-1</sup>

Hazard & Toxicity: Very poisonous

#### References:

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