



>>Entry Name: Potassium hexafluoroaluminate(III) (K<sub>3</sub>AlF<sub>6</sub>)

Synonym(s): Tripotassium aluminium fluoride (K<sub>3</sub>AlF<sub>6</sub>). Hexafluoroaluminate(3-) tripotassium salt

CAS Registry Number: 13775-52-5

Extra CAS Registry Numbers(s): 60996-20-5

K<sub>3</sub>AlF<sub>6</sub>

Molecular Formula: AlF<sub>6</sub>K<sub>3</sub>

Molecular Weight: 258.267

Accurate Mass: 257.863078

Percentage Composition: Al 10.45%; F 44.14%; K 45.42%

Source/Synthesis: Synth. by melting together AlF<sub>3</sub> and KF in a 3:1 ratio

Use/Importance: Used in brazing fluxes, also as a fireproofing agent for polycarbonates. Commercially available

Physical Description: Colourless cryst.

Melting Point: Mp 1010°

Other Data:  $\Delta H_f^\circ$  -3326 kJ mol<sup>-1</sup>;  $\Delta G_f^\circ$  -3163 kJ mol<sup>-1</sup>;  $S^\circ$  285 J K<sup>-1</sup> mol<sup>-1</sup>

Aldrich: 43580-5

#### References:

Steward, E.G. *et al.*, *Acta Cryst.*, 1953, **6**, 49, (*polymorphs*)

Holm, J.L., *Acta Chem. Scand.*, 1965, **19**, 261, (*struct, synth*)

Aleonard, S., *C. R. Hebd. Seances Acad. Sci.*, 1965, **260**, 1977, (*synth*)

Reisfeld, M.J., *Spectrochim. Acta A*, 1973, **29**, 1923, (*ir, Raman*)

Grimmer, A.R. *et al.*, *Z. Chem.*, 1982, **22**, 43, (*Al-27, F-19 nmr*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 108, (*thermodyn data*)