



Molecular Weight: 235.533
Accurate Mass: 235.893579
Percentage Composition: Al 11.46%; F 48.40%; Li 2.95%; Sr 37.20%
Source/Synthesis: Synth. from LiF + SrF₂ + AlF₃
Use/Importance: Cr³⁽⁺⁾ and Ce³⁽⁺⁾ doped crystals are used in laser devices
Physical Description: Cryst.

>>**Derivative:** Tri-NH₄ salt

CAS Registry Number: 7784-19-2

Molecular Formula: AlF₆H₁₂N₃
Molecular Weight: 195.087
Accurate Mass: 195.075079
Percentage Composition: Al 13.83%; F 58.43%; H 6.20%; N 21.54%
Source/Synthesis: Synth. from H₃AlF₆ and NH₄OH
Use/Importance: Possible precursor for synth. of AlN
Physical Description: Hygroscopic white powder
Solubility: Insol. EtOH

Aldrich: 43581-3

>>**Derivative:** Tris-acetamidinium salt

CAS Registry Number: 153014-62-1
Molecular Formula: C₆H₂₁AlF₆N₆
Molecular Weight: 318.244
Accurate Mass: 318.154726
Percentage Composition: C 22.64%; H 6.65%; Al 8.48%; F 35.82%; N 26.41%
Source/Synthesis: Synth. from Al and H₃CC(NH)NH₂ in aq. HF
Physical Description: Air-stable colourless cryst.
Solubility: Sol. H₂O; insol. MeOH, EtOH

References:

- Bode, H. *et al.*, *Z. Anorg. Allg. Chem.*, 1957, **290**, 1, (rev)
Holm, J.L., *Acta Chem. Scand.*, 1965, **19**, 261, (tga, synth)
Viebahn, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1971, **386**, 335-339, (Ca Li salt, synth, cryst struct)
Thompson, W.T. *et al.*, *Can. J. Chem.*, 1976, **54**, 3342, (phase diagram, K salt)
Golovastikov, N.I., *Kristallografiya*, 1978, **23**, 42; *Sov. Phys. Crystallogr. (Engl. Transl.)*, 1978, **23**, 19, (cryst struct, di-Cs Na salt)
Zilberman, B.D. *et al.*, *Russ. J. Phys. Chem. (Engl. Transl.)*, 1979, **53**, 182, (nqr)
Huseby, I.C., *J. Am. Ceram. Soc.*, 1983, **66**, 217, (use, NH₄ salt)
Schaffers, K.I. *et al.*, *Acta Cryst. C*, 1991, **47**, 18-20, (Sr Li salt, cryst struct)
Calov, U. *et al.*, *Z. Anorg. Allg. Chem.*, 1993, **619**, 1939, (cryst struct, ms, ir, thermal anal, acetamidinium salt)
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, THQ500