



>>Entry Name: Aluminium(III) fluoride (AlF₃)

Synonym(s): Aluminium trifluoride

CAS Registry Number: 7784-18-1

AlF₃

Molecular Formula: AlF₃

Molecular Weight: 83.977

Accurate Mass: 83.976748

Percentage Composition: Al 32.13%; F 67.87%

Use/Importance: Constit. of electrolyte in aluminium smelting. Also in ceramics, glass, enamels. With KHF₂ reagent for prepn. of fluorohydrins. Commercially available

Physical Description: Colourless cryst.

Boiling Point: Subl. 1270°

Solubility: Spar. sol. H₂O; insol. org. solvs.

Other Data: ϵ 4.9; n_D 1.382. $\Delta H_{f298}^\circ -1510.4 \text{ kJ mol}^{-1}$; $S^\circ 66.5 \text{ J K}^{-1} \text{ mol}^{-1}$

Aldrich: 33291-7

Sigma: A8205

>>Derivative: Trihydrate

CAS Registry Number: 15098-87-0

Molecular Formula: AlF₃H₆O₃

Molecular Weight: 138.022

Percentage Composition: Al 19.55%; F 41.29%; H 4.38%; O 34.78%

Source/Synthesis: α -Form from HF and Al; β -form from aq. AlF₃ at 100°

Physical Description: Colourless cryst. (H₂O)

Aldrich: 23609-8

Fluka: 6235

>>Derivative: Nonahydrate

CAS Registry Number: 15098-89-2

Molecular Formula: AlF₃H₁₈O₉

Molecular Weight: 246.114

Percentage Composition: Al 10.96%; F 23.16%; H 7.37%; O 58.51%

Physical Description: Colourless cryst. (H₂O)