



>>Entry Name: Lithium tetrafluoroborate(III)

Synonym(s): Tetrafluoroborate(1-), lithium salt, 8Cl

CAS Registry Number: 14283-07-9

LiBF₄

Molecular Formula: BF₄Li

Molecular Weight: 93.746

Accurate Mass: 94.01892

Percentage Composition: B 11.53%; F 81.06%; Li 7.40%

Source/Synthesis: Synth from LiF + BF₃ in THF or 1,2-dimethoxyethane

Use/Importance: Commercially available as solid or in soln. (1.0 M) in MeCN. Electrolyte for use in non-aq. lithium batteries. Reagent for the cleavage of silyl ethers, the mild high yield hydrolysis of acetals and ketals, the addition of arenesulfonyl chlorides to olefins and the electrooxidative C-C cleavage of cyclohexanones

Physical Description: Hygroscopic. Dec. on heating into constituent fluorides (dissociation pressure = 675 mm Hg at 300°)

Other Data: $\Delta H_f^\circ -1876 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -1777 \text{ kJ mol}^{-1}$

Hazard & Toxicity: Irritant

Aldrich: 25581-5

Fluka: 62455

Sigma: L3783

>>Derivative: Monohydrate

CAS Registry Number: 39963-03-6

Molecular Formula: BF₄H₂LiO

Molecular Weight: 111.761

Accurate Mass: 112.029485

Percentage Composition: B 9.67%; F 68.00%; H 1.80%; Li 6.21%; O 14.32%

Physical Description: Colourless orthorhombic cryst.

>>Derivative: Trihydrate

CAS Registry Number: 39963-05-8

Physical Description: Colourless hexagonal cryst. Dec. at 23° with H₂O loss to give monohydrate

References:

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