>>**Entry Name: Lithium aluminium hydride**
Synonym(s): Lithium tetrahydroaluminate(*III*). Tetrahydroaluminate lithium salt, 8CI. Lithium aluminohydride. Lithal. Lithium alanate

CAS Registry Number: 16853-85-3
$LiAlH_4$

Molecular Formula: AlH_4Li
Molecular Weight: 37.954
Accurate Mass: 38.028842
Percentage Composition: Al 71.09%; H 10.62%; Li 18.29%
Source/Synthesis: Prepd. by reaction of LiH with $AlCl_3$ or $AlBr_3$ in Et_2O or from $NaAlH_4$ and LiCl in Et_2O
Use/Importance: Commercially available as solid or in soln. in Et_2O (1.0 *M*), diglyme (0.5 *M*) and THF (1.0 *M*). Versatile reducing agent. Polym. catalyst
Physical Description: Moisture sensitive white monoclinic cryst. Reacts violently with H_2O. Dec. on heating to form LiH, Al and H_2
Solubility: Sol. Et_2O (39g per 100 cm^3), THF (15g per 100g); spar. sol. hydrocarbons
Other Data: ΔH_f° –117 kJ mol^{-1}; ΔG_f° –48 kJ mol^{-1}; S° 87.9 J K^{-1} mol^{-1}
Hazard & Toxicity: Flammable, corrosive. May catch fire in air without warning

Aldrich: 31746-2
Fluka: 62426
Sigma: L0260

>>**Derivative:** Deutero deriv.
Synonym(s): Lithium aluminium deuteride ($LiAlD_4$). Deuterated lithium aluminium hydride. Lithium tetrahydroaluminate - d_4. Tetrahydroaluminate - d_4, lithium salt, 8CI

CAS Registry Number: 14128-54-2
Molecular Formula: AlD_4Li
Molecular Weight: 41.979
Source/Synthesis: Prepd. from $AlBr_3/Et_2O$ + LiD/Et_2O or from Li, Al and D_2 at 150°, 15 atm.
Use/Importance: Commercially available. Reducing agent for producing deuterated organics
Physical Description: V. moisture sensitive white cryst.
Solubility: Sol. Et_2O; spar. sol. hydrocarbons
Other Data: Dec. at 98°
Hazard & Toxicity: Produces HD on reacting violently with H_2O
Aldrich: 40423-3
Fluka: 62413
Sigma: L4007

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