



>>Entry Name: Lithium hydride (LiH), 8Cl

CAS Registry Number: 7580-67-8

Related CAS Registry Numbers(s): 19095-57-9

LiH

Molecular Formula: HLi

Molecular Weight: 7.949

Accurate Mass: 8.023828

Percentage Composition: H 12.68%; Li 87.32%

Source/Synthesis: Prepd. by reaction of H₂ with Li at 500-700° or by thermal dec. of LiAlH₄ at 130°

Use/Importance: Commercially available; can be activated for use as reducing agent for ketones, etc.

Physical Description: Moisture sensitive white cubic cryst. Reacts with H₂O to form LiOH and H₂, dissociates above Mp to form Li metal and H₂

Melting Point: Mp 688.7 dec.°

Other Data: ΔH_f° -90.6 kJ mol⁻¹; ΔG_f° -68.4 kJ mol⁻¹; S° 20.0 J K⁻¹ mol⁻¹

Hazard & Toxicity: Flammable

Aldrich: 20104-9

Fluka: 62510

>>Derivative: Deuterio compd.

Synonym(s): Lithium deuteride. Lithium hydride (LiD), 8Cl. Deuterated lithium hydride (98% at. % D)

CAS Registry Number: 13587-16-1

Molecular Formula: DLi

Molecular Weight: 8.955

Source/Synthesis: Obt. by methods analogous to LiH

Use/Importance: Commercially available

Physical Description: White moisture sensitive cryst.

Melting Point: Mp 680°

Solubility: Reacts with H₂O → LiOH + H₂/D₂(g)

Other Data: Dissociates > Mp to Li + D₂

Hazard & Toxicity: Flammable

Sigma: L4259

References:

Staritzky, E. *et al.*, *Anal. Chem.*, 1956, **28**, 1055, (*cryst struct, deriv*)

Gmelin Handbook Inorg. Chem., Syst. No. 20, 1960, 245; 257, (*rev, bibl, deriv*)

Messer, C.E., *Spec. Publ. - Chem. Soc.*, 1967, **22**, 183, (*rev, bibl*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 1224, (*thermochem data*)

Gardner, M.P. *et al.*, *Lithium: Curr. Appl. Sci. Med. Technol.*, (Ed. Bach, R.O.) Wiley, NY, 1985, 195, (*synth*)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2156A

Merck Index, 11th edn., 1989, No. 5411

Ohkuma, T. *et al.*, *J.O.C.*, 1994, **59**, 217, (*use*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials, 8th edn.*, Van Nostrand Reinhold, 1992, LHH000; LHI000