



>>Entry Name: Lithium sulfide (Li₂S), 8CI

Synonym(s): Dilithium sulfide

CAS Registry Number: 12136-58-2

Li₂S

Molecular Formula: Li₂S

Molecular Weight: 45.948

Accurate Mass: 46.004076

Percentage Composition: Li 30.21%; S 69.79%

Source/Synthesis: Obt. by reaction of the elements

Use/Importance: Commercially available. Component of high current density lithium-sulfur batteries. Forms glasses with main group metal sulfides (e.g. BaS, GeS)

Physical Description: Pale yellow deliquescent cubic cryst.

Melting Point: Mp 900-975°

Boiling Point: Bp 1800°

Solubility: V. sol. H₂O, EtOH

Other Data: ΔH_f° -449 kJ mol⁻¹

Hazard & Toxicity: Flammable, irritant

Aldrich: 21324-1

Fluka: 62617

Sigma: L7132

References:

Sigma-Aldrich Library of Chemical Safety Data, **2**, 2157D

Zintl, E. *et al.*, *Z. Elektrochem.*, 1934, **40**, 588, (*cryst struct*)

Gmelin Handbook Inorg. Chem., Syst. No. 20, 1960, 472, (*rev, bibl*)