



>>Entry Name: Lithium fluoride (LiF), 8Cl

CAS Registry Number: 7789-24-4

Related CAS Registry Numbers(s): 14885-65-5 17409-87-9

LiF

Molecular Formula: FLi

Molecular Weight: 25.939

Accurate Mass: 26.014406

Percentage Composition: F 73.24%; Li 26.76%

Source/Synthesis: Prep. from LiCl + BrF₃ at 120°

Use/Importance: Commercially available. Used in thermoluminescent dosimeters. Component of *Flibe* - a potential nuclear fusion reactor blanket (LiF-BeF₂ molten salt mixture). Flux

Physical Description: White cubic cryst.

Melting Point: Mp 848°

Boiling Point: Bp 1676°

Solubility: Spar. sol. H₂O (0.27 g per 100 cm³ at 18°); insol. EtOH

Other Data: $\Delta H_f^\circ -616.9 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -588.7 \text{ kJ mol}^{-1}$; $S^\circ 35.66 \text{ J K}^{-1} \text{ mol}^{-1}$. Reacts with HF $\rightarrow$ LiHF₂

Hazard & Toxicity: Toxic, irritant

Aldrich: 44990-3

Fluka: 62498

References:

Sharpe, A.G. *et al.*, *J.C.S.*, 1948, 2135, (*synth*)

Thewlis, J., *Acta Cryst.*, 1955, **8**, 36, (*cryst struct*)

Gmelin Handbook Inorg. Chem., Syst. No 20, 1960, 305, (*rev, bibl*)

Charles, M.W., *Nucl. Instrum. Methods Phys. Res.*, 1983, **206**, 239, (*uses*)

Moir, R.W. *et al.*, *Fusion Technol.*, 1985, **8**, 133, (*uses*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 1025, (*thermochem data*)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2155C

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