



>>Entry Name: Lithium chloride (LiCl), 8Cl

CAS Registry Number: 7447-41-8

LiCl

Molecular Formula: CLi

Molecular Weight: 42.394

Accurate Mass: 41.984855

Percentage Composition: Cl 83.63%; Li 16.37%

Source/Synthesis: Prepd. by reaction of gaseous Cl<sub>2</sub> with LiOCl, or by thermal dec. of LiClO<sub>4</sub>

Use/Importance: Commercially available. Powerful desiccant used in air conditioning and industrial drying systems. Component of low melting salt mixtures (e.g. LiCl-KCl)

Biological Use/Importance: Antimanic agent

Physical Description: Extremely hygroscopic white cubic cryst.

Melting Point: Mp 610°

Boiling Point: Bp 1325-1360°

Solubility: V. sol. H<sub>2</sub>O (64 g per 100 cm<sup>3</sup> at 0°; 130 g per 100 cm<sup>3</sup> at 95°), EtOH (25 g per 100 cm<sup>3</sup> at 30°), MeOH (42 g per 100 cm<sup>3</sup> at 25°); sol. Me<sub>2</sub>CO (4.1 g per 100 cm<sup>3</sup> at 25°)

Other Data:  $\Delta H_f^\circ$  -408 kJ mol<sup>-1</sup>;  $\Delta G_f^\circ$  -384 kJ mol<sup>-1</sup>;  $S^\circ$  59.30 J K<sup>-1</sup> mol<sup>-1</sup>

Hazard & Toxicity: Irritant

Aldrich: 43137-0

Fluka: 62374

Sigma: L8895

>>Derivative: Monohydrate

CAS Registry Number: 16712-20-2

Molecular Formula: ClH<sub>2</sub>LiO

Molecular Weight: 60.409

Accurate Mass: 59.99542

Percentage Composition: Cl 58.69%; H 3.34%; Li 11.49%; O 26.49%

Use/Importance: Commercially available

Physical Description: White tetragonal cryst., hygroscopic. Dec. on heating with H<sub>2</sub>O loss (-H<sub>2</sub>O at 150°)

Solubility: V. sol. H<sub>2</sub>O (86 g per 100 cm<sup>3</sup> at 30°)

Other Data:  $\Delta H_f^\circ$  -713 kJ mol<sup>-1</sup>;  $\Delta G_f^\circ$  -633 kJ mol<sup>-1</sup>;  $S^\circ$  104 J K<sup>-1</sup> mol<sup>-1</sup>

#### References:

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Jacobi, H., *Acta Cryst. B*, 1972, **28**, 2924, (*cryst struct, alternative interpretation, monohydrate*)

Manewa, M. *et al.*, *Z. Anorg. Allg. Chem.*, 1973, **396**, 279, (*thermal dec, monohydrate*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 758, (*thermochem data*)

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