



>>Entry Name: Lithium azide (Li(N₃)), 8Cl

Synonym(s): Hydrazoic acid, lithium salt

CAS Registry Number: 19597-69-4

Li(N₃)

Molecular Formula: LiN₃

Molecular Weight: 48.961

Accurate Mass: 49.025225

Percentage Composition: Li 14.18%; N 85.82%

Source/Synthesis: Prepd. by treatment of NaN₃ with Li₂SO₄·H₂O in aq. EtOH. Also obt. by neutralisation of conc. aq. LiOH with dil. aq. HN₃ or by reaction of N₂O with LiNH₂

Use/Importance: Undergoes nucleophilic substitution reactions with organic substrates. Component of pyrotechnic compositions

Physical Description: White monoclinic powder. Extremely deliquescent. Dec. on heating (often explosively) with formation of N₂

Solubility: V. sol. H₂O (66 g per 100 cm³ at 16°), sol. EtOH (20 g per 100 cm³ at 16°)

Other Data: $\Delta H_f^\circ +10.8 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ +77.4 \text{ kJ mol}^{-1}$

Hazard & Toxicity: Explosive

References:

Gray, P. *et al.*, *Proc. R. Soc. London, A*, 1956, **235**, 106; 481, (*thermochem data*)

Hofman-Bang, N., *Acta Chem. Scand.*, 1957, **11**, 581, (*synth*)

Gray, P. *et al.*, *Trans. Faraday Soc.*, 1957, **53**, 901, (*ir*)

Clusius, K. *et al.*, *Helv. Chim. Acta*, 1958, **41**, 972, (*synth*)

U.S. Pat., 1964, 3 122 462; *CA*, **60**, 14329a, (*use, pyrotechnics*)

Pringle, G.E. *et al.*, *Acta Cryst. B*, 1968, **24**, 262, (*cryst struct*)

Iqbal, Z., *J. Chem. Phys.*, 1973, **59**, 1769, (*Raman*)

Prout, E.G. *et al.*, *J. Inorg. Nucl. Chem.*, 1973, **35**, 2183, (*synth, thermal dec*)

Lee, T.H. *et al.*, *J.A.C.S.*, 1975, **97**, 4845, (*pe*)

Leleu, M.J., *Cah. Notes Doc.*, 1979, **94**, 133, (*haz*)

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