



>>Entry Name: Lithium metaborate

Synonym(s): Boric acid lithium salt, 8Cl

CAS Registry Number: 13453-69-5

LiBO₂

Molecular Formula: BLiO₂

Molecular Weight: 49.751

Accurate Mass: 50.015138

Percentage Composition: B 21.73%; Li 13.95%; O 64.32%

Source/Synthesis: Prepd. by thermal treatment of an equimolar mixture of Li₂O and B₂O₃

Use/Importance: Commercially available. Flux in x-ray fluorescence analysis

Physical Description: White monoclinic cryst.

Melting Point: Mp 844°

Solubility: Mod. sol. H₂O (2.6 g per 100 cm³ at 20°; 12 g per 100 cm³ at 80°)

Other Data: ΔH_f° -1019.2 kJ mol⁻¹; ΔG_f° -963.1 kJ mol⁻¹; S° 51.7 J K⁻¹ mol⁻¹

Aldrich: 20552-4

Fluka: 62615

Sigma: L0265

>>Derivative: Dihydrate

CAS Registry Number: 15293-74-0

Aldrich: 36529-7

Fluka: 62608

>>Derivative: Octahydrate

Molecular Formula: BH₁₆LiO₁₀

Molecular Weight: 193.872

Accurate Mass: 194.099658

Percentage Composition: B 5.58%; H 8.32%; Li 3.58%; O 82.53%

Source/Synthesis: Prepared by aq. extraction of a previously heated mixture of Li₂CO₃ and H₃BO₃

Physical Description: Colourless trigonal cryst.

References:

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Hildenbrand, D.L. *et al.*, *J. Chem. Phys.*, 1963, **39**, 296, (synth)

Zachariasen, W.H., *Acta Cryst.*, 1964, **17**, 749, (cryst struct, octahydrate, anhydr)

Natarajan, M. *et al.*, *Proc. Int. Conf. Raman Spectrosc.*, 6th, 1978, 1978, **2**, 354; *CA*, 1980, **92**, 206485, (Raman)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 242, (thermochem data)