



>>Entry Name: Sodium borohydride

ENTRY UNDER REVIEW

Synonym(s): Tetrahydroborate sodium salt, 8Cl. Sodium tetrahydroborate(III)

CAS Registry Number: 16940-66-2

NaBH₄

Molecular Formula: BH₄Na

Molecular Weight: 37.832

Accurate Mass: 38.030372

Percentage Composition: B 28.58%; H 10.66%; Na 60.77%

Source/Synthesis: Commercially available either as solid, supported on alumina or silica gel or in soln. in diglyme, triglyme or aq. NaOH. Manuf. by reaction of NaH with boron hydrides (B₂H₆) or boron trihalides (BF₃) in ethereal solvs.

Use/Importance: Versatile reducing agent

Physical Description: White cubic cryst. Dec. on heating into constituent elements

Melting Point: Mp 497°

Solubility: V. sol H₂O (56 g per 100 cm³ at 24°); mod. sol. EtOH, MeOH; spar. sol. Py; insol. Et₂O; sol. liq. NH₃

Other Data: Dissolves in cold H₂O to cryst. as the dihydrate; at higher temps. hydrolysis occurs. $\Delta H_f^\circ -191.8 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -127.1 \text{ kJ mol}^{-1}$; $S^\circ 101.4 \text{ J K}^{-1} \text{ mol}^{-1}$

Hazard & Toxicity: Flammable solid, corrosive

Aldrich: 20097-2

Fluka: 71321

Sigma: S9125

>>Derivative: Tetra-deutero deriv.

Synonym(s): Sodium borodeuteride. Sodium tetradeuteroborate

CAS Registry Number: 15681-89-7

Molecular Formula: BD₄Na

Molecular Weight: 41.857

Source/Synthesis: Synth. by reaction of Na[B(OMe)₄] with B₂D₆

Use/Importance: Versatile deuterating agent

Physical Description: White cubic cryst.

Solubility: V. sol. H₂O; mod. sol. EtOH, MeOH; spar. sol. Py; insol. Et₂O; sol. liq. NH₃

Aldrich: 38856-4

Fluka: 71309

Sigma: S2882

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