



>>Entry Name: Disodium octaborate

Synonym(s): Boron sodium oxide ($\text{B}_8\text{Na}_2\text{O}_{13}$), 9Cl. Sodium octaborate

CAS Registry Number: 12008-41-2

Related CAS Registry Numbers(s): 12447-74-4

$\text{Na}_2\text{B}_8\text{O}_{13}$ or $\text{Na}_2\text{O} \cdot 4\text{B}_2\text{O}_3$

Molecular Formula: $\text{B}_8\text{Na}_2\text{O}_{13}$

Molecular Weight: 340.46

Accurate Mass: 341.987869

Percentage Composition: B 25.40%; Na 13.51%; O 61.09%

Source/Synthesis: Synth. from B_2O_3 + Na_2O

Use/Importance: Wood preservative

Physical Description: Glass or cryst.

Melting Point: Mp 816°

Other Data: Tetra- and decahydrates are known

>>Derivative: Tetrahydrate

Synonym(s): Disodium octaborate tetrahydrate. Boron sodium oxide ($\text{B}_8\text{Na}_2\text{O}_{13}$) tetrahydrate, 11Cl, 10Cl, 9Cl. Polybor(60)

CAS Registry Number: 12280-03-4

Molecular Formula: $\text{B}_8\text{H}_8\text{Na}_2\text{O}_{17}$

Molecular Weight: 412.52

Accurate Mass: 414.030129

Percentage Composition: B 20.97%; H 1.95%; Na 11.15%; O 65.93%

General Statement: A commercially available sodium borate hydrate whose composition corresp. closely to the formulation of the hypothetical compd.

Source/Synthesis: Produced from mixtures of borax and boric acid

Use/Importance: Used in wood preservatives, fertiliser sprays, herbicides, fire retardants

Solubility: V. sol. H_2O

References:

Morey, G.W. *et al.*, *J.A.C.S.*, 1936, **58**, 2248-2254, (*synth*)

Bouaziz, R., *Bull. Soc. Chim. Fr.*, 1962, 1451-1456, (*cryst struct*)

Smith, H.D. *et al.*, *Inorg. Chem.*, 1972, **11**, 1152-1154, (*B-11 nmr*)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **4**, 84, (*soly, formulation*)

Nies, N.P., *Mellor Compr. Treat. Inorg. Theor. Chem.*, 1980, 343