



**>>Entry Name: Disodium octaborate**

**Synonym(s):** Boron sodium oxide ( $B_8Na_2O_{13}$ ), 9Cl. Sodium octaborate

**CAS Registry Number:** 12008-41-2

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

$Na_2B_8O_{13}$  or  $Na_2O \cdot 4B_2O_3$

**Molecular Formula:**  $B_8Na_2O_{13}$

**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 ( $B_8Na_2O_{13}$ ) tetrahydrate, 11Cl, 10Cl, 9Cl. Polybor(60)

**CAS Registry Number:** 12280-03-4

**Molecular Formula:**  $B_8H_8Na_2O_{17}$

**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