



>>Entry Name: Manganese tetraborate

Synonym(s): Manganese(II) borate (MnB_4O_7), 11CI

CAS Registry Number: 12228-91-0

MnB_4O_7

Molecular Formula: B_4MnO_7

Molecular Weight: 210.178

Accurate Mass: 210.939672

Percentage Composition: B 20.57%; Mn 26.14%; O 53.29%

3 groups. Mn occupies distorted tetrahedron of O atoms

Source/Synthesis: Obt. by metathesis of aq. molar solns. of MnSO_4 and borax and washing the precipitate and drying at 500° for 4 h.

Physical Description: Cryst.

Melting Point: $\text{Mp } 940^\circ$

Other Data: $\Delta H_f^\circ -75.3 \text{ kJ mol}^{-1}$ (est.)

>>Derivative: Nonahydrate

Source/Synthesis: Synth. from $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ and $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ in H_2O

Physical Description: Light pink cryst.

Other Data: Structural composition is $\text{Mn}[\text{B}_4\text{O}_5(\text{OH})_4] \cdot 7\text{H}_2\text{O}$. Some studies have been done on a commercial product $\text{MnB}_4\text{O}_7 \cdot 8\text{H}_2\text{O}$

References:

Mazzetti, C. *et al.*, *Gazz. Chim. Ital.*, 1926, **56**, 19, (mp)

Khundkar, M.H. *et al.*, *J. Indian Chem. Soc.*, 1963, **40**, 9, (synth)

Abrahams, S.C. *et al.*, *J. Chem. Phys.*, 1974, **60**, 1899, (synth, cryst struct, magnetism)

Slough, W. *et al.*, *CA*, 1975, **82**, 35533, (thermochem data)

Berzina, I. *et al.*, *Struct. Rep. A*, 1975, **41**, 288, (hydrate, struct)

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