



>>Entry Name: Potassium tetraborate

ENTRY UNDER REVIEW

Synonym(s): Boric acid ($\text{H}_2\text{B}_4\text{O}_7$) dipotassium salt, 9Cl, 8Cl. Boron potassium oxide ($\text{B}_4\text{K}_2\text{O}_7$), 11Cl, 10Cl. Potassium biborate. Potassium borate. Dipotassium borate ($\text{B}_4\text{O}_7^{2(-)}$)

CAS Registry Number: 1332-77-0

$\text{K}_2\text{B}_4\text{O}_7$

Molecular Formula: $\text{B}_4\text{K}_2\text{O}_7$

Molecular Weight: 233.436

Accurate Mass: 233.929039

Percentage Composition: B 18.52%; K 33.50%; O 47.98%

Source/Synthesis: Synth. by melting together KO_2 and B_2O_3 in appropriate molar ratio

Use/Importance: Used in detergents, photographic developing solns. and fire extinguishers

Physical Description: Colourless triclinic cryst., hygroscopic

Melting Point: Mp 815°

Other Data: $\Delta H_f^\circ -3334.2 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -3136.8 \text{ kJ mol}^{-1}$; $S^\circ 208 \text{ J K}^{-1} \text{ mol}^{-1}$

>>Derivative: 'Tetrahydrate'

References:

Miller, F.A. *et al.*, *Anal. Chem.*, 1952, **24**, 1253, (*ir*)

Krogh-Moe, J., *Acta Cryst.*, 1961, **14**, 68, (*cryst struct*)

Tolédano, P., *Rev. Chim. Miner.*, 1964, **1**, 353, (*synth*)

Epperlein, B.W. *et al.*, *Z. Naturforsch., A*, 1975, **30**, 955, (*B-10 nmr, B-11 nmr*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 289, (*thermochem data*)

Skvortsov, V.G., *Zh. Neorg. Khim.*, 1985, **30**, 2341, (*uv*)