

Equilibrium constants for hydrolysis and associated equilibria in critical compilations

Boron

Equilibrium reactions	lgK at infinite dilution and $T = 298 \text{ K}$	
	Baes and Mesmer, 1976	NIST46
$\text{B(OH)}_3 + \text{H}_2\text{O} \rightleftharpoons \text{B(OH)}_4^- + \text{H}^+$	-9.236	-9.236 ± 0.002
$2 \text{B(OH)}_3 \rightleftharpoons \text{B}_2\text{O(OH)}_5^- + \text{H}^+$	-9.36	-9.306
$3 \text{B(OH)}_3 \rightleftharpoons \text{B}_3\text{O}_3(\text{OH})_4^- + \text{H}^+ + 2 \text{H}_2\text{O}$	-7.03	-7.306
$4 \text{B(OH)}_3 \rightleftharpoons \text{B}_4\text{O}_5(\text{OH})_4^{2-} + 2 \text{H}^+ + 3 \text{H}_2\text{O}$	-16.3	-15.032

C.F. Baes and R.E. Mesmer, *The Hydrolysis of Cations*. Wiley, New York, 1976, pp 111.

NIST46, NIST Critically Selected Stability Constants of Metal Complexes: Version 8.0. Available at:

www.nist.gov/srd/nist46

Distribution diagrams

These diagrams have been computed at two B concentrations ($1 \text{ mM} = 1 \times 10^{-3} \text{ mol L}^{-1}$ and $1 \text{ }\mu\text{M} = 1 \times 10^{-6} \text{ mol L}^{-1}$) with the 'best' equilibrium constants above (in green). Calculations assume $T = 298 \text{ K}$ for the limiting case of zero ionic strength (*i.e.*, even neglecting plotted ions).

