
Equilibrium constants for hydrolysis and associated equilibria in critical compilations

Barium

| Equilibrium reaction | lgK at infinite dilution and $T = 298\text{ K}$ | | |
|---|---|------------------------|------------------------|
| | Baes and Mesmer, 1976 | Nordstrom et al., 1990 | Brown and Ekberg, 2016 |
| $\text{Ba}^{2+} + \text{H}_2\text{O} \rightleftharpoons \text{BaOH}^+ + \text{H}^+$ | -13.47 | -13.47 | -13.32 ± 0.07 |

C C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 103.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 213–217.

D.K. Nordstrom, L.N. Plummer, D. Langmuir, E. Busenberg, H.M. May, B.F. Jones and D.L. Parkhurst, Revised chemical equilibrium data for major water-mineral reactions and their limitations. In: Chemical Modeling of Aqueous Systems II. D.C. Melchior and R.L. Bassett (eds.). ACS Symposium Series 416. ACS, Washington DC, 1990, pp. 398–446.

Distribution diagrams

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

