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Magnesium

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K		
	Baes and Mesmer, 1976	Nordstrom et al., 1990	Brown and Ekberg, 2016
$Mg^{2+} + H_2O \rightleftharpoons MgOH^+ + H^+$	–11.44	–11.44	–11.70 ± 0.04
$4\ Mg^{2+} + 4\ H_2O \rightleftharpoons Mg_4(OH_4)^{4+} + 4\ H^+$	–39.71		
$Mg(OH)_2(cr) + 2\ H^+ \rightleftharpoons Mg^{2+} + 2\ H_2O$	16.84	16.84	17.11 ± 0.04

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 99.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 178–195.

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 Mg concentrations (1 mM = $1x10^{-3}$ mol L^{-1} and 1 µM = $1x10^{-6}$ mol L^{-1}) with the 'best' equilibrium constants above (in green). Calculations assume T = 298 K for the limiting case of zero ionic strength (*i.e.*, even neglecting plotted ions).