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Equilibrium constants for hydrolysis and associated equilibria in critical compilations

Praseodymium

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K		
	Baes and Mesmer, 1976	NIST46	Brown and Ekberg, 2016
$Pr^{3+} + H_2O \rightleftharpoons PrOH^{2+} + H^+$	–8.1		–8.30 ± 0.03
$2\ Pr^{3+} + 2\ H_2O \rightleftharpoons Pr_2(OH)_2^{4+} + 2\ H^+$			–16.31 ± 0.20
$3\ Pr^{3+} + 5\ H_2O \rightleftharpoons Pr_3(OH)_5^{4+} + 5\ H^+$			–35.0 ± 0.3
$Pr(OH)_3(s) + 3\ H^+ \rightleftharpoons Pr^{3+} + 3\ H_2O$	19.5		18.57 ± 0.20
$Pr(OH)_3(s) \rightleftharpoons Pr^{3+} + 3\ OH^-$		–22.3 ± 1.0	

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 137.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 135-145.

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 Pr 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).