Erbium

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K	
	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$Er^{3+} + H_2O \rightleftharpoons ErOH^{2+} + H^+$	−7.9	−7.46 ± 0.09
$Er^{3+} + 2\ H_2O \rightleftharpoons Er(OH)_2^{+} + 2\ H^+$	(−15.9)	
$Er^{3+} + 3\ H_2O \rightleftharpoons Er(OH)_3 + 3\ H^+$	(−24.2)	
$Er^{3+} + 4\ H_2O \rightleftharpoons Er(OH)_4^{-} + 4\ H^+$	−32.6	
$2\ Er^{3+} + 2\ H_2O \rightleftharpoons Er_2(OH)_2^{4+} + 2\ H^+$	−13.65	−13.50 ± 0.20
$3\ Er^{3+} + 5\ H_2O \rightleftharpoons Er_3(OH)_5^{4+} + 5\ H^+$	<−29.3	−31.0 ± 0.3
$Er(OH)_3(s) + 3\ H^+ \rightleftharpoons Er^{3+} + 3\ H_2O$	15.0	15.79 ± 0.30
$Er(OH)_3(c) + OH^- \rightleftharpoons Er(OH)_4^-$	−3.6 ± 0.5	
$Er(OH)_3(c) \rightleftharpoons Er(OH)_3$	~ −9.2	

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. 247, 250−251 and 295−297.

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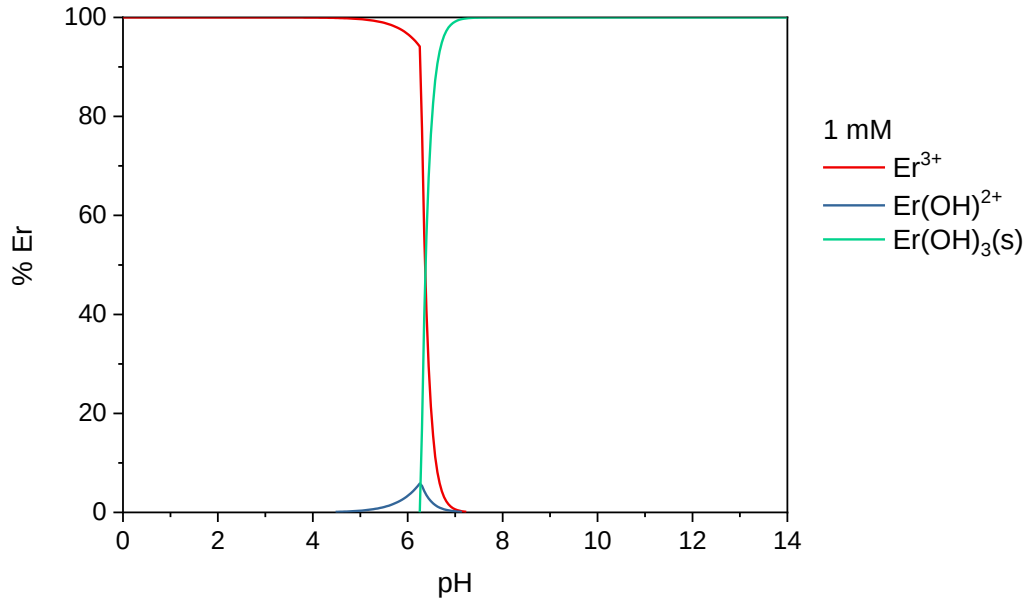
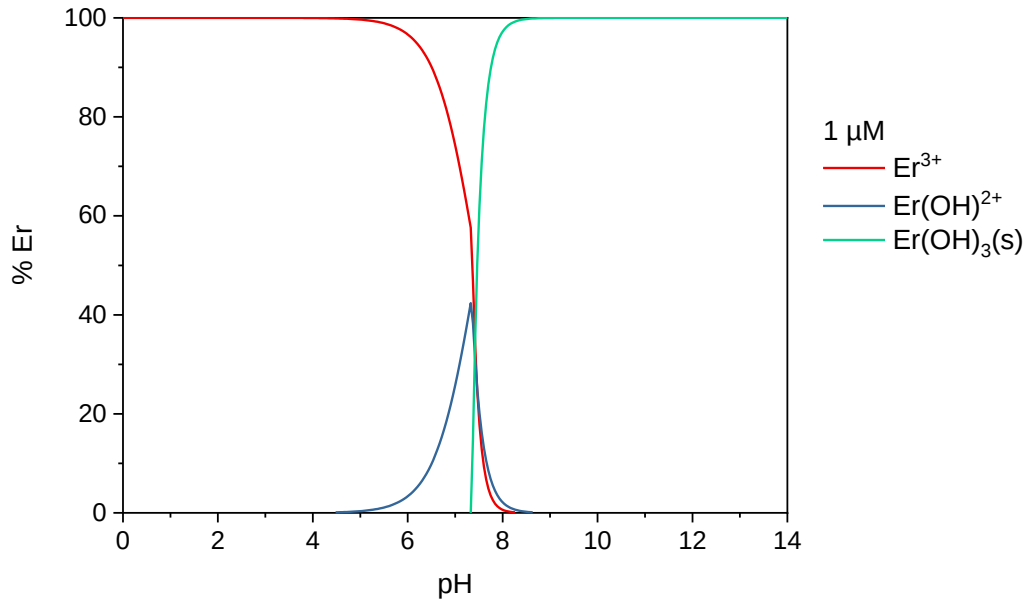
Distribution diagrams

These diagrams have been computed at two Er 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).





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