Cobalt(II)

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K	
	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$Co^{2+} + H_2O \rightleftharpoons CoOH^+ + H^+$	–9.65	−9.61 ± 0.17
$Co^{2+} + 2\ H_2O \rightleftharpoons Co(OH)_2 + 2\ H^+$	–18.8	−19.77 ± 0.11
$Co^{2+} + 3\ H_2O \rightleftharpoons Co(OH)_3^- + 3\ H^+$	–31.5	−32.01 ± 0.33
$Co^{2+} + 4\ H_2O \rightleftharpoons Co(OH)_4^{2-} + 4\ H^+$	–46.3	
$2\ Co^{2+} + H_2O \rightleftharpoons Co_2(OH)^{3+} + H^+$	–11.2	
$4\ Co^{2+} + 4\ H_2O \rightleftharpoons Co_4(OH)_4^{4+} + 4H^+$	–30.53	
$Co(OH)_2(s) + 2\ H^+ \rightleftharpoons Co^{2+} + 2\ H_2O$	12.3	13.24 ± 0.12
$CoO(s) + 2\ H^+ \rightleftharpoons Co^{2+} + H_2O$		13.71 ± 0.10

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 241.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 620–628.

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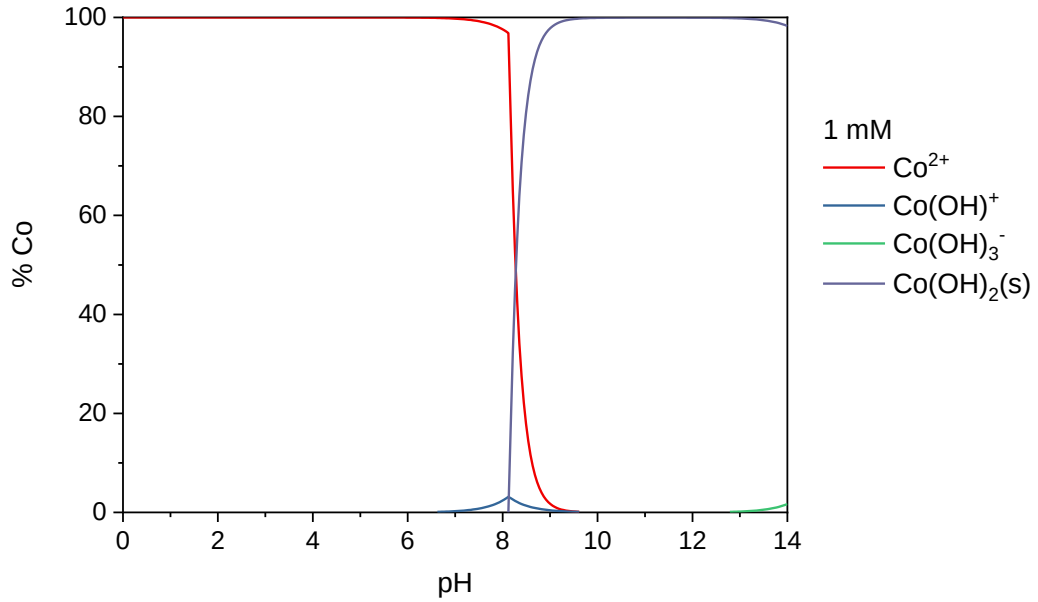
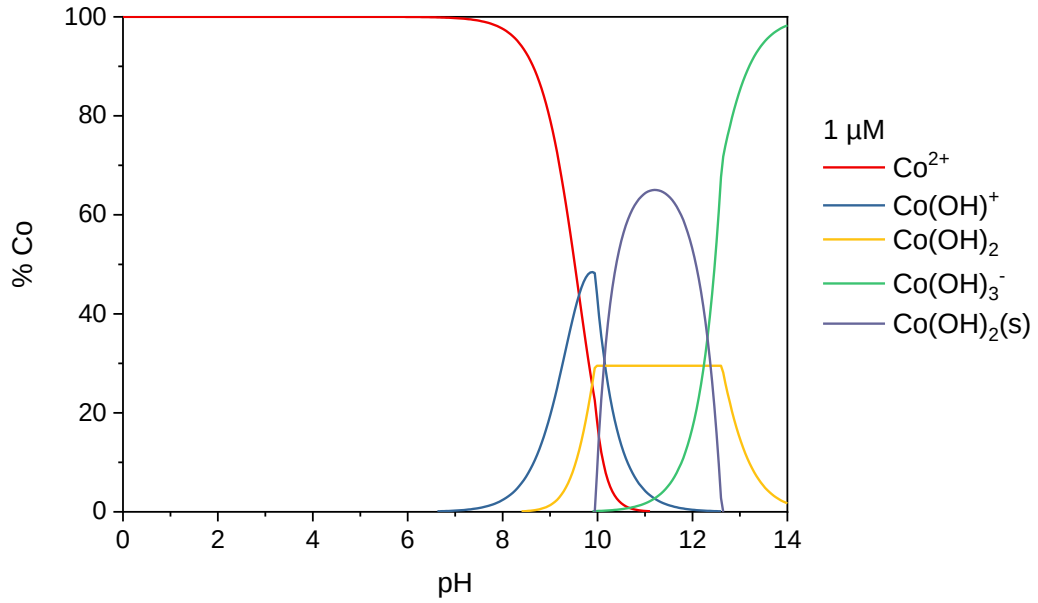
Distribution diagrams

These diagrams have been computed at two Co(II) 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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Cobalt(III)

Equilibrium reaction	lg*K* at infinite dilution and *T* = 298 K
	Brown and Ekberg, 2016
$Co^{3+} + H_2O \rightleftharpoons CoOH^{2+} + H^+$	−1.07 ± 0.11

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 628−632.

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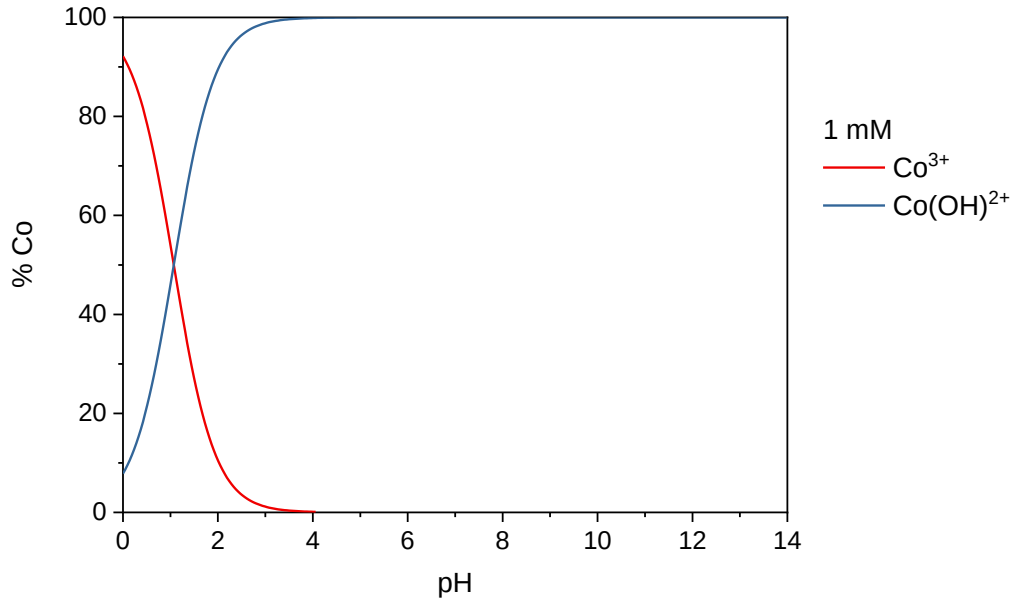
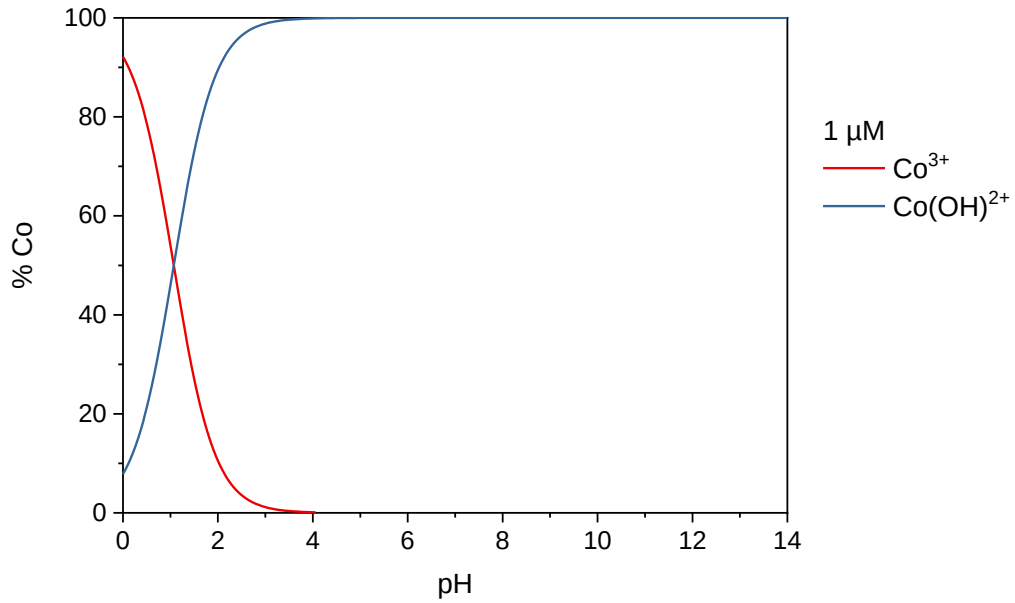
Distribution diagrams

These diagrams have been computed at two Co(III) concentrations (1 mM = 1x10^{-3} mol L^{-1} and 1 μM = 1x10^{-6} mol L^{-1}) with the 'best' equilibrium constant above. Calculations assume T = 298 K for the limiting case of zero ionic strength (*i.e.*, even neglecting plotted ions).





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