Beryllium

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K	
	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$Be^{2+} + H_2O \rightleftharpoons BeOH^+ + H^+$	–5.40	–5.39 ± 0.14
$Be^{2+} + 2\ H_2O \rightleftharpoons Be(OH)_2 + 2\ H^+$	–13.65	−11.20 ± 0.07
$Be^{2+} + 3\ H_2O \rightleftharpoons Be(OH)_3^- + 3\ H^+$	–23.25	−23.39 ± 0.27
$Be^{2+} + 4\ H_2O \rightleftharpoons Be(OH)_4^{2-} + 4\ H^+$	–37.41	
$2\ Be^{2+} + H_2O \rightleftharpoons Be_2OH^{3+} + H^+$	–3.97	−3.54 ± 0.04
$3\ Be^{2+} + 3\ H_2O \rightleftharpoons Be_3(OH)_3^{3+} + 3\ H^+$	–8.92	−8.83 ± 0.09
$5\ Be^{2+} + 6\ H_2O \rightleftharpoons Be_5(OH)_6^{4+} + 6\ H^+$		−19.1 ± 0.1
$6\ Be^{2+} + 8\ H_2O \rightleftharpoons Be_6(OH)_8^{4+} + 8\ H^+$	–27.2	−26.3 ± 0.1
α-$Be(OH)_2(cr) + 2\ H^+ \rightleftharpoons Be^{2+} + 2\ H_2O$	6.69	6.87±0.10
β-$Be(OH)_2(cr) + 2\ H^+ \rightleftharpoons Be^{2+} + 2\ H_2O$		6.49±0.10

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 95.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 155–178.

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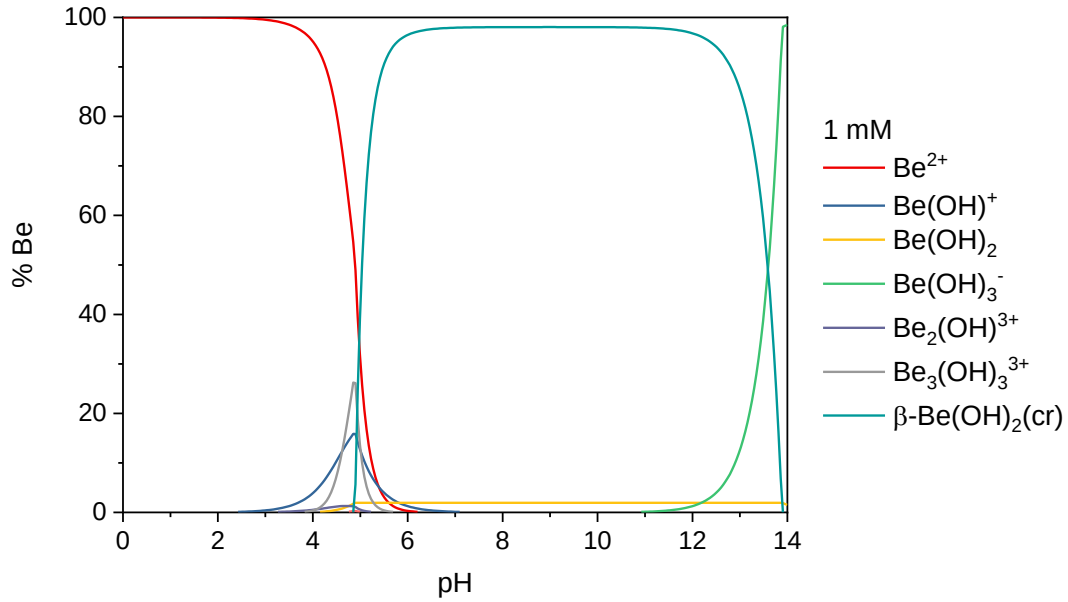
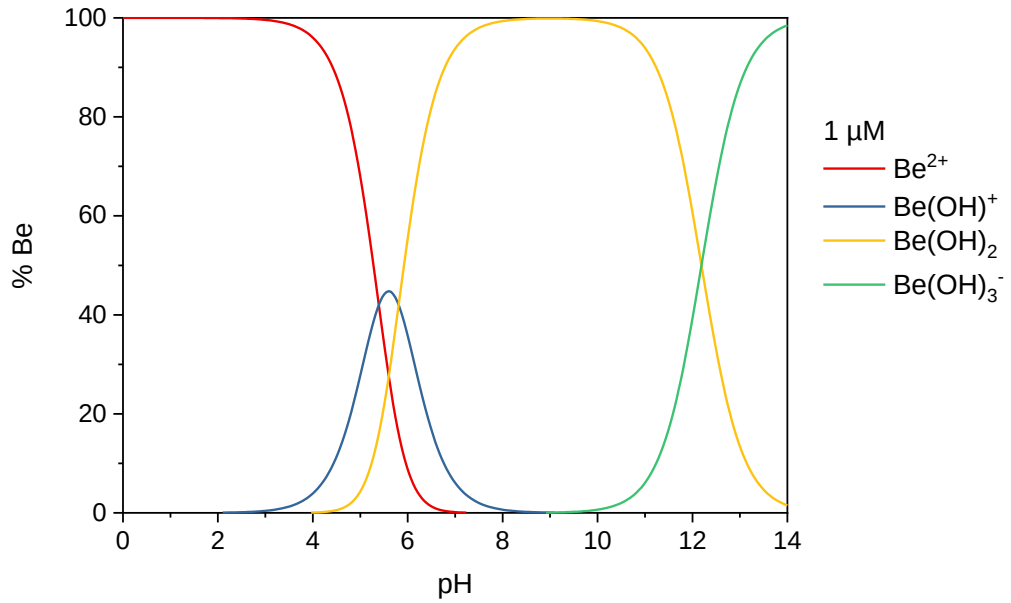
Distribution diagrams

These diagrams have been computed at two Be 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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