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Equilibrium constants for hydrolysis and associated equilibria in critical compilations

Gold(III)

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K
	Baes and Mesmer, 1976
$Au(OH)_3 + 2\ H^+ \rightleftharpoons AuOH^{2+} + 2\ H_2O$	1.51
$Au(OH)_3 + H^+ \rightleftharpoons Au(OH)_2^+ + H_2O$	< 1.0
$Au(OH)_3 + H_2O \rightleftharpoons Au(OH)_4^- + H^+$	–11.77
$Au(OH)_3 + 2\ H_2O \rightleftharpoons Au(OH)_5^{2-} + 2\ H^+$	–25.13
$Au(OH)_5^{2-} + 3\ H_2O \rightleftharpoons Au(OH)_6^{3-} + 3\ H^+$	< –41.1
$Au(OH)_3(c) \rightleftharpoons Au(OH)_3$	–5.51

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 285.

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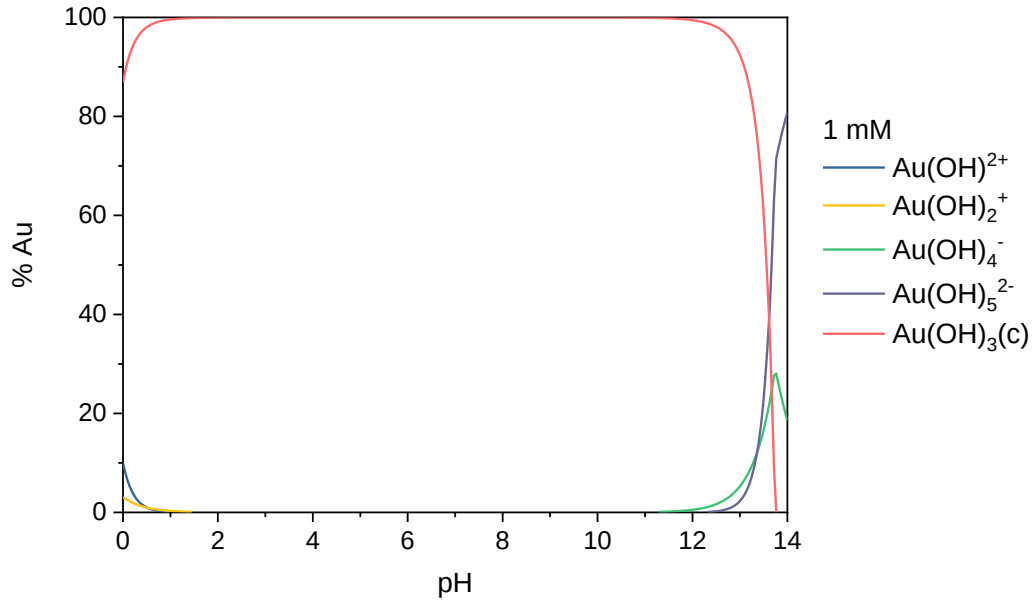
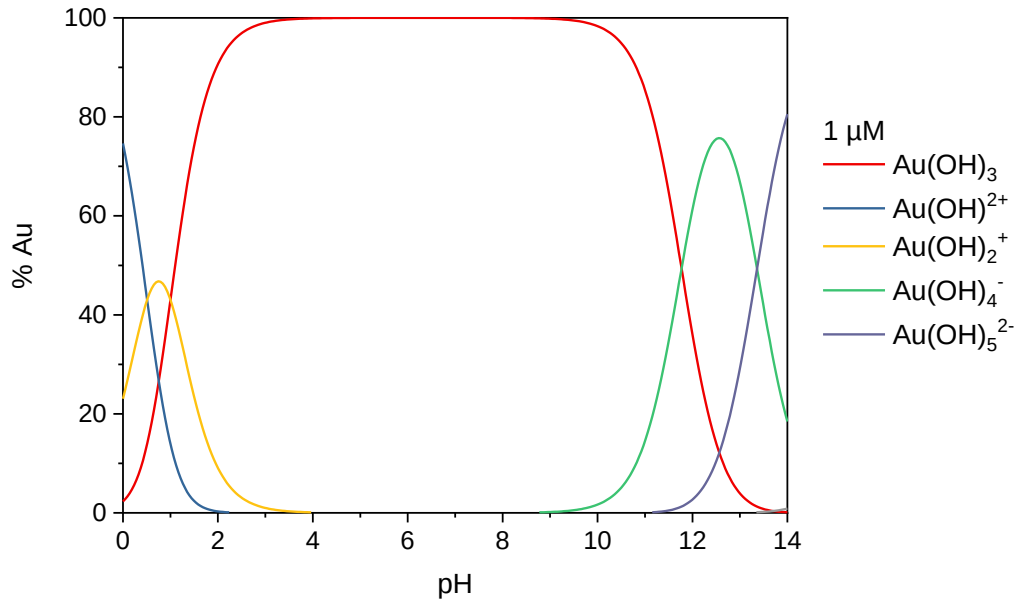
Distribution diagrams

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





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