Thallium(I)

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K	
	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$Tl^+ + H_2O \rightleftharpoons TlOH + H^+$	–13.21	
$Tl^+ + OH^- \rightleftharpoons TlOH$		0.64 ± 0.05
$Tl^+ + 2\ OH^- \rightleftharpoons Tl(OH)_2^-$		–0.7 ± 0.7
$½\ Tl_2O(s) + H^+ \rightleftharpoons Tl^+ + ½\ H_2O$		13.55 ± 0.20

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 335.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 817–826.

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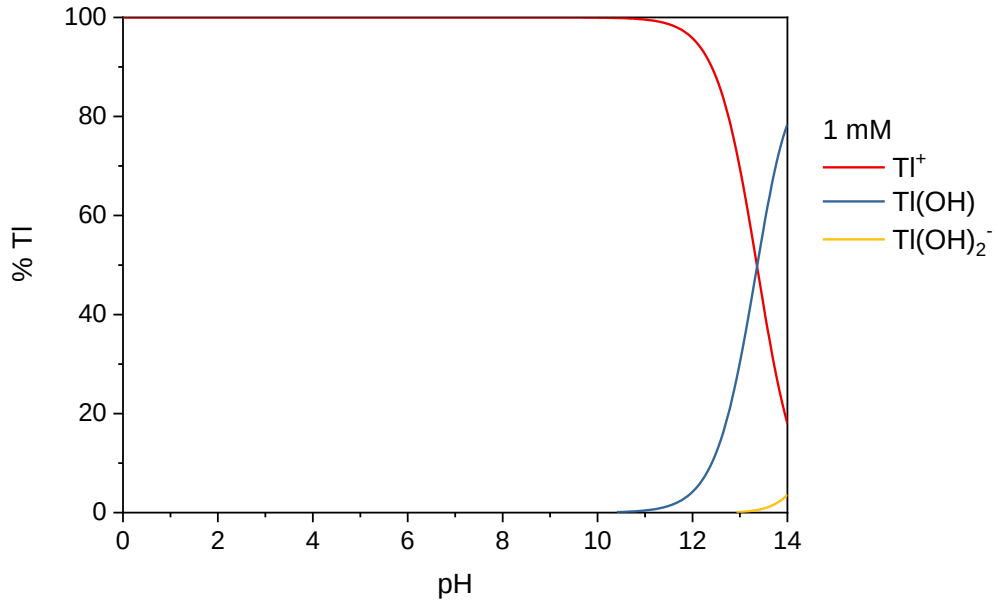
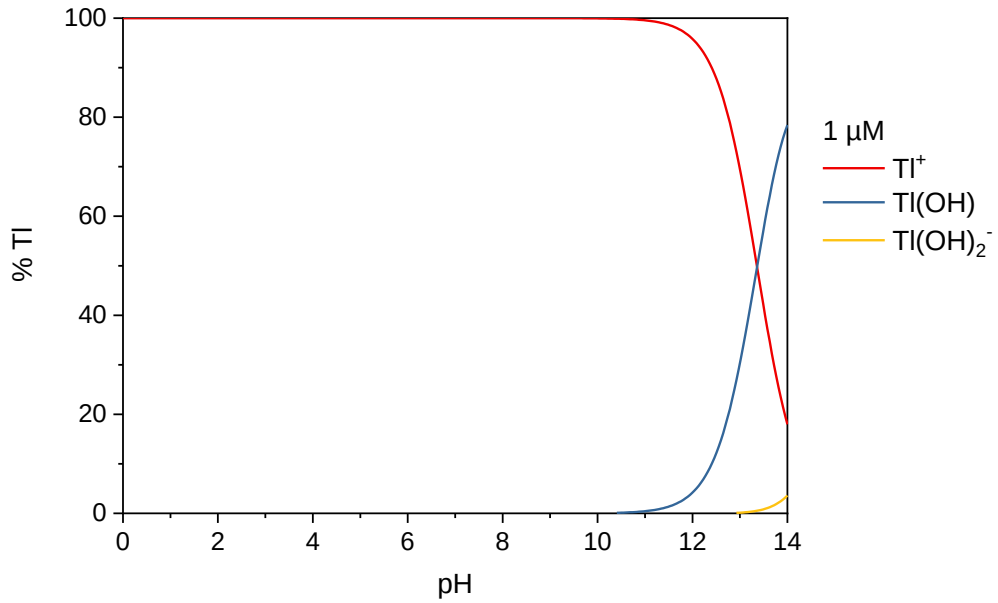
Distribution diagrams

These diagrams have been computed at two Tl(I) 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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Thallium(III)

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K	
	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$Tl^{3+} + H_2O \rightleftharpoons TlOH^{2+} + H^+$	–0.62	–0.22 ± 0.19
$Tl^{3+} + 2\ H_2O \rightleftharpoons Tl(OH)_2^+ + 2\ H^+$	–1.57	
$Tl^{3+} + 3\ H_2O \rightleftharpoons Tl(OH)_3 + 3\ H^+$	–3.3	
$Tl^{3+} + 4\ H_2O \rightleftharpoons Tl(OH)_4^- + 4\ H^+$	–15.0	
$½\ Tl_2O_3(s) + 3\ H^+ \rightleftharpoons Tl^{3+} + ³⁄₂\ H_2O$	–3.90	–3.90 ± 0.10

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 335.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 817–826.

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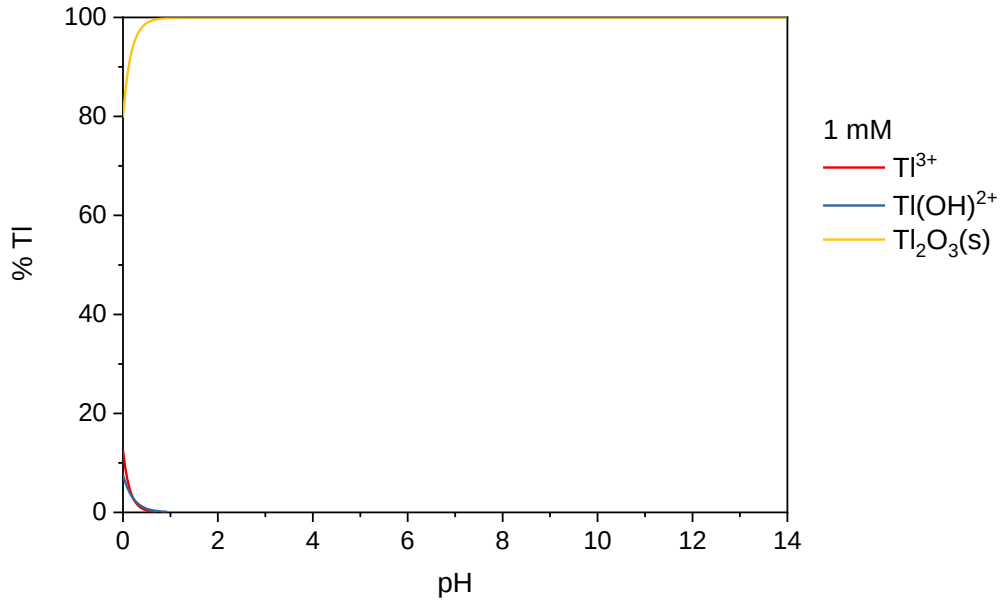
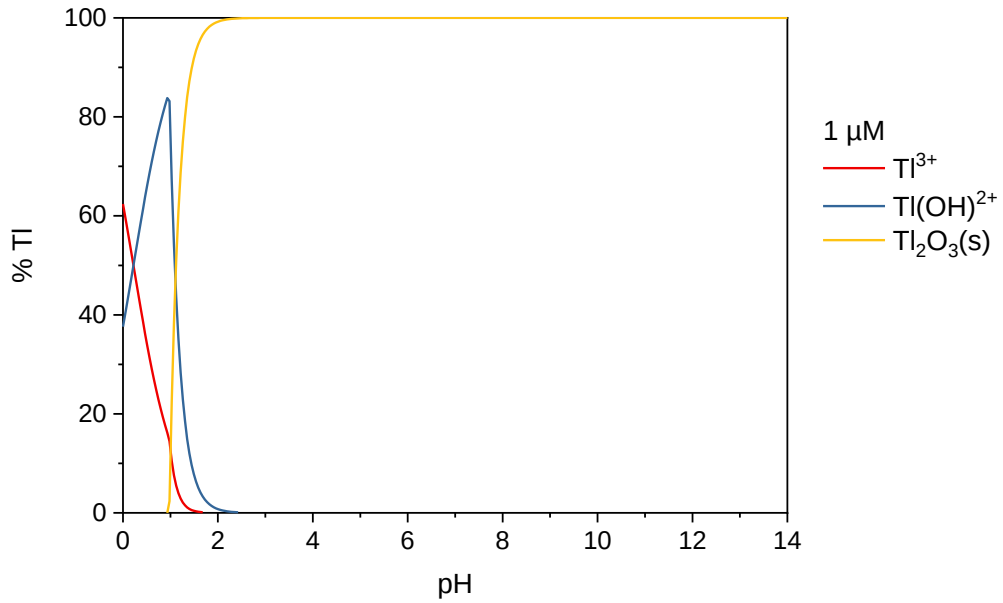
Distribution diagrams

These diagrams have been computed at twoTl(III) 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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