Zinc

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K		
	Baes and Mesmer, 1976	Powell and Brown, 2013	Brown and Ekberg, 2016
$Zn^{2+} + H_2O \rightleftharpoons ZnOH^+ + H^+$	−8.96	−8.96 ± 0.05	−8.94 ± 0.06
$Zn^{2+} + 2\ H_2O \rightleftharpoons Zn(OH)_2 + 2\ H^+$	−16.9	−17.82 ± 0.08	−17.89 ± 0.15
$Zn^{2+} + 3\ H_2O \rightleftharpoons Zn(OH)_3^- + 3\ H^+$	−28.4	−28.05 ± 0.05	−27.98 ± 0.10
$Zn^{2+} + 4\ H_2O \rightleftharpoons Zn(OH)_4^{2-} + 4\ H^+$	−41.2	−40.41 ± 0.12	−40.35 ± 0.22
$2\ Zn^{2+} + H_2O \rightleftharpoons Zn_2OH^{3+} + H^+$	−9.0	−7.9 ± 0.2	−7.89 ± 0.31
$2\ Zn^{2+} + 6H_2O \rightleftharpoons Zn_2(OH)_6^{2-} + 6\ H^+$	−57.8		
$ZnO(s) + 2\ H^+ \rightleftharpoons Zn^{2+} + H_2O$	11.14	11.12 ± 0.05	11.11 ± 0.10
$\varepsilon\text{-}Zn(OH)_2(s) + 2\ H^+ \rightleftharpoons Zn^{2+} + 2\ H_2O$		11.38 ± 0.20	11.38± 0.20
$\beta_1\text{-}Zn(OH)_2(s) + 2\ H^+ \rightleftharpoons Zn^{2+} + 2\ H_2O$		11.72 ± 0.04	
$\beta_2\text{-}Zn(OH)_2(s) + 2\ H^+ \rightleftharpoons Zn^{2+} + 2\ H_2O$		11.76 ± 0.04	
$\gamma\text{-}Zn(OH)_2(s) + 2\ H^+ \rightleftharpoons Zn^{2+} + 2\ H_2O$		11.70 ± 0.04	
$\delta\text{-}Zn(OH)_2(s) + 2\ H^+ \rightleftharpoons Zn^{2+} + 2\ H_2O$		11.81 ± 0.04	

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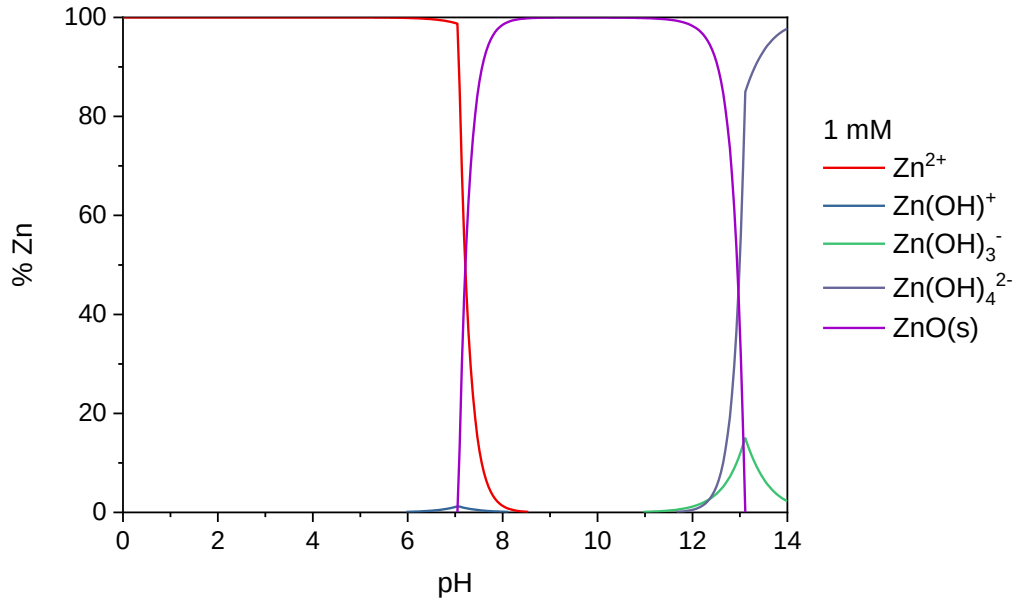
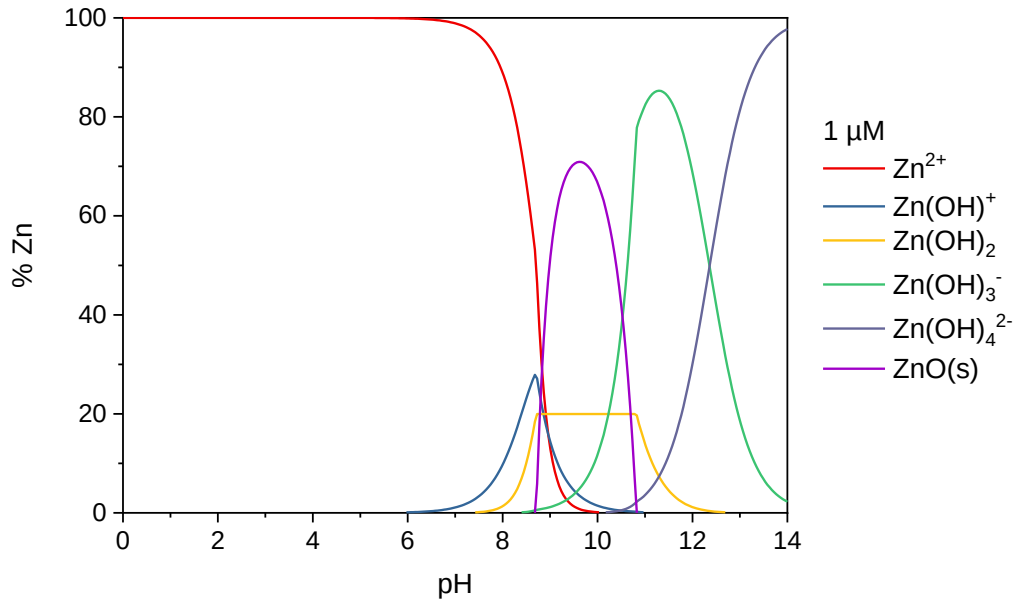
Distribution diagrams

These diagrams have been computed at two Zn 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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