# Plutonium(III)

| Equilibrium reactions | lg*K* at infinite dilution and *T* = 298 K | | | |
|---|---|---|---|---|
| | Baes and Mesmer, 1976 | NIST46 | Brown and Ekberg, 2016 | Grenthe et al., 2020 |
| $Pu^{3+} + H_2O \rightleftharpoons Pu(OH)^{2+} + H^+$ | | –7.0 | –6.9 ± 0.2 | –6.9 ± 0.3 |
| $Pu^{3+} + 3\ H_2O \rightleftharpoons Pu(OH)_3(cr) + 3\ H^+$ | –19.65 | | –15.8 ± 0.8 | –15 ± 1 |

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, pp. 186–187.

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 396–397.

I. Grenthe, X. Gaona, A.V.Plyasunov, L. Rao, W.H. Runde, B. Grambow, R.J.M. Konings, A. L. Smith and E.E. Moore, Second Update on the Chemical Thermodynamics of Uranium, Neptunium, Plutonium, Americium and Technetium, OECD Publishing, Paris 2020.

NIST46, NIST Critically Selected Stability Constants of Metal Complexes: Version 8.0. Available at: www.nist.gov/srd/nist46

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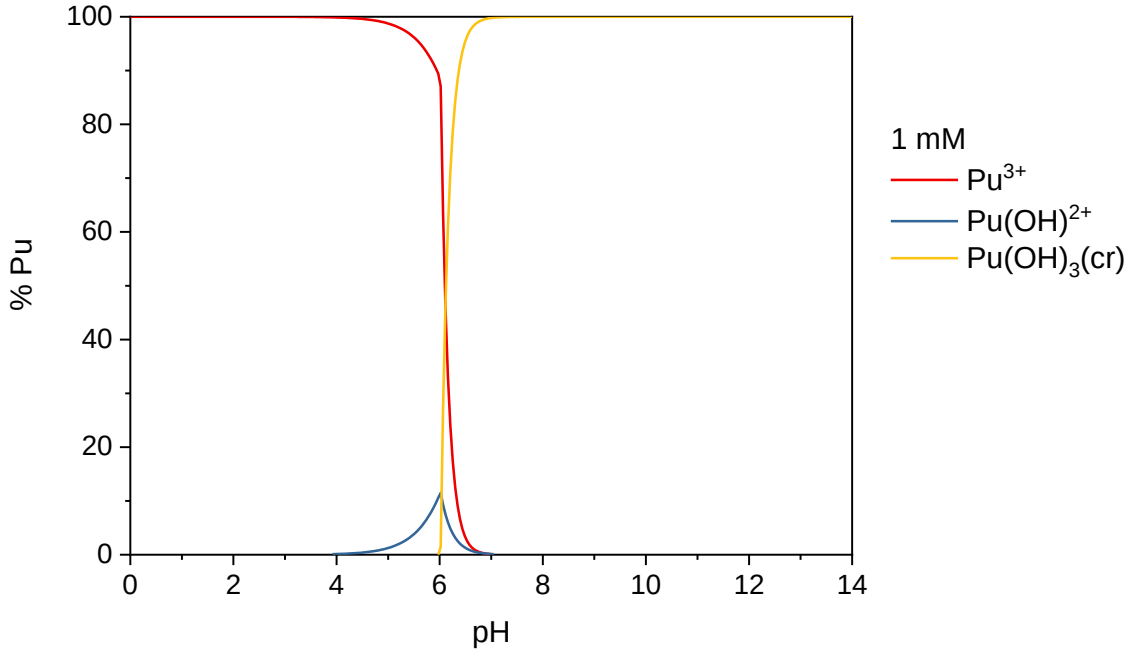
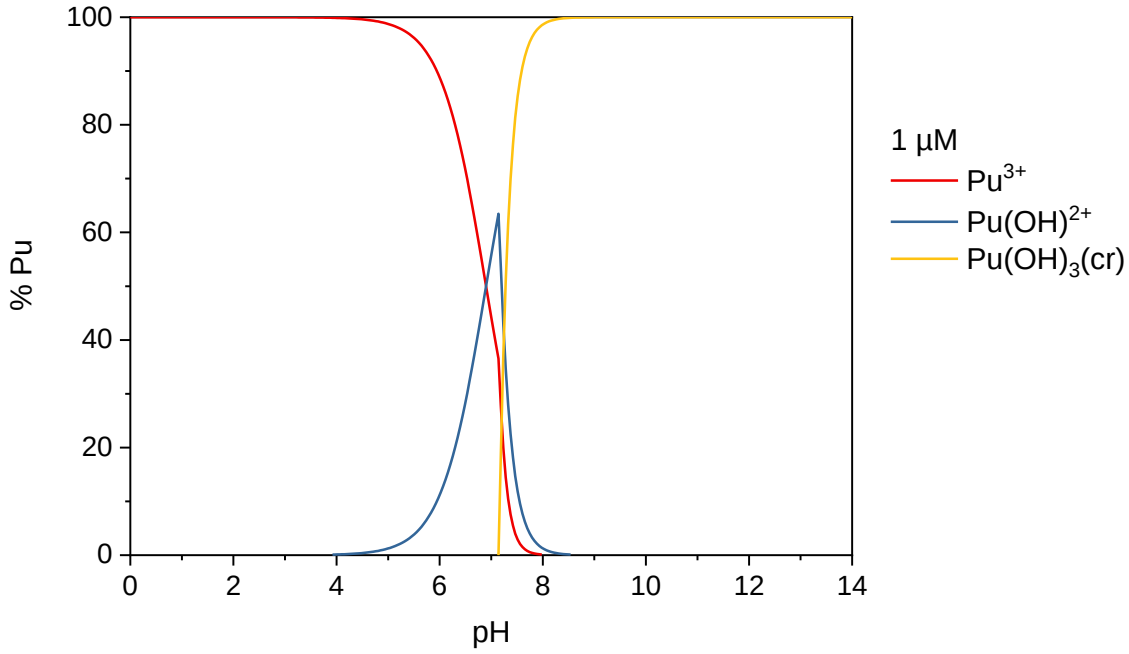
# Distribution diagrams

These diagrams have been computed at two Pu(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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