Germanium

Equilibrium reactions	lg*K* at infinite dilution and *T* = 298 K		
	Baes and Mesmer, 1976	Wood and Samson, 2006	Filella and May, 2023
$Ge(OH)_4 \rightleftharpoons GeO(OH)_3^- + H^+$	–9.31	–9.32 ± 0.05	–9.099
$Ge(OH)_4 \rightleftharpoons GeO_2(OH)_2^{2-} + 2\ H^+$	–21.9		
$GeO_2(OH)_2^{2-} + H^+ \rightleftharpoons GeO(OH)_3^-$			12.76
$8\ Ge(OH)_4 \rightleftharpoons Ge_8O_{16}(OH)_3^{3-} + 13\ H_2O + 3\ H^+$	–14.24		
$8\ Ge(OH)_4 + 3\ OH^- \rightleftharpoons Ge_8(OH)_{35}^{3-}$			28.33
GeO_2(s, hexa) + 2 $H_2O \rightleftharpoons Ge(OH)_4$		–1.35	–1.373
GeO_2(s, tetra) + 2 $H_2O \rightleftharpoons Ge(OH)_4$	-4.37	–5.02	–4.999

C.F. Baes and R.E. Mesmer, The Hydrolysis of Cations. Wiley, New York, 1976, p. 349.

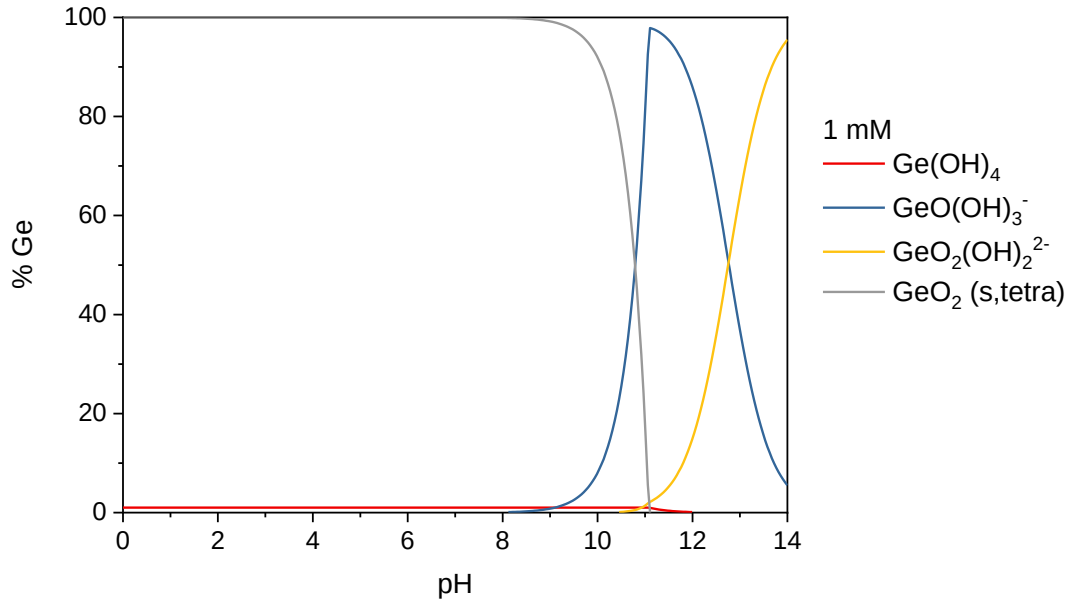
M. Filella and P.M. May, The aqueous solution chemistry of germanium under conditions of environmental and biological interest: inorganic ligands. Applied Geochemistry, 155, 105631 (2023). doi:10.1016/j.apgeochem.2023.105631

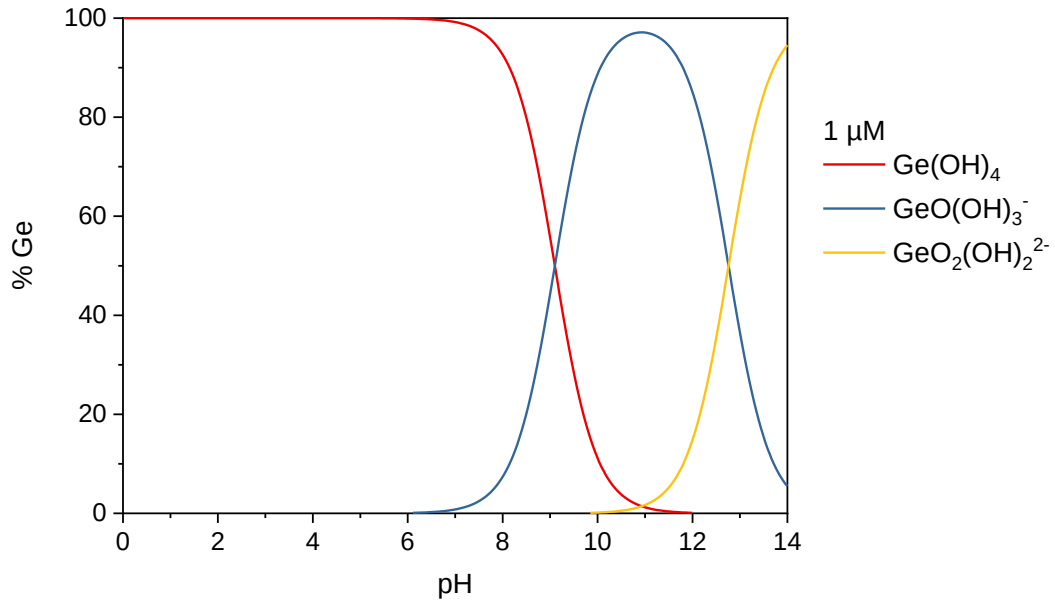
S.A. Wood and I.M. Samson, The aqueous geochemistry of gallium, germanium, indium and scandium. Ore Geol. Rev., 28, 57–102 (2006).

Contributors: Clemente Bretti, Elvira Bura Nakić, Montserrat Filella, Josep Galceran, Sofia Gama, Elżbieta Gumienna- Kontecka, Lucija Knežević, Gabriele Lando, Přemysl Lubal, Demetrio Milea, Andrzej Mular, Bartosz Orzeł, Michaela Rendošová, Matteo Savastano, Vladimir Sladkov, Kamila Stokowa-Sołtys, Yuliya Toporivska, Zuzana Vargová, Emanuele Zanda, Veronika Zinovyeva

Distribution diagrams

These diagrams have been computed at two Ge 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).





Contributors: Clemente Bretti, Elvira Bura Nakić, Montserrat Filella, Josep Galceran, Sofia Gama, Elżbieta Gumienna- Kontecka, Lucija Knežević, Gabriele Lando, Přemysl Lubal, Demetrio Milea, Andrzej Mular, Bartosz Orzeł, Michaela Rendošová, Matteo Savastano, Vladimir Sladkov, Kamila Stokowa-Sołtys, Yuliya Toporivska, Zuzana Vargová, Emanuele Zanda, Veronika Zinovyeva