

Gadolinium

Reaction	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$\text{Gd}^{3+} + \text{H}_2\text{O} \rightleftharpoons \text{GdOH}^{2+} + \text{H}^+$	-8.0	-7.87 ± 0.05
$\text{Gd}^{3+} + 2 \text{H}_2\text{O} \rightleftharpoons \text{Gd}(\text{OH})_2^+ + 2 \text{H}^+$	(-16.4)	
$\text{Gd}^{3+} + 3 \text{H}_2\text{O} \rightleftharpoons \text{Gd}(\text{OH})_3 + 3 \text{H}^+$	(-25.2)	
$\text{Gd}^{3+} + 4 \text{H}_2\text{O} \rightleftharpoons \text{Gd}(\text{OH})_4^- + 4 \text{H}^+$	-34.4	
$2 \text{Gd}^{3+} + 2 \text{H}_2\text{O} \rightleftharpoons \text{Gd}_2(\text{OH})_2^{4+} + 2 \text{H}^+$		-14.16 ± 0.20
$3 \text{Gd}^{3+} + 5 \text{H}_2\text{O} \rightleftharpoons \text{Gd}_3(\text{OH})_5^{4+} + 5 \text{H}^+$		-33.0 ± 0.3

$\text{Gd}(\text{OH})_3(\text{s}) + 3 \text{H}^+ \rightleftharpoons \text{Gd}^{3+} + 3 \text{H}_2\text{O}$	15.6	17.20 ± 0.48
$\text{Gd}(\text{OH})_3(\text{c}) + \text{OH}^- \rightleftharpoons \text{Gd}(\text{OH})_4^-$	-4.8 ± 0.3	
$\text{Gd}(\text{OH})_3(\text{c}) \rightleftharpoons \text{Gd}(\text{OH})_3$	-9.6	

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

P.L. Brown and C. Ekberg, Hydrolysis of Metal Ions. Wiley, 2016, pp. 247, 250–251 and 284–287.