

Thulium

Reaction	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$\text{Tm}^{3+} + \text{H}_2\text{O} \rightleftharpoons \text{TmOH}^{2+} + \text{H}^+$	-7.7	-7.34 ± 0.09
$2 \text{Tm}^{3+} + 2 \text{H}_2\text{O} \rightleftharpoons \text{Tm}_2(\text{OH})_2^{4+} + 2 \text{H}^+$		-13.2 ± 0.2
$3 \text{Tm}^{3+} + 5 \text{H}_2\text{O} \rightleftharpoons \text{Tm}_3(\text{OH})_5^{4+} + 5 \text{H}^+$		-30.5 ± 0.3
$\text{Tm}(\text{OH})_3(\text{s}) + 3 \text{H}^+ \rightleftharpoons \text{Tm}^{3+} + 3 \text{H}_2\text{O}$	15.0	15.56 ± 0.40

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 297–300.