

# Dysprosium

Reaction	Baes and Mesmer, 1976	Brown and Ekberg, 2016
$\text{Dy}^{3+} + \text{H}_2\text{O} \rightleftharpoons \text{DyOH}^{2+} + \text{H}^+$	-8.0	$-7.53 \pm 0.14$
$\text{Dy}^{3+} + 2 \text{H}_2\text{O} \rightleftharpoons \text{Dy}(\text{OH})_2^+ + 2 \text{H}^+$	(-16.2)	
$\text{Dy}^{3+} + 3 \text{H}_2\text{O} \rightleftharpoons \text{Dy}(\text{OH})_3 + 3 \text{H}^+$	(-24.7)	
$\text{Dy}^{3+} + 4 \text{H}_2\text{O} \rightleftharpoons \text{Dy}(\text{OH})_4^- + 4 \text{H}^+$	-33.5	
$2 \text{Dy}^{3+} + 2 \text{H}_2\text{O} \rightleftharpoons \text{Dy}_2(\text{OH})_2^{4+} + 2 \text{H}^+$		$-13.76 \pm 0.20$
$3 \text{Dy}^{3+} + 5 \text{H}_2\text{O} \rightleftharpoons \text{Dy}_3(\text{OH})_5^{4+} + 5 \text{H}^+$		$-30.6 \pm 0.3$

$\text{Dy(OH)}_3(\text{s}) + 3 \text{H}^+ \rightleftharpoons \text{Dy}^{3+} + 3 \text{H}_2\text{O}$	15.9	16.26 ± 0.30
$\text{Dy(OH)}_3(\text{c}) + \text{OH}^- \rightleftharpoons \text{Dy(OH)}_4^-$	-3.6 ± 0.3	
$\text{Dy(OH)}_3(\text{c}) \rightleftharpoons \text{Dy(OH)}_3$	-8.8	

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 290–292.