

# Tantalum

Reaction	Baes and Mesmer, 1976	Filella and May, 2019
$\text{Ta}(\text{OH})_5 + \text{H}^+ \rightleftharpoons \text{Ta}(\text{OH})_4^+ + \text{H}_2\text{O}$	~1	0.7007
$\text{Ta}_6\text{O}_{19}^{8-} + \text{H}^+ \rightleftharpoons \text{HTa}_6\text{O}_{19}^{7-}$		16.35
$\text{HTa}_6\text{O}_{19}^{7-} + \text{H}^+ \rightleftharpoons \text{H}_2\text{Ta}_6\text{O}_{19}^{6-}$		14.00
$\text{Ta}(\text{OH})_5 + \text{H}_2\text{O} \rightleftharpoons \text{Ta}(\text{OH})_6^- + \text{H}^+$	~-9.6	
$1/2 \text{Ta}_2\text{O}_5(\text{act}) + 5/2 \text{H}_2\text{O} \rightleftharpoons \text{Ta}(\text{OH})_5$	~-5.2	
$\text{Ta}(\text{OH})_5(\text{s}) \rightleftharpoons \text{Ta}(\text{OH})_5$		-5.295
$\text{Ta}_2\text{O}_5(\text{s}) + 5 \text{H}_2\text{O} \rightleftharpoons 2 \text{Ta}(\text{OH})_5$		-20.00

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

M. Filella and P.M. May, The aqueous solution thermodynamics of tantalum under conditions of environmental and biological interest. *Applied Geochemistry*, 109, 104402 (2019). doi:10.1016/j.apgeochem.2019.104402