

## Molybdenum(VI)

Reaction	Baes and Mesmer, 1976	Jolivet, 2000	NIST46	Crea et al., 2017
$\text{MoO}_4^{2-} + \text{H}^+ = \text{HMoO}_4^-$	3.89 <sup>a</sup>		4.24	4.47 ± 0.02
$\text{MoO}_4^{2-} + 2 \text{H}^+ = \text{H}_2\text{MoO}_4$	7.50 <sup>a</sup>			8.12 ± 0.03
$\text{HMoO}_4^- + \text{H}^+ = \text{H}_2\text{MoO}_4$			4.0	
$\text{Mo}_7\text{O}_{24}^{6-} + \text{H}^+ = \text{HMo}_7\text{O}_{24}^{5-}$		4.4		
$\text{HMo}_7\text{O}_{24}^{5-} + \text{H}^+ = \text{H}_2\text{Mo}_7\text{O}_{24}^{4-}$		3.5		
$\text{H}_2\text{Mo}_7\text{O}_{24}^{4-} + \text{H}^+ = \text{H}_3\text{Mo}_7\text{O}_{24}^{3-}$		2.5		
$7 \text{MoO}_4^{2-} + 8 \text{H}^+ = \text{Mo}_7\text{O}_{24}^{6-} + 4 \text{H}_2\text{O}$	57.74 <sup>a</sup>		52.99 <sup>b</sup>	51.93 ± 0.04

$7 \text{ MoO}_4^{2-} + 9 \text{ H}^+ = \text{Mo}_7\text{O}_{23}(\text{OH})^{5-} + 4 \text{ H}_2\text{O}$	62.14 <sup>a</sup>			58.90 ± 0.02
$7 \text{ MoO}_4^{2-} + 10 \text{ H}^+ = \text{Mo}_7\text{O}_{22}(\text{OH})_2^{4-} + 4 \text{ H}_2\text{O}$	65.68 <sup>a</sup>			64.63 ± 0.05
$7 \text{ MoO}_4^{2-} + 11 \text{ H}^+ = \text{Mo}_7\text{O}_{21}(\text{OH})_3^{3-} + 4 \text{ H}_2\text{O}$	68.21 <sup>a</sup>			68.68 ± 0.06
$19 \text{ MoO}_4^{2-} + 34 \text{ H}^+ = \text{Mo}_{19}\text{O}_{59}^{4-} + 17 \text{ H}_2\text{O}$	196.3 <sup>a</sup>		196 <sup>a</sup>	
$\text{MoO}_3(\text{s}) + \text{H}_2\text{O} = \text{MoO}_4^{2-} + 2 \text{ H}^+$	-12.06 <sup>a</sup>			

<sup>a</sup> at I = 3 M NaClO<sub>4</sub>

<sup>b</sup> at I = 0.1 M Na<sup>+</sup> medium, Data at I = 0 are not available

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

F. Crea, C. De Stefano, A. Irto, D. Milea, A. Pettignano and S. Sammartano, Modeling the acid-base properties of molybdate(VI) in different ionic media, ionic strengths and temperatures, by EDH, SIT and Pitzer equations. *Journal of Molecular Liquids*, 229, 15-26 (2017).

J.-P. Jolivet, *Metal Oxide Chemistry and Synthesis. From Solution to Solid State*. Wiley, 2000.

NIST46, NIST Critically Selected Stability Constants of Metal Complexes: Version 8.0. Available at: [www.nist.gov/srd/nist46](http://www.nist.gov/srd/nist46)