

Tellurium(-II)

Reaction	Filella and May, 2019 ^a
$\text{Te}^{2-} + \text{H}^+ \rightleftharpoons$	11.81
$\text{HTe}^- + \text{H}^+ \rightleftharpoons \text{H}_2\text{Te}$	2.476

^aThe number of significant figures are retained to minimise propagation of round-off errors; they should not be taken to indicate the relative uncertainty of the values, which is always at least one order of magnitude less than indicated.

M. Filella and P.M. May, The aqueous chemistry of tellurium: critically-selected equilibrium constants for the low-molecular-weight inorganic species. Environ. Chem. 16, 289–295 (2019). doi:10.1071/EN19017

Tellurium(IV)

Tellurite structures in solution are best written as TeO_3^{2-} , HTeO_3^- , H_2TeO_3 and $\text{Te}(\text{OH})_3^+$. Other notations can be found in the literature.

Reaction	Baes and Mesmer, 1976	Filella and May, 2019 ^a
$\text{TeO}_3^{2-} + \text{H}^+ \rightleftharpoons \text{HTeO}_3^-$		9.928
$\text{HTeO}_3^- + \text{H}^+ \rightleftharpoons \text{H}_2\text{TeO}_3$		6.445
$\text{H}_2\text{TeO}_3 \rightleftharpoons \text{HTeO}_3^- + \text{H}^+$	-2.68	
$\text{H}_2\text{TeO}_3 \rightleftharpoons \text{TeO}_3^{2-} + 2 \text{H}^+$	-12.5	
$\text{H}_2\text{TeO}_3 + \text{H}^+ \rightleftharpoons \text{Te}(\text{OH})_3^+$	3.13	2.415

$\text{TeO}_2(\text{s}) + \text{H}_2\text{O} \rightleftharpoons \text{H}_2\text{TeO}_3$		-4.709
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C.F. Baes and R.E. Mesmer, *The Hydrolysis of Cations*. Wiley, New York, 1976.

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Tellurium(VI)

Tellurate structures in solution are best written as $\text{TeO}_2(\text{OH})_4^{2-}$, $\text{TeO}(\text{OH})_5^-$ and $\text{Te}(\text{OH})_6$. Other notations can be found in the literature.

Reaction	Baes and Mesmer, 1976	Filella and May, 2019 ^a
$\text{TeO}_2(\text{OH})_4^{2-} + \text{H}^+ \rightleftharpoons \text{TeO}(\text{OH})_5^-$		10.83
$\text{TeO}(\text{OH})_5^- + \text{H}^+ \rightleftharpoons \text{Te}(\text{OH})_6$	7.68	7.696
$\text{TeO}_2(\text{OH})_4^{2-} + 2 \text{H}^+ \rightleftharpoons \text{Te}(\text{OH})_6$	18.68	
$\text{TeO}_3(\text{OH})_3^{3-} + 3 \text{H}^+ \rightleftharpoons \text{Te}(\text{OH})_6$	34.3	
$2 \text{Te}(\text{OH})_6 \rightleftharpoons \text{Te}_2\text{O}(\text{OH})_{11}^- + \text{H}^+$		-6.929

^aThe number of significant figures are retained to minimise propagation of round-off errors; they should not be taken to indicate the relative uncertainty of the values, which is always at least one order of magnitude less than indicated.

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M. Filella and P.M. May, The aqueous chemistry of tellurium: critically-selected equilibrium constants for the low-molecular-weight inorganic species. *Environ. Chem.* 16, 289–295 (2019). doi:10.1071/EN19017