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Lead(II)

Equilibrium	Baes and Mesmer, 1976	NIST46	Powell et al., 2009	Brown and Ekberg, 2016	Cataldo et al., 2018
$Pb^{2+} + H_2O = PbOH^+ + H^+$	–7.71 ± 0.1	–7.6	–7.46 ± 0.06	–7.49 ± 0.13	–6.47± 0.03
$Pb^{2+} + 2\ H_2O = Pb(OH)_2 + 2\ H^+$	–17.12 ± 0.1	–17.1	–16.94 ± 0.09	–16.99 ± 0.06	–16.12 ± 0.01
$Pb^{2+} + 3\ H_2O = Pb(OH)_3^- + 3\ H^+$	–28.06 ± 0.05	–28.1	–28.03± 0.06	–27.94 ± 0.21	–28.4 ± 0.1
$Pb^{2+} + 4\ H_2O = Pb(OH)_4^{2-} + 4\ H^+$			–40.8		
$2\ Pb^{2+} + H_2O = Pb_2(OH)^{3+} + H^+$	–6.36 ± 0.1	–6.4	–7.28± 0.09	–6.73 ± 0.31	
$3\ Pb^{2+} + 4\ H_2O = Pb_3(OH)_4^{2+} + 4\ H^+$	–23.88 ± 0.2	–23.9	–23.01 ± 0.07	–23.43 ± 0.10	

$3\ Pb^{2+} + 5\ H_2O = Pb_3(OH)_5^{+} + 5\ H^{+}$				–31.11 ± 0.10	
$4\ Pb^{2+} + 4\ H_2O = Pb_4(OH)_4^{4+} + 4\ H^{+}$	–20.88 ± 0.1	–20.9	–20.57± 0.06	–20.71 ± 0.18	
$6\ Pb^{2+} + 8\ H_2O = Pb_6(OH)_8^{4+} + 8\ H^{+}$	–43.61 ± 0.1	–43.6	–42.89± 0.07	–43.27 ± 0.47	
$Pb^{2+} + H_2O + Cl^{-} = PbOHCl + H^{+}$					–7.0 ± 0.3
$PbO(s) + 2\ H^{+} = Pb^{2+} + H_2O$			12.62 (red)[a] 12.90 (yellow)[b]		
$PbO(s) + H_2O = Pb^{2+} + 2\ OH^{-}$	–15.28 ± 0.05 (red)	-15.3	–15.3 (red)[a] –15.1 (yellow)[a]	–15.37 ± 0.04 (red) –15.1 ± 0.08 (yellow)	
$Pb_2O(OH)_{2(s)} + H_2O = 2\ Pb^{2+} + 4\ OH^{-}$			–14.9[a]		
$PbO_{(s)} + H_2O = Pb(OH)_2$			–4.4 (red)[a] –4.2 (yellow)[a]		
$Pb_2O(OH)_{2(s)} + H_2O = 2\ Pb(OH)_2$			–4.0		

$PbO_{(s)} + 2\ H_2O = Pb(OH)_3^- + H^+$			–1.4 (red)[a] –1.2 (yellow)[a]		
$Pb_2O(OH)_2(s) + 2\ H_2O = 2\ Pb(OH)_3^- + 2\ H^+$			–1.0		

[a]Feitknecht and Schindler (1963).

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Lead(IV)

Reaction	Powell et al., 2009
$\beta\text{-}PbO_2 + 2\ H_2O = Pb^{4+} + 4\ OH^-$	–64[a]
$\beta\text{-}PbO_2 + 2\ H_2O + 2\ OH^- = Pb(OH)_6^{2-}$	–4.5[a]

[a]Feitknecht and Schindler (1963).

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