

## Stability of pentavalent plutonium.

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Pu(V) stability in (0.1 or 1 M) Na<sub>2</sub>H (0.1 to 3 M) ClO<sub>4</sub> and in environmental conditions is discussed. It is shown that PuO<sub>2</sub><sup>+</sup> can be stable for pH = 1 to 8. Redox potentials and activity coefficients are reviewed, and it is concluded that there was too few experimental determinations of E(PuO<sub>2</sub><sup>+</sup>/Pu<sup>4+</sup>). The disproportionation of PuO<sub>2</sub><sup>+</sup> and Pu<sup>4+</sup> are then measured spectrophotometrically, and extrapolated to I = 0 ionic strength according to the SIT:

lg(K <sub>V</sub> ) values at different I [K <sub>V</sub> (mol/l) <sup>-4</sup> ]					lg(KI <sub>V</sub> ) [K <sub>IV</sub> (mol/l) <sup>-4</sup> ]
0.1 M	0.5 M	1 M	2 M	3 M	1M
3.42	4.36	4.85	4.88	5.13	2.06

Reviewed E(Pu<sup>3+</sup>/Pu<sup>4+</sup>) and E(PuO<sub>2</sub><sup>2+</sup>/PuO<sub>2</sub><sup>+</sup>) are used to propose

I (M)	E(VI/IV) (mV)	E(VI/III) (mV)	E(V/IV) (mV)	E(V/III) (mV)
0	1005	1008	1052	1031
0.5	1048	1001	1163	1058
1	1071	1015	1200	1080
2	1069	1029	1188	1088
3	1083.5	1050	1200	1108.5