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## **Spectrophotometric Study of the Dissociation of the Pu(IV) Carbonate Limiting Complex**

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The dissociation of the limiting complex of Pu(IV) was investigated by spectrophotometry in carbonate and bicarbonate media. The initial  $\text{Na}_2\text{CO}_3$  solution (of 0.1 to 1.5 M) was transformed into a  $\text{NaHCO}_3$  one by bubbling  $\text{CO}_2$ . The presence of an isobestic point is a strong indication that only two major species are in equilibrium in the solution under study: the quantitative interpretation indicates that only one  $\text{CO}_3^{2-}$  is exchanged between these two complexes, that no  $\text{OH}^-$  is exchanged over 3 pH units, and that there is no evidence of polymerisation. It is assumed for the interpretation, that the limiting complex is  $\text{Pu}(\text{CO}_3)_5^{6-}$ . The new species formed is then  $\text{Pu}(\text{CO}_3)_4^{4-}$ . This point is discussed and compared with published work on Pu(IV) solubility and spectrophotometry. The influence of the ionic strength is modelled by the S.I.T., then  $\lg K_5^\circ = -1.36 \pm 0.09$  is deduced. The results are compared with the values published for chemical analogues U, Np, Pu and Am(IV).