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THE CHEMISTRY OF INORGANIC FLUORIDES IN SOLUTION

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Electrochemical studies have been carried out on complex hexafluorometallates $[MF_6]^{n-}$ (n = 0,1,2,3) where M is a second or third row transition element. The results are given graphically below for studies in non-aqueous solvents where there is minimum interaction between the complex fluoride and the solvent. The studies have allowed a qualitative and in some cases quantitative examination of the trends in redox chemistry in these fluorides. The results for the fluorides are closely parallel to those of complex chlorides (see below) and comparisons will be made between the two sets of data. The results permit generalisations on the stability of oxidation states in these transition metal series. The existence of many new species has been established.

The electrochemical studies provide a predictive tool for the oxidising and reducing power of complex fluorides and chlorides and for the stability of the complexes to disproportionation. The relationship between the observed redox potentials and established reactivity series will be mentioned.

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