Characterization of the Inorganic/Organometallic Osmium(IV) Compound \([\text{Cp}^*\text{Os}^{\text{IV}}\text{Cl}]_2[\text{Os}^{\text{IV}}\text{Cl}_6]\) as Formed by the Reaction of OsCl\(_3\) with Pentamethylcyclopentadiene in Air

Torsten Sixt\(^a\), Wolfgang Kaim\(^a\), and Wilhelm Preetz\(^b\)

\(^a\) Institut für Anorganische Chemie, Universität Stuttgart, Pfaffenwaldring 55, D-70550 Stuttgart, Germany
\(^b\) Institut für Anorganische Chemie, Christian-Albrechts-Universität zu Kiel, Olshausenstraße 40, D-24098 Kiel, Germany

Reprint requests to Prof. Dr. W. Kaim. E-mail: kaim@iac.uni-stuttgart.de

Z. Naturforsch. \textbf{55}b, 235–237 (2000); received December 17, 1999

Osmium Compounds, Vibrational Spectra

Reaction of OsCl\(_3\) with pentamethylcyclopentadiene in ethanol in air yields the ionic osmium(IV) compound \([\text{Cp}^*\text{Os}^{\text{IV}}\text{Cl}]_2[\text{Os}^{\text{IV}}\text{Cl}_6]\) which has been identified structurally and by vibrational spectroscopy. Under comparable conditions the RuCl\(_3\) homologue yields the ruthenium(III) compound \([\text{Cp}^*\text{RuCl}_2]_2\), illustrating the more facile oxidation of the 5d element to the tetravalent state.