SYNTHESIS AND CHARACTERIZATION OF NEW DERIVATIVES OF OSMIUM IN HIGH OXIDATION STATES

R. Bougon
SCM - URA CNRS 331, CEA - Centre d'Etudes Nucléaires de Saclay, 91191 Gif-sur-Yvette, France

Previous investigations on fluorides and oxide fluorides of ruthenium [1,2] had indicated that some of the results could be extended and / or better explained through similar studies on osmium derivatives. This paper describes the first results obtained in that connection.

Among the most noticeable results it was found that osmium tetraoxide, OsO_4, could be fluorinated by krypton difluoride in HF solution into osmium oxide hexafluoride, $OsOF_6$. This new oxide fluoride of osmium in the formal oxidation state +8 was characterized by elemental analysis, X-ray powder data and vibrational spectroscopy.

Results concerning the synthesis and characterization of difluorochlorine (III) hexafluoro-osmate (V), $[ClF_2]^+ [OsF_6]^-$ are also presented.

1 L. Meublat, M. Lance, R. Bougon, Can. J. Chem., 67 (1989) 1729.

2 R. Bougon, W. V. Cicha, M. Lance, L. Meublat, M. Nierlich, J. Vigner, Inorg. Chem. 30. (1991) 102.