

Accepted Manuscript

Research paper

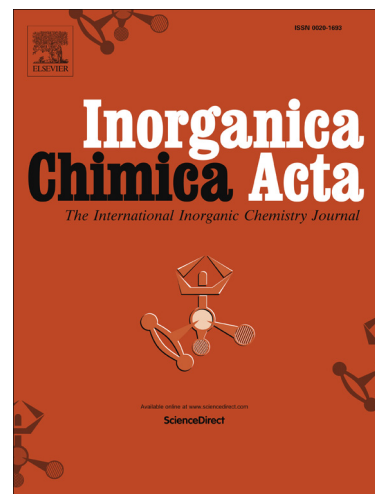
Synthesis of New Coordination Complexes of MF_5 ($\text{M} = \text{Nb}, \text{Ta}$), and Insights into the Ta(V) Reduction

Giulio Bresciani, Tiziana Funaioli, Stefano Zacchini, Mohammad Hayatifar, Fabio Marchetti, Guido Pampaloni

PII: S0020-1693(18)30725-4
DOI: <https://doi.org/10.1016/j.ica.2018.06.040>
Reference: ICA 18332

To appear in: *Inorganica Chimica Acta*

Received Date: 10 May 2018
Revised Date: 21 June 2018
Accepted Date: 23 June 2018



Please cite this article as: G. Bresciani, T. Funaioli, S. Zacchini, M. Hayatifar, F. Marchetti, G. Pampaloni, Synthesis of New Coordination Complexes of MF_5 ($\text{M} = \text{Nb}, \text{Ta}$), and Insights into the Ta(V) Reduction, *Inorganica Chimica Acta* (2018), doi: <https://doi.org/10.1016/j.ica.2018.06.040>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Synthesis of New Coordination Complexes of MF₅ (M = Nb, Ta), and Insights into the Ta(V) Reduction

Giulio Bresciani,^a Tiziana Funaioli,^a Stefano Zacchini,^b Mohammad Hayatifar,^{a,§} Fabio Marchetti,^a Guido Pampaloni^{a,*}

^a Università di Pisa, Dipartimento di Chimica e Chimica Industriale, Via Moruzzi 13, I-56124 Pisa.

^b Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Viale Risorgimento 4, I-40136 Bologna, Italy

* To whom correspondence should be addressed.

E-mail: guido.pampaloni@unipi.it; web page: https://people.unipi.it/guido_pampaloni/

§ Present address: Dr. Mohammad Hayatifar, Avenue de Cortenbergh 71, B-1000 Bruxelles, Belgium

Abstract. The pentafluorides of niobium and tantalum reacted with benzophenone (Ph₂CO), (2-diphenylphosphino)phenol (DPPPh) and 4-fluorobenzonitrile affording adducts corresponding to the asymmetric (Ph₂CO and DPPPh) and symmetric (4-fluorobenzonitrile) cleavage of the tetranuclear structure of MF₅. The products were characterized by elemental analysis, IR and multinuclear NMR spectroscopy. A selection of Ta(V) complexes was investigated in the attempt to obtain tantalum tetrafluoride derivatives, which are almost unknown in the literature. The reactions with cobaltocene in dichloromethane afforded unidentified paramagnetic materials and [CoCp₂][TaF₆], characterized by X-ray diffraction.

Keywords: niobium; tantalum; fluorides; electrochemistry; cobaltocene; reduction

Download English Version:

<https://daneshyari.com/en/article/7750292>

Download Persian Version:

<https://daneshyari.com/article/7750292>

[Daneshyari.com](https://daneshyari.com)