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Synthesis and properties of Fischer carbene complexes of *N,N*-dimethylaniline and anisole π -coordinated to chromium tricarbonyl

Nora-ann Weststrate^a, Shalane Bouwer^a, Christopher Hassenrück^b, Nina A. van Jaarsveld^a, David C. Liles^a, Rainer F. Winter^{b} and Simon Lotz^{a*}*

^aDepartment of Chemistry, University of Pretoria, Pretoria, 0002, South Africa

^bFachbereich Chemie, Universität Konstanz, Konstanz, 78457, Germany

KEYWORDS

Fischer carbene complexes; heterobi- and -trimetallic complexes; X-ray crystallography; (spectro)electrochemistry; quantum chemical calculations.

ABSTRACT

The reaction of lithiated *N,N*-dimethylaniline π -coordinated to $\text{Cr}(\text{CO})_3$ with $\text{W}(\text{CO})_6$ and alkylation with $[\text{Et}_3\text{O}][\text{BF}_4]$ afforded the *o*-, *m*- and *p*-isomers of the σ,π -bimetallic complexes $\{\eta^6\text{-Me}_2\text{NC}_6\text{H}_4\text{C}(\text{OEt})\text{W}(\text{CO})_5\}\text{Cr}(\text{CO})_3$ (*o*-, **1**, *m*-, **2** and *p*-isomer, **3**). A by-product of the reaction is found by the substitution of a carbonyl ligand in **1** by the aniline nitrogen atom to give $\{\eta^6\text{-C,N-}o\text{-Me}_2\text{NC}_6\text{H}_4\text{C}(\text{OEt})\text{W}(\text{CO})_4\}\text{Cr}(\text{CO})_3$ (**4**). As a result, the W-chelate ring dominates

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