

Mechanistische Untersuchungen zum reversiblen Gleichgewicht von metallorganischen Tripeldecker- und Sandwichkomplexen des Typs [Bis{(η^5 -Cp^R)Co}- μ -{ η^4 : η^4 -aren}] und [(η^5 -Cp^R)Co(η^6 -aren)]

Mechanistic Studies towards the Reversible Equilibrium between Metal Organic Triple Decker and Sandwich Complexes [Bis{(η^5 -Cp^R)Co}- μ -{ η^4 : η^4 -arene}] and [{(η^5 -Cp^R)Co(η^6 -arene)}]

Jörg J. Schneider*, Dirk Wolf

Institut für Anorganische Chemie der Universität Essen, Universitätsstraße 5-7, D-45117 Essen

Z. Naturforsch. **53 b**, 1267–1272 (1998); eingegangen am 30. Juni 1998

Organometallic Chemistry, Tripledecker Complexes, Sandwich Complexes, Arene Exchange

The arene ligand exchange mechanism of slipped arene triple deckers [Bis{(η^5 -Cp^R)Co}- μ -{ η^4 : η^4 -arene}] (R = Me₅, 1,2,4 tri-*tert* butyl, arene = benzene, toluene) **1** was studied by ¹H-NMR spectroscopy for different concentrations and solvents. It has been found that triple deckers of type **1** decompose slowly in solution. A unique equilibrium, between these triple deckers and the mixed sandwich complexes [(η^6 -arene)Co(η^5 -Cp^R)] and 14 e [(η^5 -Cp)Co]_{solv} fragments generated *in situ* by decomposition of **1** exists. In addition to this equilibrium arene lability of the thus formed mixed sandwich complex type has been detected by NMR making slipped triple deckers **1** ideal single source compounds for the generation of two [(η^5 -Cp)Co] fragments in one reaction step. Such fragments are valuable metal ligand components with high synthetic utility in organometallic chemistry.

* Sonderdruckerfordernungen an Priv.-Doz. Dr. J. J. Schneider. Fax: +49 201 183 2402, E-mail: joerg.schneider@uni-essen.de