

Synthesis and Reactivity of Bromo-*mer*-tricarbonyl-*trans*-bis[tri(1-cyclohepta-2,4,6-trienyl)phosphane]-manganese, $MnBr(CO)_3[P(C_7H_7)_3]_2$

Max Herberhold, Wolfgang Milius, and Andreas Pfeifer

Laboratorium für Anorganische Chemie der Universität Bayreuth,
Postfach 10 12 51, D-95440 Bayreuth, Germany

Reprint requests to Dr. M. Herberhold. Fax: +49 (0) 921 55 2157.
E-mail: Max.Herberhold@uni-bayreuth.de

Z. Naturforsch. **58b**, 11–15 (2003); received September 23, 2002

The reaction of $Mn(X)(CO)_5$ ($X = Cl, Br, I$) with 2 equivalents of tri(1-cyclohepta-2,4,6-trienyl)phosphane, $P(C_7H_7)_3$ ((1); [P] if coordinated to a metal) led stepwise first to *cis*- $\{\text{Mn}(X)(CO)_4[\text{P}]\}$ (**4a**, **4b**, **4c**) and then to *mer,trans*- $\{\text{Mn}(X)(CO)_3[\text{P}]_2\}$ ($X = Cl$ (**5a**), Br (**5b**), I (**5c**)). Nucleophilic displacement of the bromo ligand from (**5b**) by one-, three- or five-electron ligands gave the pseudohalide complexes *mer,trans*- $\{\text{Mn}(X)(CO)_3[\text{P}]_2\}$ ($X = \text{NCO}$ (**5d**) and NCS (**5e**)), the acetylacetone derivative $Mn(\text{acac})(CO)_2[\text{P}]_2$ (**6**) and the halfsandwich complexes $CpMn(CO)_2[\text{P}]$ (**7**) or $TpMn(CO)_3$ (**8**). According to the X-ray structure determination of **5e** the thiocyanate ligand is N-coordinated.

Key words: Manganese, Olefinic Phosphanes, Carbonyl-manganese Complexes