Hexahydro-closo-hexaborate as a Ligand in Coordination Compounds: A Second Polymorph of $[\text{Au}_2(\mu{\text{-bis}}-\eta^3\text{-B}_6\text{H}_6)(\text{PPh}_3)_2]$ 

T. Schaper, C. Näther, W. Preetz*

Institut für Anorganische Chemie der Christian-Albrechts-Universität, Olshausenstraße 40, D-24098 Kiel

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$\mu$-bis-(\eta^3-Hexahydro-closo-hexaborato)bis(triphenylphosphine)digold, Polymorphism, Crystal Structure

The crystal structure of a second room-temperature polymorph of the complex $[\text{Au}_2(\mu\text{-bis}-\eta^3\text{-B}_6\text{H}_6)(\text{PPh}_3)_2]$ is presented and compared with the previously reported phase. The change of the solvent which is layered on a solution of $[\text{Au}_2(\mu\text{-bis}-\eta^3\text{-B}_6\text{H}_6)(\text{PPh}_3)_2]$ in $\text{CH}_2\text{Cl}_2$ from petroleum ether to $n$-pentane leads to a second form with fundamental differences in the crystal structure. Instead of the octahedrally shaped crystals, space group $\text{Pa\bar{3}}$, the crystals in the present determination are orthorhombic needles crystallizing in space group $\text{Pccn}$ with a remarkable increased calculated density from 1.326 to 1.855 Mg/m$^3$.

* Reprint requests to Prof. Dr. W. Preetz.