

Metal Complexes of Heteroarenes, X [1].

η^1 -Coordination of Phosphinine: Synthesis and Structure of *cis*-Dichloro-bis(2,6-dimethyl-4-phenyl-phosphinine)platinum

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Cis-Dichloro-bis(2,6-dimethyl-4-phenyl- η^1 -phosphinine)platinum (**3**) has been prepared by ligand substitution from *cis*-dichloro(2,5-cyclooctadiene)platinum and characterized by spectroscopy (^1H , ^{13}C , ^{31}P NMR, IR, UV-Vis), CV and X-ray diffraction (space group $P2_1/c$, $a = 14.998$, $b = 16.540$, $c = 11.506$ Å, $\alpha = \gamma = 90^\circ$, $\beta = 92.46^\circ$, $Z = 4$). In line with findings for similar P hybridization states, the Pt-P bond length (221 pm) in **3** equals that in η^1 -phosphaalkene Pt complexes and falls short of the respective parameters in Pt phosphane species. The stretching frequencies ν_{PtCl} and the bond length Pt-Cl indicate that phosphinines and phosphaalkenes, relative to phosphanes, adopt a lower position on the *trans*-influence scale. This gradation is also suggested by the coupling constants $^1J(^{195}\text{Pt}, ^{31}\text{P})$.

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