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N-Metalla Hydridophosphazenes: Precursors for Heterobimetallic Complexes and Hydridophosphazene Oligomers and Polymers

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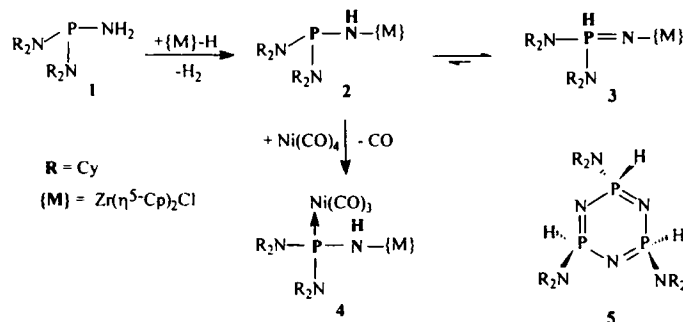
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N-Metalla Hydridophosphazenes: Precursors for Heterobimetallic Complexes and Hydridophosphazene Oligomers and Polymers

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The tautomerisation of NH-aminophosphanes to the corresponding PH-imino-phosphoranes has been the subject of several experimental and theoretical studies^[1]. The treatment of aminobis(diorganylamino)phosphane **1**^[2] with Cp₂Zr(H)Cl leads to a mixture of the tautomers **2** and **3** in a ratio of 1:20. Subsequent reaction of **3** with tetracarbonyl nickel affords in quantitative yield the phosphanylamido-Ni(CO)₃-complex **4**, whose formation is presumably preceded by conversion of **3** into the thermodynamically less favoured tautomer **2**.



The cyclophosphazene **5** is obtained by cleavage of **3** with triethylammonium chloride. Constitution and configuration of this first representative of a trihydridocyclophosphazene **5** are unequivocally proven by the results of NMR- and MS-studies. According to our investigations, the previously described compound [(Me₂N)(N)PN]₃^[3] is no cyclophosphazene, but a hydridophosphazene polymer. The polymeric constitution is confirmed by NMR- and MALDI-TOF-MS-investigations.

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