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Aminobis(Diorganylamino)Phosphanes: Versatile Reagents in Hydridophosphazene Chemistry

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AMINOBIS(DIORGANYLAMINO)PHOSPHANES: VERSATILE REAGENTS IN HYDRIDOPHOSPHAZENE CHEMISTRY

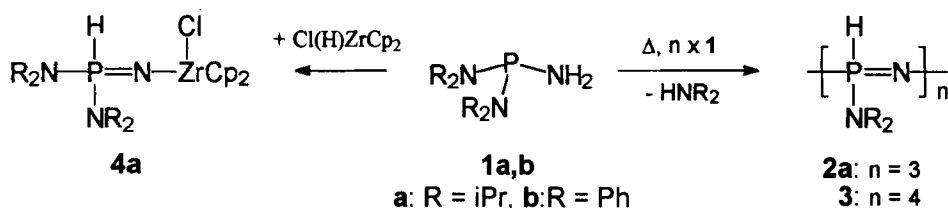
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Abstract: The synthesis, crystal structure, polymerisation and metal complexation of aminobis(diorganylamino)phosphanes are discussed.

Aminobis(diorganylamino)phosphanes have hitherto only been postulated as reaction intermediates in the synthesis of hydridophosphazenes [1].

By treatment of bis(diorganylamino)chlorophosphanes with lithium amide the title compounds **1a,b** are obtained. The crystal structure of **1b** is discussed.

At room temperature **1a,b** react via amine elimination to oligomeric and polymeric hydridophosphazenes, from which the *cis* and *trans* isomers of the cyclotriphosphazene **2a** and the cyclotetraphosphazene **3** can be isolated as stable products.



2a can be synthesized in much higher selectivity by cleavage of the Zr-N bond in **4a** which is obtained by reaction of **1a** with Cl(H)ZrCp₂.

Furthermore the reaction behaviour of **1a** with main group and transition metal compounds is reported.

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