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## Phosphorus, Sulfur, and Silicon and the Related Elements

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### 1-Phospha- and 1-Aza-3-Phosphaallylic Anions

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## 1-PHOSPHA- AND 1-AZA-3-PHOSPHAALLYLIC ANIONS

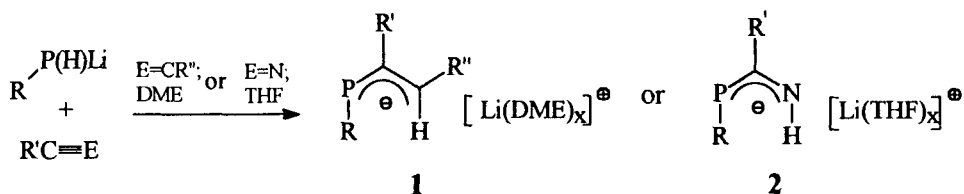
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**Abstract** Synthesis, structure and reactivity of 1-phospha- and 1-aza-3-phosphaallyl anions are discussed.

Heteroallyl anions containing nitrogen or phosphorus are rather well explored and found to be remarkable chelate ligands for main group and transition metals.

We were able to realize a convenient synthesis of various 1-phosphaallylic systems **1** by treatment of lithium aryl- or alkylphosphanides with different C-C-triple bonds [1a,c]. **1** exhibits versatile reactivity, e. g. in cycloaddition reactions [1d] or intramolecular cyclization [1b]. Application of the synthetic route for 1-phosphaallyl anions to nitriles instead of acetylenes makes the 1-aza-3-phosphaallylic systems **2** accessible, which can be protonated to the corresponding NH<sub>2</sub>-substituted phosphaaalkenes [2]. The x-ray structures of the latter two types of compounds are discussed.



- [1] a) E. NIECKE, M. NIEGER, P. WENDEROTH, *J. Am. Chem. Soc.*, **115**, 6989-6990 (1993); b) E. NIECKE, M. NIEGER, P. WENDEROTH, *Angew. Chem.*, **106**, 362-363 (1994); *Angew. Chem. Int. Ed. Engl.*, **33**, 353-354 (1994); c) K. PAASCH, M. NIEGER, P. WENDEROTH, E. NIECKE, to be published; d) E. NIECKE, M. NIEGER, P. WENDEROTH, *Angew. Chem.*, **106**, 2045-2046 (1994); *Angew. Chem. Int. Ed. Engl.*, **33**, 1953-1955 (1994).  
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