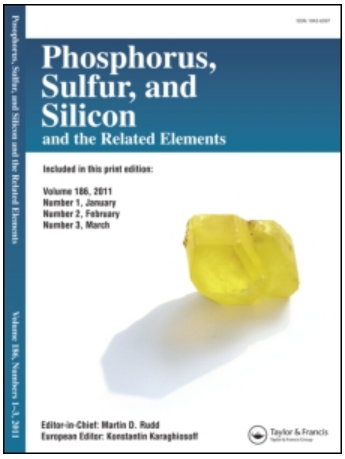

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Reactions of Sterically Protected 1-Halo- and 1-Pseudohalo-2-Phosphaethenyl-Lithiums

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To cite this Article Ito, Shigekazu , Toyota, Kozo and Yoshifuji, Masaaki(1999) 'Reactions of Sterically Protected 1-Halo- and 1-Pseudohalo-2-Phosphaethenyl-Lithiums', Phosphorus, Sulfur, and Silicon and the Related Elements, 147: 1, 441
To link to this Article: DOI: 10.1080/10426509908053700
URL: http://dx.doi.org/10.1080/10426509908053700

Phosphorus, Sulfur and Silicon, 1999, Vol. 147, pp. 441-441
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Reactions of Sterically Protected 1-Halo- and 1-Pseudohalo-2-Phosphaethenyl-Lithiums

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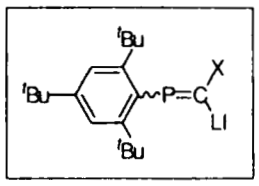
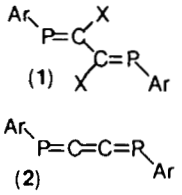
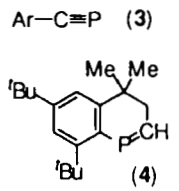
Phosphorus analogs of alkylidenecarbenoid, Ar–P=C(X)Li, where X equals halogen or pseudohalogen atom, such as Cl, Br, or SPh, have been generated by use of the 2,4,6-tri-*t*-butylphenyl group (abbreviated to Ar in the Scheme) as a protecting group for low coordinated organophosphorus compounds. The reaction with methyl iodide and with some aldehydes or ketones, at low temperature, gave the corresponding alkylation products[1]. The reaction with copper salts gave 1,4-diphosphabutadiene (**1**) or 1,4-diphosphabutatriene (**2**), depending upon the substituent X[2,3], as well as reaction conditions, such as reaction temperature and time, solvent, presence or absence of oxygen. Upon warming the phosphaethenyllithiums, thus generated, the chloro derivative of *E*-configuration gave a phosphaalkyne (**3**) via [1,2]-aromatic migration[4], whereas the bromo derivative of *Z*-configuration gave a 1-phospha-3,4-dihydronaphthalene derivative (**4**), that is a formal C–H insertion product of a phosphinidenecarbene intermediate[5].







References

[1] Yoshifuji, M.; Ito, S.; Toyota, K.; Yasunami, M., *Bull. Chem. Soc. Jpn.*, **1995,** *68,* 1206.

[2] Ito, S.; Toyota, K.; Yoshifuji, M., *Chem. Lett.*, **1995,** 747.

[3] Ito, S.; Yoshifuji, M., *Chem. Lett.*, **1998,** 651.

[4] Yoshifuji, M.; Niitsu, T.; Inamoto, N., *Chem. Lett.*, **1988,** 1733.

[5] Ito, S.; Toyota, K.; Yoshifuji, M., *J. Chem. Soc., Chem. Commun.*, **1997,** 1637.