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

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### Synthesis and Reactivity of a 2,5-Dihydro-1,2,5-phospha-diborole Derivative

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# Synthesis and Reactivity of a 2,5-Dihydro-1,2,5-phospha-diborole Derivative

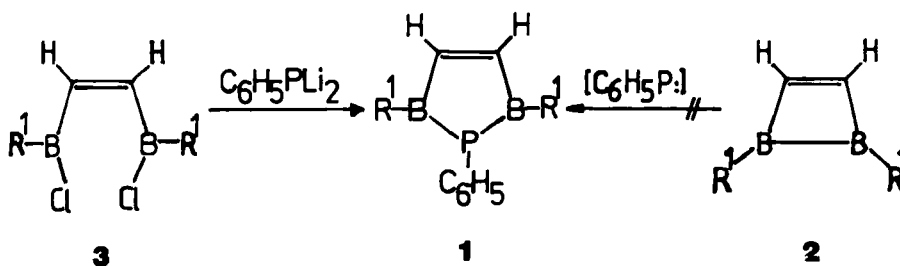
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In the heterocycle  $(\text{EtC})_2(\text{MeB})_2\text{S}$  the sulfur atom may be replaced by a  $\text{CR}_2$  or a  $\text{NR}$  group; however, attempts to prepare the corresponding phosphorus compound via this route were unsuccessful. Also insertion of phenyl-phosphinidene  $[\text{C}_6\text{H}_5\text{P}]$  into the B-B bond of the 1,2-dihydro-1,2-diborete **2** ( $\text{R}^1 = \text{N}(\text{CHMe}_2)_2$ ) failed. The reaction between the cis-diborylethene **3** ( $\text{R}^1 = \text{N}(\text{CHMe}_2)_2$ ) and  $\text{C}_6\text{H}_5\text{PLi}_2$  in  $\text{C}_6\text{H}_6$  results in the formation of **1** in 84% yield. The yellowish compound can be sublimed, it is moderately stable in air due to electronic and steric shielding of the boron atoms by the amino groups.



In the NMR spectra long-range P-H couplings and a high-field  $^{31}\text{P}$  signal are observed. **1** acts as a four-electron donor forming complexes with the 14e complex fragments  $\text{Fe}(\text{CO})_3$  and  $\text{Co}(\text{C}_5\text{H}_5)$ .

