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### First Example for Competitive Formation of 1*H*-Phosphirene and $\eta^1$ -1-Phosphaallene Complexes

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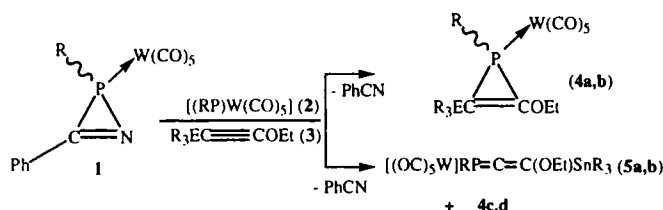
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## First Example for Competitive Formation of 1*H*-Phosphirene and $\eta^1$ -1-Phosphaallene Complexes

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2*H*-azaphosphirene complex **1**<sup>[1]</sup> serves as an efficient precursor for terminal phosphanedyl complex **2** ( $R = \text{CH}(\text{SiMe}_3)_2$ ), which was trapped with acetylene derivatives **3a-e** ( $R_3E = \text{Me}_3\text{Si}$  (**3a**),  $\text{Ph}_3\text{Si}$  (**3b**),  $\text{Me}_3\text{Sn}$  (**3c**),  $\text{Ph}_3\text{Sn}$  (**3d**),  $\text{tBu}_3\text{Sn}$  (**3e**)) to yield 2,3-bifunctionalized 1*H*-phosphirene **4** and/or  $\eta^1$ -1-phosphaallene complexes **5**.<sup>[2,3]</sup> Complexes **4a-d** were formed in the case of **3a-d**, whereas  $\eta^1$ -1-phosphaallene complexes **5a,b** were generated only, if stannyl-substituted acetylenes **3c,d** were used. In these cases, **4c,d** were obtained as byproducts. If **3e** was employed, having *tert*-butyl



groups at tin, then no  $\eta^1$ -1-phosphaallene complexes were formed, but, instead, diastereoisomeric complexes **6a,b** obtained, exclusively. These complexes are related to 1*H*-phosphirenes **4a-d**, but have zwitterionic ring systems, owing, most probably, to a strong  $\pi$ -donor electron interaction of the ethoxy group.<sup>[3]</sup> NMR spectroscopic data of **4a-d**, **5a,b** and **6a,b** and single crystal X-ray structures of **4a**, **4d** and **6a** will be presented.

### References

- [1] R. Streubel, A. Ostrowski, S. Priemer, u. Rohde, F. Ruthe, P. G. Jones, *Eur. J. Inorg. Chem.* **1998**, 257. [2] R. Streubel, H. Wilkens, F. Ruthe, P.G. Jones, *J. Chem. Soc. Chem. Commun.*, submitted. [3] R. Streubel, H. Wilkens, unpublished.

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