

This article was downloaded by:

On: 28 January 2011

Access details: Access Details: Free Access

Publisher Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## 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>

## Phosphoranylideneophines ( $R_3P=Pr$ ) as Phospha-Wittig Reagents

Shashin Shah<sup>a</sup>; John D. Protasiewicz<sup>a</sup>

<sup>a</sup> Department of Chemistry, Case Western Reserve University, Cleveland, Ohio

**To cite this Article** Shah, Shashin and Protasiewicz, John D.(1999) 'Phosphoranylideneophines ( $R_3P=Pr$ ) as Phospha-Wittig Reagents', Phosphorus, Sulfur, and Silicon and the Related Elements, 147: 1, 343

**To link to this Article:** DOI: 10.1080/10426509908053651

**URL:** <http://dx.doi.org/10.1080/10426509908053651>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

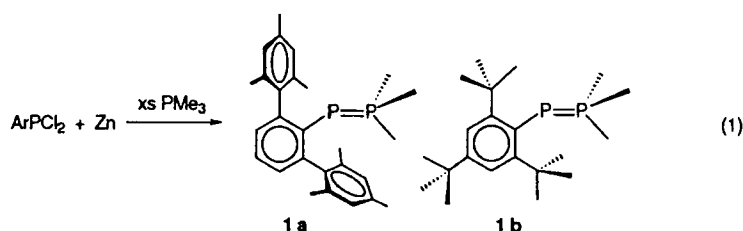
The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

## Phosphoranylidenephosphines ( $R_3P=Pr$ ) as Phospha-Wittig Reagents

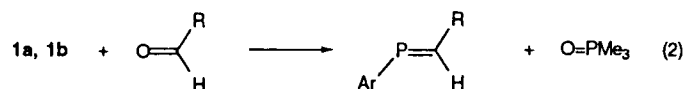
SHASHIN SHAH and JOHN D. PROTASIEWICZ

Department of Chemistry, Case Western Reserve University, Cleveland, Ohio  
 44106-7078

We have recently discovered direct and high yielding routes to phosphoranylidenephosphines  $ArP=PMe_3$  (**1a**,  $Ar = Dmp$ ; **1b**,  $Ar = Mes^*$ , eq. 1).<sup>1</sup>



We have characterized **1a** by X-ray diffraction methods and found a short P=P bond length of 2.084(2) Å, consistent with multiple bonding between the phosphorus atoms. Compounds **1a,b** react with aldehydes to produce phosphaaalkenes (eq. 2).



This extremely facile phosphaaalkene syntheses offers a new rapid means for synthesis of phosphaaalkenes. In addition, a "one pot" procedure for generating **1a** and **1b** *in situ* in the presence of benzaldehyde to give good yields of the corresponding phosphaaalkene has been developed.

### References

- [1] Shah, S.; Protasiewicz, J. D. *J. Chem. Soc. Chem. Commun.* **1998**, in press.