

This article was downloaded by:

On: 30 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>

### Reactivity of Triazaphospholes and Phosphenium Kations with Diazadienes and $\alpha$ Diketones

O. S. Diallo<sup>a</sup>; L. Lopez<sup>a</sup>; J. Barrans<sup>a</sup>

<sup>a</sup> U.A. 454, Laboratoire Synthèse, Université Paul Sabatier, Structure et Réactivité de Molécules Phosphorées, Toulouse Cédex, France

**To cite this Article** Diallo, O. S. , Lopez, L. and Barrans, J.(1987) 'Reactivity of Triazaphospholes and Phosphenium Kations with Diazadienes and  $\alpha$  Diketones', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 30: 3, 765

**To link to this Article:** DOI: 10.1080/03086648708079257

**URL:** <http://dx.doi.org/10.1080/03086648708079257>

PLEASE SCROLL DOWN FOR ARTICLE

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

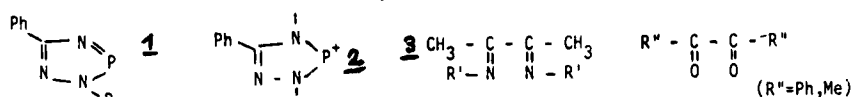
This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

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.

# Reactivity of Triazaphospholes and Phosphenium Kations with Diazadienes and $\alpha$ Diketones

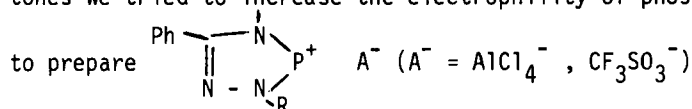
O.S. DIALLO\*, L. LOPEZ, J. BARRANS  
 Université Paul Sabatier

U.A. 454, Laboratoire Synthèse, Structure et Réactivité de Molécules Phosphorées  
 118 Route de Narbonne 31062 Toulouse Cédex, France.



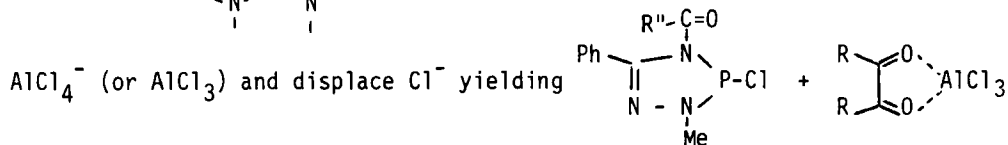
We previously reported that 1 (R = Ph, Me) reacts faster with 3 (R' = Ph, nPr) than the  $\alpha$  diketones, leading mainly to spirocompounds  $\begin{pmatrix} \text{N}=\text{P} < \text{N} \\ \text{N} < \text{N} \end{pmatrix}$ . The first step of the reaction of diazadiene with 1 involves an attack of the nitrogen atom lone pair on phosphorus.

In order to emphasize this difference of nucleophilicity between 3 and diketones we tried to increase the electrophilicity of phosphorus. That prompted us



The reactions involved lead us to classify the reactants in terms of the HSAB theory. Diazadienes 3 are softer bases than the  $\alpha$  diketones studied.  $\text{AlCl}_3$  is an acid harder than the phosphenium.

In fact diazadiene reacts exothermically with the phosphenium 2 leading to a cation  $\begin{pmatrix} \text{N}^+ & \text{N} \\ | & | \\ \text{N} & \text{P} \\ | & | \\ \text{N} & \text{N} \end{pmatrix}$  while in presence of 2  $\alpha$  diketones react with



Futhermore 2 is more electrophilic than neutral dicoordinated 1 towards the diazadiene.

Other kinds of conjugated dienes have been studied.

