

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>

Preparation of Novel Polyoxo Ylides and Diylides and Their Behaviour Towards Pyrolysis and Oxidation

R. Alan Aitken^a; Nazira Karodia^a

^a School of Chemistry, University of St. Andrews, Fife, U. K.

To cite this Article Aitken, R. Alan and Karodia, Nazira(1996) 'Preparation of Novel Polyoxo Ylides and Diylides and Their Behaviour Towards Pyrolysis and Oxidation', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 111: 1, 180

To link to this Article: DOI: 10.1080/10426509608054809

URL: <http://dx.doi.org/10.1080/10426509608054809>

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.

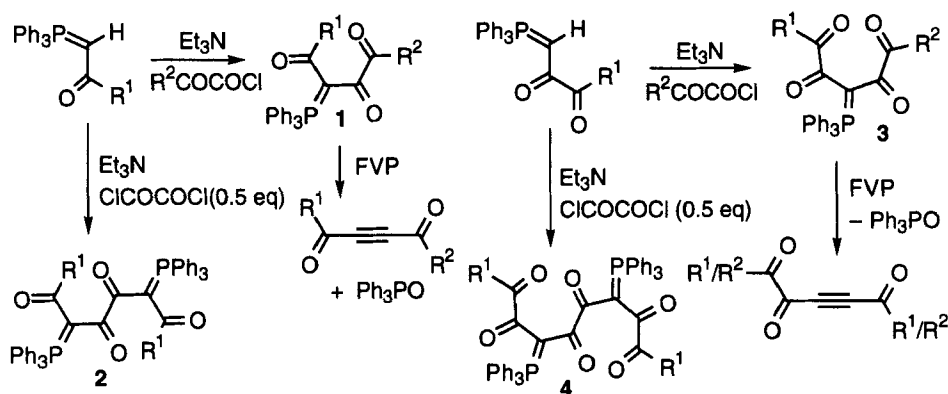
The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any 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.

PREPARATION OF NOVEL POLYOXO YLIDES AND DIYLIDES AND THEIR BEHAVIOUR TOWARDS PYROLYSIS AND OXIDATION

R. ALAN AITKEN* and NAZIRA KARODIA

School of Chemistry, University of St. Andrews, North Haugh, St. Andrews, Fife, KY16 9ST, U. K.

We recently reported the preparation of the new trioxoylides **1** and their pyrolysis to give symmetrical diacylalkynes.¹ Reaction of acyl ylides with oxalyl chloride gives the tetraoxo diylides **2** as shown. The corresponding reactions starting from the α -oxoacyl ylides have been used to obtain examples of tetraoxo ylides **3** and hexaoxo diylides **4**.



All the compounds are stable crystalline solids whose structure is fully supported by the interesting ^{13}C NMR spectra. Flash vacuum pyrolysis (FVP) of **3** gives a mixture of isomeric alkynes as shown but the FVP of both **2** and **4** is rather complex. Oxidative cleavage of the ylide functions in all these compound types is of great interest as a route to vicinal polycarbonyl compounds and has already been achieved for **1** to give tetraones. Other aspects of the structure and reactivity of these compounds have been examined.

REFERENCE

1. R. A. Aitken, H. Héron, A. Janosi, N. Karodia, S.V. Raut, S. Seth, I.J. Shannon and F.C. Smith, *J. Chem. Soc., Perkin Trans. 1*, 2467 (1994).