

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>

Phosphonitriles: Powerful Intermediates in Heterocyclic Chemistry

Edgar Ocando-mavarez^a; Jürgen Böske^b; Edgar Niecke^b; Jean-Pierre Majoral^c; Guy Bertrand^d

^a Laboratoire de Synthèse, Réactivité et Structure de Molécules Phosphorées, ^b Fakultät für Chemie, Universität Bielefeld, Bielefeld, FRG ^c Université Paul Sabatier, Toulouse cedex, France ^d Laboratoire des Organométalliques,

To cite this Article Ocando-mavarez, Edgar , Böske, Jürgen , Niecke, Edgar , Majoral, Jean-Pierre and Bertrand, Guy(1987) 'Phosphonitriles: Powerful Intermediates in Heterocyclic Chemistry', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 30: 3, 797

To link to this Article: DOI: 10.1080/03086648708079289

URL: <http://dx.doi.org/10.1080/03086648708079289>

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.

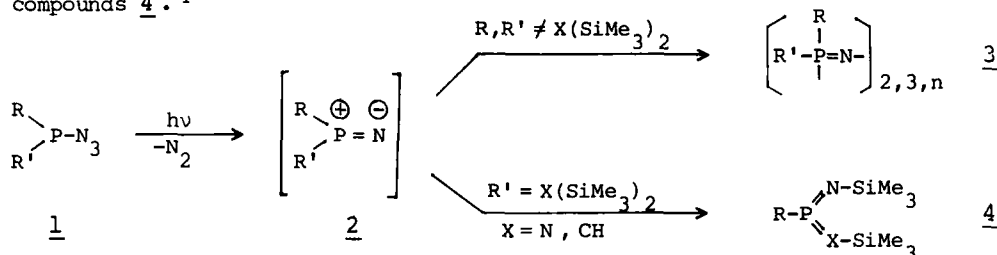
Phosponitriles: Powerful Intermediates in Heterocyclic Chemistry

Edgar Ocando-Mavarez[‡], Jürgen Böske⁺, Edgar Niecke^{+*}, Jean-Pierre Majoral[‡]
and Guy Bertrand^{‡*}

Contribution from Fakultät für Chemie, Universität Bielefeld, Postfach 8640,
D-4800 Bielefeld 1, FRG⁺; Laboratoire de Synthèse, Réactivité et Structure
de Molécules Phosphorées, U.A. 454[‡] and Laboratoire des Organométalliques,
U.A. 477[‡] Université Paul Sabatier, 31062 Toulouse cedex, France

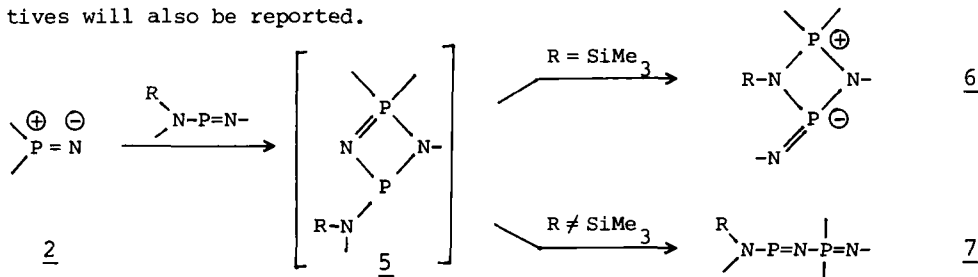
Various phosponitriles 2 have been generated by photolysis of the corresponding phosphine azides 1.

Depending on the nature of the phosphorus substituents, the phosponitriles dimerize, trimerize or polymerize giving cyclodi-, -tri- or polyphosphazenes 3 or even undergo a 1,3 migration giving tricoordinated pentavalent phosphorus compounds 4.¹



Trapping of phosponitrile 2 [$(i\text{Pr}_2\text{N})_2\text{P}=\text{N}$] with unsaturated two-coordinated phosphorus-nitrogen species lead to transient diazadiphosphetines 5 which - depending on the nature of R - give rise either to zwitterionic four membered rings 6 (by 1,3 silyl migration) or alternatively to linear derivatives 7 (by ring opening).

Analogous reactions involving various tri-coordinated phosphorus (V) derivatives will also be reported.



¹ Inorg.Chem., in press