

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>

### Competition of Different Addition and Cycloaddition Processes During Reaction of Phosphorus(II) and (III) Halides with Alkynes

Nikolai V. Lukashev<sup>a</sup>; Alexei D. Averin<sup>a</sup>; Protaiis Muhayimana<sup>a</sup>; Marina A. Kazankova<sup>a</sup>; Irina P. Beletskaya<sup>a</sup>

<sup>a</sup> Department of Chemistry, Moscow State Lomonosov University, Moscow, Russia

**To cite this Article** Lukashev, Nikolai V. , Averin, Alexei D. , Muhayimana, Protaiis , Kazankova, Marina A. and Beletskaya, Irina P.(1999) 'Competition of Different Addition and Cycloaddition Processes During Reaction of Phosphorus(II) and (III) Halides with Alkynes', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 147: 1, 227

**To link to this Article:** DOI: 10.1080/10426509908053594

URL: <http://dx.doi.org/10.1080/10426509908053594>

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.

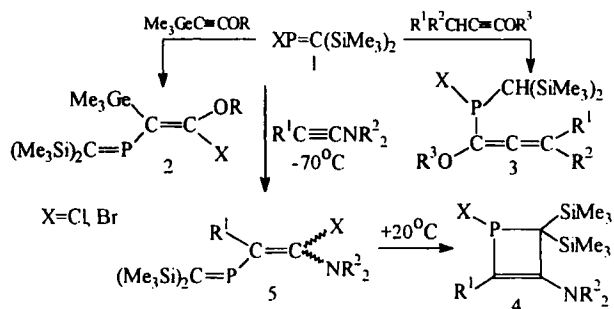
The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any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

## Competition of Different Addition and Cycloaddition Processes During Reaction of Phosphorus(II) and (III) Halides with Alkynes

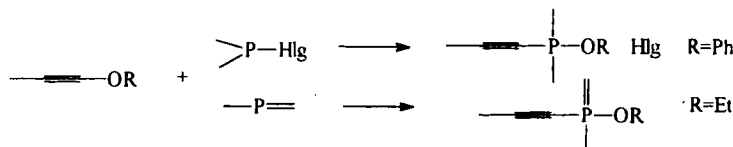
NIKOLAI V. LUKASHEV, ALEXEI D. AVERIN,  
 PROTAIS MUHAYIMANA, MARINA A. KAZANKOVA and  
 IRINA P. BELETSKAYA

*Moscow State Lomonosov University, Department of Chemistry, Moscow 119899, Russia*

Addition of P-halogenophosphaalkenes to 1-alkoxyalkynes provides either 2-phosphabutadienes **2** or P(III)-substituted allenes **3**. The reaction of P-halogenophosphaalkenes **1** with 1-aminoalkynes leads to the phosphetines **4** via **5** - the product of 1,2-addition reaction.



The possibility of the insertion reaction of phosphorus (III) and phosphorus (II) compounds into C(sp)-O bond of 1-alkoxyalkynes has been found.



### Acknowledgments.

We are grateful to the Russian Foundation for Basic Research for support (grant N 96-03-32566).