This article was downloaded by:

On: 29 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

Diazoalkanes in the Reactions with Dialkyl (Thio)-Phosphites

B. A. Arbuzov^a; N. A. Polezhaeva^a; A. M. Polozov^a; A. A. Mustafin^a; E. I. Goldfarb^a; A. A. Levin^a; A. M. Butlerov^a

^a Chemical Research Institute of Kazan State University, Kazan, USSR

To cite this Article Arbuzov, B. A., Polezhaeva, N. A., Polozov, A. M., Mustafin, A. A., Goldfarb, E. I., Levin, A. A. and Butlerov, A. M.(1990) 'Diazoalkanes in the Reactions with Dialkyl (Thio)-Phosphites', Phosphorus, Sulfur, and Silicon and the Related Elements, 51: 1, 219

To link to this Article: DOI: 10.1080/10426509008040753 URL: http://dx.doi.org/10.1080/10426509008040753

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.

DIAZOALKANES IN THE REACTIONS WITH DIALKYL (THIO) - PHOSPHITES

B.A.ARBUZOV, N.A.POLEZHAEVA, A.M.POLOZOV, A.A.MUSTA-FIN, E.I.GOLDFARB, and A.A.LEVIN A.M.Butlerov Chemical Research Institute of Kazan State University, Lenin Str. 18, Kazan 420008, USSR

The photochemical, thermo-catalytical and thermal reactions of diazoalkanes with dialkyl (thio)phosphites were studied.

Thus, the photolysis of dimethyldiazomalonate and methyldiazoacetate with dialkyl(thio)phosphites gives P-H insertion products only upon triplet-sensitized conditions (i), whereas diphenyldiazomethane gives P-H insertion products upon direct photolysis as well (ii). The investigation of the reaction mechanism is based on CIDNP³¹P method. The catalytical reactions (iii) are a convenient method of preparing (thio)phosphonates.

i) hv/Ph_2CO : $R^1=C(O)OMe$; $R^2=C(O)OMe$; H. $R^1=R^2=Ph$. ii) hv: $R^1R^2=Ph$.

iii)
$$80^{\circ}$$
C, $Cu(acac)_2$: $R^1 = C(0)$ OMe, $C(0)$ Ph, Ph; $R^2 = C(0)$ OMe, Ph, H; $R^1 + R^2 = F1$

A direct (without catalytic agent and photolysis) interaction of diphenyldiazomethane with dimethylthiophosphite is more complex and gives a mixture of the products.