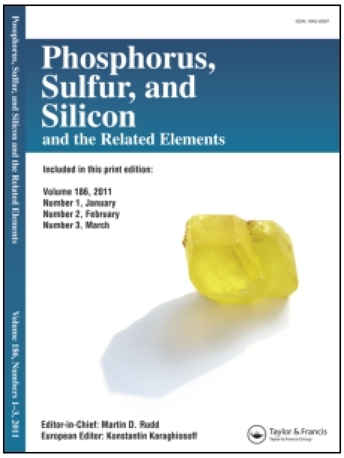
This article was downloaded by:
On: *30 January 2011*
Access details: *Access Details: Free Access*
Publisher *Taylor & Francis*
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



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

The Reaction of Phosphonyl Radicals with Hindered Carbonyl Compounds

N. A. Malysheva[a]; B. L. Tumansky[a]; A. I. Prokof'ev[a]; N. N. Bubnov[a]; S. P. Solodovnikov[a]; M. I. Kabachnik[a]
[a] A. N. Nesmeyanov Institute of Organo-Element Compounds, U.S.S.R, Academy of Sciences, Moscow, U.S.S.R

To cite this Article Malysheva, N. A. , Tumansky, B. L. , Prokof'ev, A. I. , Bubnov, N. N. , Solodovnikov, S. P. and Kabachnik, M. I.(1987) 'The Reaction of Phosphonyl Radicals with Hindered Carbonyl Compounds', Phosphorus, Sulfur, and Silicon and the Related Elements, 30: 3, 705

To link to this Article: DOI: 10.1080/03086648708079199
URL: http://dx.doi.org/10.1080/03086648708079199

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.

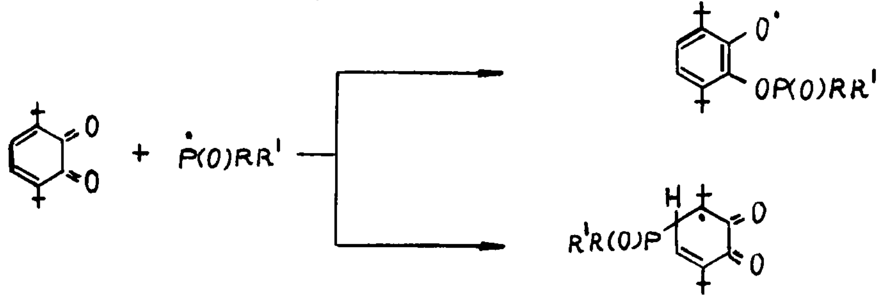
The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any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

The Reaction of Phosphonyl Radicals with Hindered Carbonyl Compounds

Malysheva N.A.*, Tumansky B.L., Prokof'ev A.I., Bubnov N.N.,
Solodovnikov S.P., and Kabachnik M.I.
A.N.Nesmeyanov Institute of Organo-Element Compounds, U.S.S.R.
Academy of Sciences, Vavilov Str. 28, Moscow, U.S.S.R.

Downloaded At: 07:26 30 January 2011

The reaction between phosphonyl radicals and substituted o- and p-benzoquinone has been studied by ESR. The addition of phosphonyl radicals to benzoquinone occurs at two sites, either at carbonyl oxygen or at double bond of the cycle. The reaction of phosphonyl radicals with p-benzoquinone and methylenquinones proceeds in a similar fashion.



The ESR analysis of the 3,6-ditert.buthyl-2-oxyphenoxy radicals, containing the phosphoryl group, indicates the covalent character of O-P bond. In the case of 3,5-ditert.buthyl-o-benzoquinone two cyclohexadienyl radicals are formed due to the attack of the phosphonyl radical at the different positions of the quinone cycle. While phosphonyl radicals are added only to the double bond of 4,4-dialkyl-2,6-di-tert.buthylcyclohexa-2,5-dion-1-one cycle, the reaction with tert.buthyl diphenoquinone occurs both at the double bond of the cycle (at the 1 (1')- and 2 (2')-positions) and at the oxygen atom.