

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>

The Reactions of Phosphoryl - Stabilized Carbanions with α,β -Unsaturated Cycloalkenones Derivatives

Malose J. Mphahlele^a; Tomasz A. Modro^a

^a Department of Chemistry, Centre for Heteroatom Chemistry, University of Pretoria, Pretoria, South Africa

To cite this Article Mphahlele, Malose J. and Modro, Tomasz A.(1996) 'The Reactions of Phosphoryl - Stabilized Carbanions with α,β -Unsaturated Cycloalkenones Derivatives', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 111: 1, 147

To link to this Article: DOI: 10.1080/10426509608054776

URL: <http://dx.doi.org/10.1080/10426509608054776>

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 REACTIONS OF PHOSPHORYL - STABILIZED CARBANIONS WITH α,β -UNSATURATED CYCLOALKENONES DERIVATIVES

MALOSE J. MPHAHLELE and TOMASZ A. MODRO
 Centre for Heteroatom Chemistry, Department of Chemistry,
 University of Pretoria, Pretoria 0002, South Africa

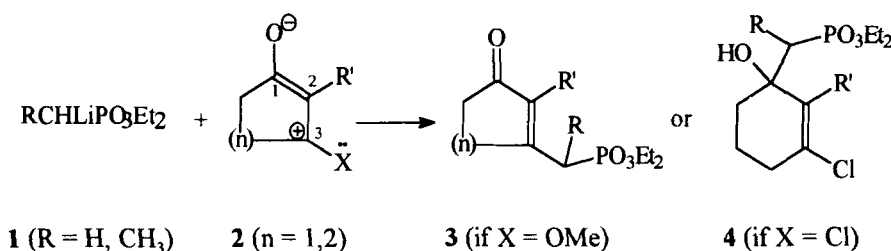
Abstract The effects of the β -leaving group of the cycloalkenone on the regioselectivity of nucleophilic addition by RCHLiP(O)(OEt)_2 are discussed.

INTRODUCTION

The reactions of diethyl (lithiomethyl)phosphonate with cycloalkenones afford carbonyl - addition products.¹ In this work, using cycloalkenones bearing Cl or MeO substituent in the β -position, we found that the course of the reaction depends on the β -substituent.

RESULTS AND DISCUSSION

The diethyl lithioalkylphosphonates **1** were found to add regioselectively across the C-C double bond of the β -methoxycycloalkenones **2** ($\text{X} = \text{OMe}$) with the elimination of CH_3O^- to form the vinylketophosphonates **3**. On the other hand, the same nucleophiles undergo carbonyl addition to the β -chlorocyclohexenones **2** ($\text{X} = \text{Cl}$) to afford the β -hydroxyalkylphosphonates **4**. The observed regioselectivity can be explained in terms of the stabilizing effect of MeO vs. Cl on the electrophilicity of C-3 relative to C-1.



REFERENCES

1. E. OHLER and E. ZBIRAL, *Synthesis*, 357 (1991).