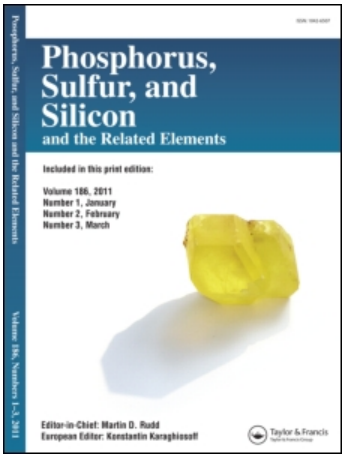


Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

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

Phosphorus, Sulfur, and Silicon, 1996, Vol. 111, p. 147
Reprints available directly from the publisher
Photocopying permitted by license only

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

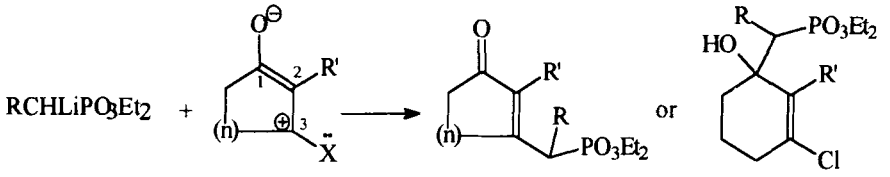
Abstract The effects of the β-leaving group of the cycloalkenone on the regioselectivity of nucleophilic addition by $RCHLiP(O)(OEt)_2$ are discussed.

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** (X = 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** (X = 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.



1 (R = H, CH_3) **2** (n = 1,2) **3** (if X = OMe) **4** (if X = Cl)

REFERENCES

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