

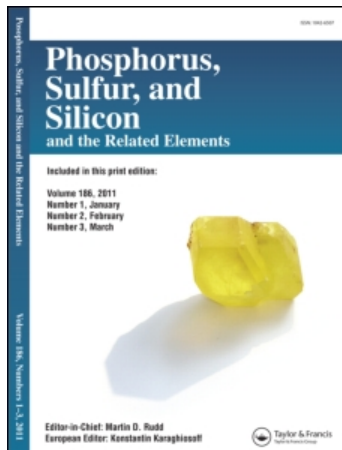
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## Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713618290>

## Synthesis and Chemistry of Phosphonic Derivatives

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**To cite this Article** Pienaar, A. and Modro, T. A.(1996) 'Synthesis and Chemistry of Phosphonic Derivatives', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 111: 1, 148

**To link to this Article:** DOI: 10.1080/10426509608054777

**URL:** <http://dx.doi.org/10.1080/10426509608054777>

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## SYNTHESIS AND CHEMISTRY OF PHOSPHONIC DERIVATIVES

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**Abstract** The reaction of thionyl chloride with mixed diesters of the type  $RP(O)(OCH_2CH_2NR'_2)OR''$  are discussed.

### INTRODUCTION

Compounds of the type  $R-P(O)(OCH_2CH_2NR'_2)Y$  were required for kinetic studies to elucidate the mechanism of decomposition of these compounds <sup>1</sup>.

### RESULTS AND DISCUSSION

It was found that phosphonic monochlorides, prepared according to a literature procedure <sup>2</sup> provided a reliable method for the synthesis of mixed diesters <sup>3</sup>. The nature of the groups  $R'$  and  $Y$  in these mixed diesters however influenced the course of the reaction with thionyl chloride. The nitrogen atom in the substrate is available to participate in the reaction in the cases where  $R' = Me$ . In these cases dealkylation occurs when  $Y = OMe$  whereas only the free acid is formed when  $OR'' = OEt$  or  $OiPr$ . Steric factors protect this nitrogen atom when  $R' = Et$  and the normal Maier's reaction <sup>2</sup> takes place affording the monochloride.

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