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

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## Synthesis of Phosphorus Containing Macrocycles and Cryptands

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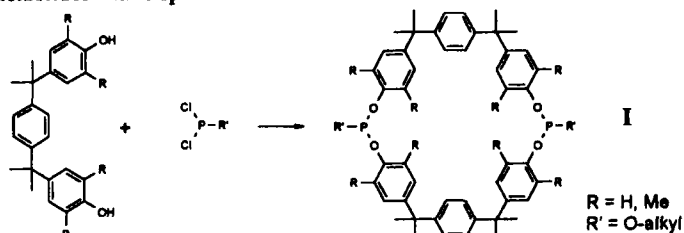
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## Synthesis of Phosphorus Containing Macrocycles and Cryptands

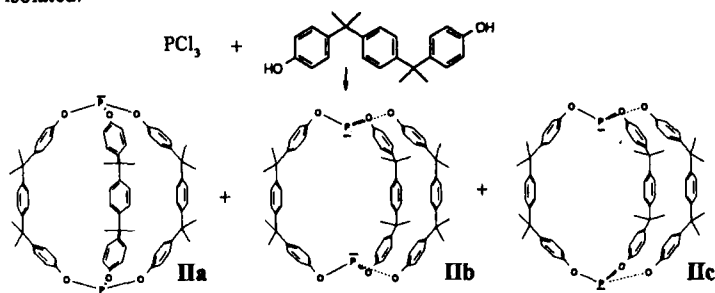
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We condensed various bisphenols with P(III)-building blocks to get phosphorus containing macrocycles. Macrocyclic phosphites of type I were obtained in high yields from the reaction of phosphorous monoester dichlorides with bisphenols.



The reaction of phosphorous monoester diamides with bisphenols, however, resulted mainly in the formation of linear products and small amounts of symmetric macrocycles. Phosphorous cryptands **IIa-c** were obtained by a simple one-step reaction of  $\text{PCl}_3$  with a trinuclear bisphenol. All possible homeomorphous isomers<sup>[1,2]</sup> of the *in,out*-type could be isolated.



*In*- and *out*-phosphorus atoms show extremely different oxidation rates in their reaction with cumene hydroperoxide.

**References**

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