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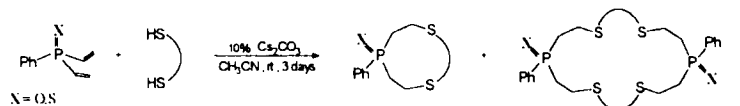
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Novel Synthesis of Macrocyclic Systems Containing Phosphorus and Sulfur

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Macrocyclic systems containing phosphine, phosphoryl or thiophosphoryl functions in the ring demonstrate high ability to complex metal ions. Complexed structures of this type show interesting catalytic properties and can be used in homogenous and heterogenous catalysis [1,2]. Macrocyclic compounds containing phosphorus are also useful as complexing agents for ammonium salts, anions, etc [3,4]. Generally three types of reactions are used to synthesize phosphorus containing macrocyclic compounds: the cyclocondensation, the ring opening reaction and the reaction with metal as a matrix [5]. We have developed a new procedure for the synthesis of the title systems of different sizes and of different P and S contents. It is based on a double conjugate addition of dithiolates to divinyl phosphine oxides and sulfides and makes use of the so-called „cesium effect”



Factors influencing efficiency and selectivity of these macrocyclizations have been studied. Typically [1+1] and [2+2] cyclization products were dominant in the product mixtures. Two representative (P,S₄)-14-membered ring and (P,S₄)-16-membered ring products have been subjected to conformational analysis by means of an X-ray diffraction technique

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