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

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### Synthesis and Tautomerism of 1,3,2-Azathiaphosphacyclanes

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## SYNTHESIS AND TAUTOMERISM OF 1,3,2-AZATHIAPHOSPHACYCLANES

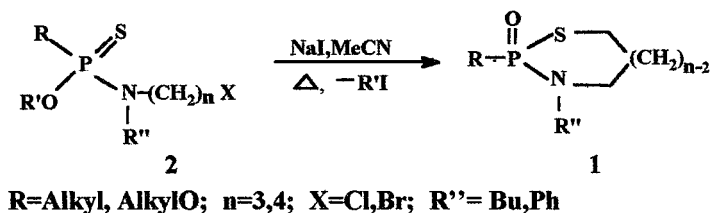
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*1,3,2-Azathiaphosphacyclanes were prepared by intramolecular alkylation of N-(ω-haloalkyl)amidophosphates and phosphonates.*

**Keywords:** 1,3,2-Azathiaphosphacyclanes; ring-chain tautomerism

The facile synthetic route to 6- and 7-membered 1,3,2-azathiaphosphacyclanes **1** was elaborated on the base of intramolecular S-alkylation in N-(ω-haloalkyl)amidophosphates and phosphonates **2** under heating with NaI in MeCN solution. The compounds **1** were prepared with 90–95% yields.

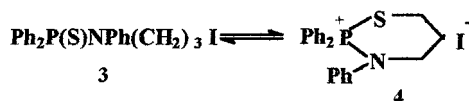


SCHEME 1

In the case of diphenylthiophosphoryl derivate **3** ( $n = 3$ ) the cyclic phosphonium salt **4** was obtained. The tautomeric equilibrium between cyclic salt **4** and acyclic form **3** was found.

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### SCHEME 2

The equilibrium position depends both on the solvent nature and temperature.