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Phosphorus, Sulfur, and Silicon and the Related Elements

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A Facile and General Synthesis of Phosphinylguanidines

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A FACILE AND GENERAL SYNTHESIS OF PHOSPHINYLGUANIDINES

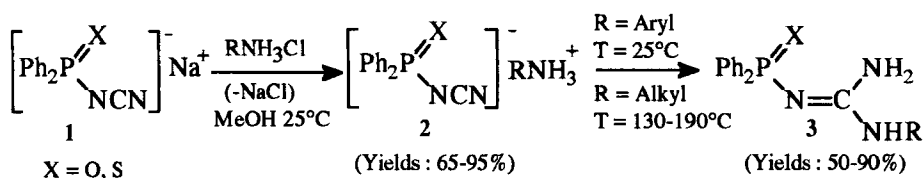
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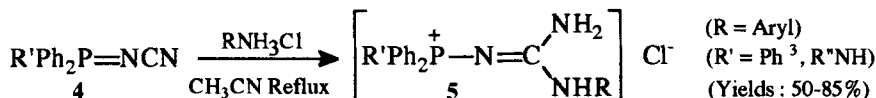
Abstract : In order to synthesize new phosphorus guanidines 3, 5 as potential agrochemicals the reactivity of phosphorus cyanamides 1, 4, was investigated towards aliphatic and aromatic amines.

Sodium diphenylphosphinyl cyanamides 1 reacts with alkyl-, aryl-ammonium-chlorides under mild conditions to alkyl-, aryl-diphenylphosphinyl cyanamides 2, which rearrange, at temperature depending on the amine basicity, to give N-alkyl or (aryl) N'-diphenylphosphinyl guanidines 3¹.



Low temperature ¹H-NMR and X-Ray cristallographic investigations show that only one tautomeric form exist, in which the imino substituent is in α position to the phosphorus atom.

This work was extended to the synthesis of phosphonioguanidines 5 ².



REFERENCES

- 1 L. JÄGER, N. INGUIMBERT, M. TAILLEFER, H. J. CRISTAU, *Synthetic Communication* (1995) in press, and references cited therein.
- 2 A. HEESING, G. IMSIEKE, *Chem. Ber.*, **107**, 1536 (1974).
- 3 F.O. MARSH, M.E. HERMES, *J. Am. Chem. Soc.* **86**, 4506 (1964).