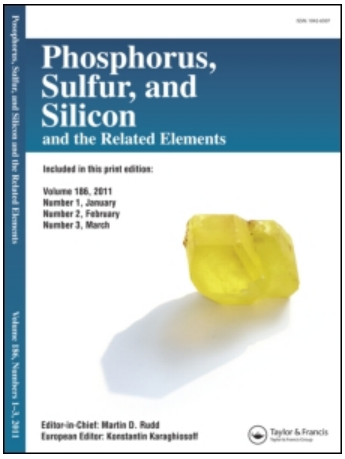


Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

A Facile and General Synthesis of Phosphinylguanidines

Lothar Jäger[a]; Nicolas Inguimbert[b]; Marc Taillefer[b]; Henri-Jean Cristau[b]
[a] Institut für anorganische Chemie, Martin Luther Universität, Halle Saale, Deutichland [b] Laboratoire de Chimie Organique, ENSCM, URA 458, Montpellier, France

To cite this Article Jäger, Lothar , Inguimbert, Nicolas , Taillefer, Marc and Cristau, Henri-Jean(1996) 'A Facile and General Synthesis of Phosphinylguanidines', Phosphorus, Sulfur, and Silicon and the Related Elements, 111: 1, 124
To link to this Article: DOI: 10.1080/10426509608054753
URL: http://dx.doi.org/10.1080/10426509608054753

Phosphorus, Sulfur, and Silicon, 1996, Vol. 111, p. 124
Reprints available directly from the publisher
Photocopying permitted by license only

A FACILE AND GENERAL SYNTHESIS OF PHOSPHINYLGUANIDINES

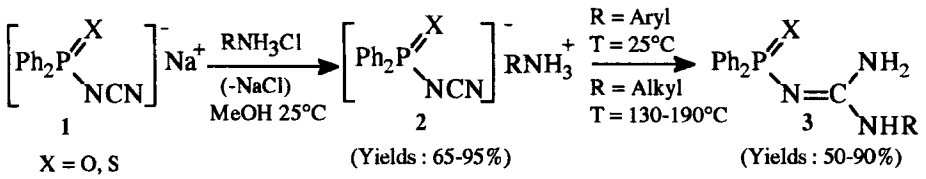
LOTHAR JÄGER [a], NICOLAS INGUIMBERT [b], MARC TAILLEFER [b], HENRI-JEAN CRISTAU [b].

[a] Institut für anorganische Chemie, Martin Luther Universität, D-061220 Halle/Saale, Deutschland.

[b] Laboratoire de Chimie Organique, ENSCM, URA 458, 8 rue de l'Ecole Normale, 34053 Montpellier, France.

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.

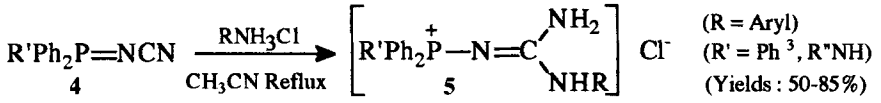
Sodium diphenylphosphinyl cyanamides **1** reacts with alkyl-, aryl-ammonium-chlorides under mild conditions to alkyl-, aryl-diphenylphosphinyl cyanamides **2**, which rearrange, at temperature depending on the amine basicity, to give N-alkyl or (aryl) N'-diphenylphosphinyl guanidines **3**[1].



1 X = O, S — **2** (Yields : 65-95%) — **3** (Yields : 50-90%)

Low temperature ^{1}H-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].



4 — **5** (R = Aryl) (R' = Ph [3], R"NH) (Yields : 50-85%)

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).