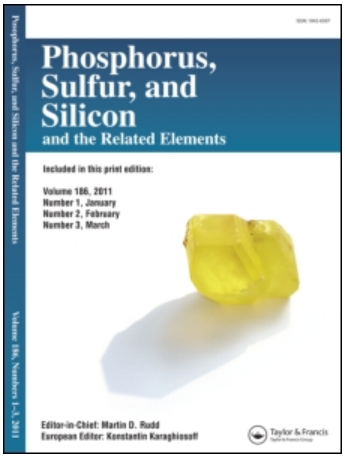


Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

New Carbamoyl Organophosphorus Compounds

Francise Plenut[a]; Henri-Jean Cristau[a]; Murielle Cussagne[a]
[a] Laboratoire de Chimie Organique, URA 458, E.N.S.C.M., Montpellier, Cedex 1, France

To cite this Article Plenut, Francise , Cristau, Henri-Jean and Cussagne, Murielle(1996) 'New Carbamoyl Organophosphorus Compounds', Phosphorus, Sulfur, and Silicon and the Related Elements, 111: 1, 126
To link to this Article: DOI: 10.1080/10426509608054755
URL: http://dx.doi.org/10.1080/10426509608054755

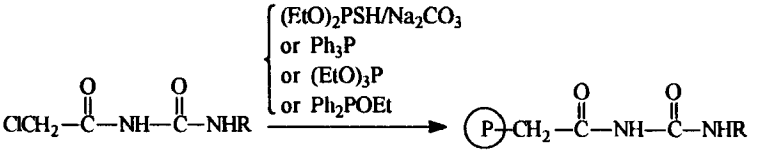
Phosphorus, Sulfur, and Silicon, 1996, Vol. 111, p. 126
Reprints available directly from the publisher
Photocopying permitted by license only

NEW CARBAMOYL ORGANOPHOSPHORUS COMPOUNDS

FRANCOISE PLENAT, HENRI-JEAN CRISTAU, MURIELLE CASSAGNE
Laboratoire de Chimie Organique URA 458, E.N.S.C.M., 8 rue de l'Ecole Normale
34053 Montpellier Cedex 1 France

Abstract The syntheses of various organophosphorus compounds, which contain a function with potentially agropharmaceutical properties (acylureas [1], acylsemicarbazides [2] or imidazolidinetriones [3]) are described.

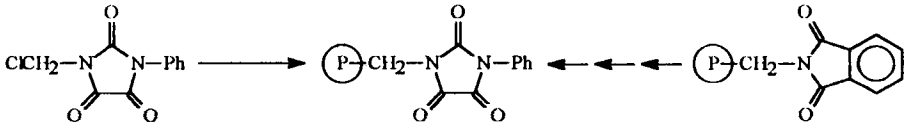
Phosphorus acylureas and acylsemicarbazides were prepared by condensation between various phosphorus starting materials (dithiophosphate, phosphine, phosphite and phosphinite) and two chlorinated precursors (N-chloroacetyl N'-phenylurea and 4-chloroacetyl (2,4-dinitro 1-phenyl)semicarbazide) :



R = C_6H_5 or 2,4-$(NO_2)_2C_6H_3NH$

(P) = $(EtO)_2P(S)S^-$ / $Cl\,Ph_3P^-$ / $(EtO)_2P(O)^-$ / $Ph_2P(O)^-$

Phosphorus 2,4,5-imidazolidinetriones were obtained in two different ways : the syntheses of the dithiophosphate and phosphonium salt derivatives involved the reaction between a common N-chloromethyl heterocycle and corresponding phosphorus partners, while the preparation of phosphonylmethyl and phosphine oxide imidazolidinetriones was realized using a multi-step synthesis strategy starting from different phosphorus phthalimides :



[1] E. KUHLE, E. KLAUKE, *Angew. Chem. Int. Ed.*, **16**, 735 (1977).
[2] K.A. NURIDZHANYAN, N.P. BULANOVA, L.M. NESTEROVA, L.D. STONOV, L.A. BAKUMENKO, U.S.S.R. 189,421 (1966), *Chem. Abstr.* **68**, 21721e (1968).
[3] T. BALOCHER, E. EBERT, (Ciba-Geigy), U.S. 3,937, 626 (1976), *Chem. Abstr.* **84**, 175162r (1976)