

This article was downloaded by:

On: 29 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



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>

Chemistry of Phosphoric Acid Phenylesterdiamide

H. Böhland^a; J. Radicke^a

^a Department of Chemistry and Biology of the Pedagogical, University "Dr. Theodor Neubauer" Erfurt-Mühlhausen, Mühlhausen, GDR

To cite this Article Böhland, H. and Radicke, J.(1990) 'Chemistry of Phosphoric Acid Phenylesterdiamide', Phosphorus, Sulfur, and Silicon and the Related Elements, 51: 1, 340

To link to this Article: DOI: 10.1080/10426509008040869

URL: <http://dx.doi.org/10.1080/10426509008040869>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

CHEMISTRY OF PHOSPHORIC ACID PHENYLESTERDIAMIDE

H. BÖHLAND and J. RADICKE

Department of Chemistry and Biology of the
Pedagogical University "Dr. Theodor Neubauer"
Erfurt-Mühlhausen, Schillerweg 59, Mühlhausen,
5700, GDR

References of methanolytic splitting of the urease inhibitor (1) phosphoric acid phenylesterdiamide (PPDA) at 25°C are given from investigations of time dependent UV absorption behaviour of diluted methanolic PPDA-solutions (2). Exclusion of moisture and addition of solvate free nickel(II)-, cobalt(II)-, manganese(II)- or zinc(II)- acetates or chlorides accelerate solvolytic reactions. Kinetic investigations on this effects indicate catalytic influences in the following sequence $\text{Ni(II)} < \text{Co(II)} < \text{Mn(II)} < \text{Zn(II)}$ and to be independent from the anion used. The half-life value was determined to be 3,5 hours (25°C) for the most active salt (ZnCl_2). Identification of ester bond splitting by metal ions used here was enabled by HPLC and TLC techniques. These findings are confirmed by estimation of equilibrium and stability constants for metal ion : PPDA 1:2 complexes.

Thin layer chromatographic investigations on hydrolytic reactions (pH 8) of the metal salt-PPDA-methanol systems demonstrate formation of hydrogenphosphate, monoamido hydrogenphosphate and metal hydroxides.

- (1) K. D. Wenzel, H. Thieme, H. Oberländer, W. Dedeck, Z. Chem. 23, 369, (1983)
- (2) G. König, J. Radicke, H. Böhländ, H. J. Michel, Z. Chem. 27, 261, (1987)