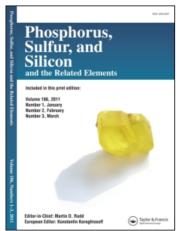
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# Phosphorus, Sulfur, and Silicon and the Related Elements

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# Chemistry of Phosphoric Acid Phenylesterdiamide

H. Böhlanda; J. Radickea

<sup>a</sup> Department of Chemistry and Biology of the Pedagogical, University "Dr. Theodor Neubauer" Erfurt-Mühlhausen, Mühlhausen, GDR

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#### 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 PPDAsolutions (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 Ni(II) < Co(II) < Mn(II) < 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<sub>2</sub>). 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.

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