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Synthesis and Ldasic Properties of O,O,O-Triethyl-N-(2-Pyridyl) Imidophosphates

A. A. Khodak^a; A. G. Matveeva^a; E. I. Matrosov^a; M. I. Kabachnik^a; A. N. Nesmeyanov^a

^a Institute of Organo-Element Compounds, Academy of Sciences of the USSR, Moscow, USSR

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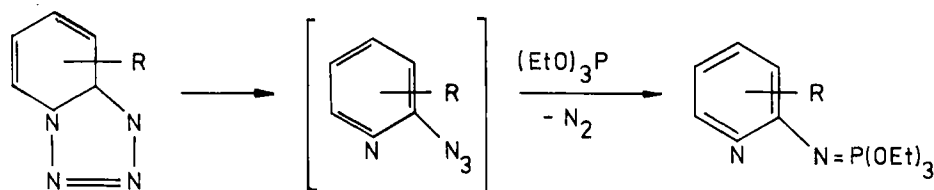
SYNTHESIS AND BASIC PROPERTIES OF O,O,O-TRIETHYL-N-(2-PYRIDYL) IMIDOPHOSPHATES

A.A.KHODAK, A.G.MATVEEVA, E.I.MATROSOV, and
 M.I.KABACHNIK

A.N.Nesmeyanov Institute of Organo-Element Compounds,
 Academy of Sciences of the USSR, Vavilov Str. 28,
 Moscow 117334, USSR

The phosphorus (III) compounds are known to react readily with arylazides resulting in the formation of imidophosphorus compounds (Staudinger reaction)¹.

We have obtained O,O,O-triethyl-N-(2-pyridyl)imido-phosphates by the reaction of triethylphosphites with 2-pyridylazides (existing as tetrazoles) with a good yield.



R = H, 3-Me, 4-Me, 5-Me, 6-Me

All these products are colorless liquids, insoluble in water and soluble in organic solvents. The structures of the compounds were confirmed by elemental analysis, IR and ³¹P NMR spectra.

The basic properties of imidophosphates have been studied by potentiometric titration with perchloric acid in MeNO₂. The synthesized compounds are stronger bases than their aromatic analog PhN=P(OEt)₃ (ΔpK_a = 1,5-2). The structures of the protonated products are discussed.

1. H.Staudinger, J.Meyer. *Helv. Chim.Acta*, 1919, v. 2, p. 635.