

## SYNTHESIS OF PHOSPHORILIZED DERIVATIVES OF PIPERIDYNE WITH TRIPLE BIND AND THEIR EXTRACTING ABILITY

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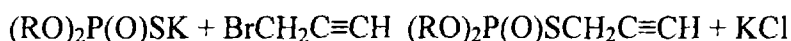
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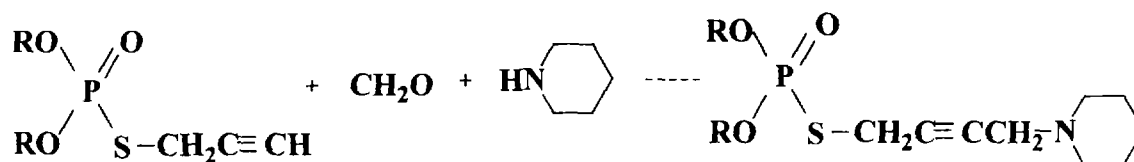
At present it is known that derivatives of phosphor acids aside from their insecticidal, neurotoxic antiferment and their types of physiological activities, possess complex making properties.

O,O-dialkyl-S-propargylthiophosphates were obtained in medium of absolute ethyl alcohol by the method of alkylizing O,O-dialkylthiophosphates of potashium with brom propargil:



where R=C<sub>2</sub>H<sub>5</sub>, C<sub>3</sub>H<sub>7</sub>, C<sub>4</sub>H<sub>9</sub>, C<sub>5</sub>H<sub>11</sub>, C<sub>6</sub>H<sub>13</sub>, i-C<sub>4</sub>H<sub>9</sub>, i-C<sub>5</sub>H<sub>11</sub>

Using Mannichs reaction O,O-dialkyl-S-[N-piperidynobut-2-inil]thiophosphates were synthesized:



Compound structures agree with data from IR-, PMR- and mass-spectrometry.

In PMR spectrum O,O-dipentyle-S-propargylthiophosphate in the region of weak field (3,97 p.m.) protons of two methyl groups resonate (4H, M) located in  $\alpha$ -position in respect to phosphor atom. Doublet of doublets correspond to S-CH<sub>2</sub> signal of methyl protons at 3,43 p.m. Its division is created by spin-spin in interactions with the phosphorus atom (J=13,5 Hz). The latter resonates at 2,13 p.m. in triplet form. In the region 1,2-1,8 p.m. methylene protons (12H) resonate, and nonsymmetrical triplet at 0,87 p.m. corresponds to two methyl groups.

PMR spectrum of O,O-dipropyle-S-[N-piperidynobut-2-inil]thiophosphate contains signals of to propyle radicals: multiplets of four protons OCH<sub>2</sub> and C-CH<sub>2</sub>-C respectively at 3,96 and 1,7 p.m. and triplet of end methyl groups at 0,95 p.m.  $\alpha$ -protons of piperidyne cycle resonate as a triplet (4H, CH<sub>2</sub>) at 2,34 p.m.,  $\beta$  and  $\gamma$ -protons resonate in the region 1,2-1,7 p.m. (10H, m, CH<sub>2</sub>).

S-and N-methylene protons, divided by triple bind, resonate at 3,49 (2H, dt, S-CH<sub>2</sub>, J=13,5 and 2,4 Hz) and 3,15 (2H, t,  $\equiv$ CCH<sub>2</sub>, J=2,4 Hz) p.m. Constant of long spin-spin interaction in 2,4 Hz. Signal S-CH<sub>2</sub> is additionally divided because of interaction with the phosphorus atom (J=13,5 Hz)

The obtained compounds are studied as extragents of noble metals from salt-nitro-sulfuric acid media. The process of extraction was investigated by the method radioactive nuclide metals (<sup>198</sup>Au, <sup>110</sup>Ag, <sup>109</sup>Pd, <sup>197</sup>Pt). The obtained compounds turned out to be weak extragents of metal ions independent of nature and concentration of mineral acids. Elongation of alkyl fragments in molecule lead to some increase in effectiveness of extraction of metals.