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Synthesis of 1,3,2-Oxazaphosphorinane Derivatives under the Phase Transfer Conditions

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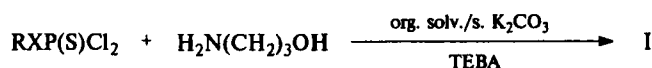
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Synthesis of 1,3,2-Oxazaphosphorinane Derivatives under the Phase Transfer Conditions

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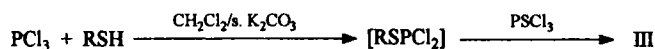
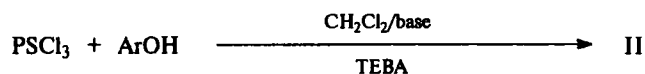
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2-Aryloxy(or alkylthio)-2-thio-1,3,2-oxazaphosphorinanes (I) possess a high nematocidal activity, as well as synergistic activity towards pyrethroid insecticides, being low toxic to mammals (LD₅₀ 1000-3000 mg/kg, mice). In order to do these compounds more accessible a simple method of synthesis under the phase transfer conditions, using solid K₂CO₃ with 3 or 16% of water and TEBA in CH₂Cl₂ or MeCN (yields up to 80%), was elaborated according to the scheme:



R = Ar (X = O), Alk (X = S).

The corresponding O-aryldichlorophosphorothioates (II) and S-alkyldichlorophosphorodithioates (III) were also synthesized with good yields under the phase transfer conditions (systems liquid-liquid and liquid-solid phase):



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