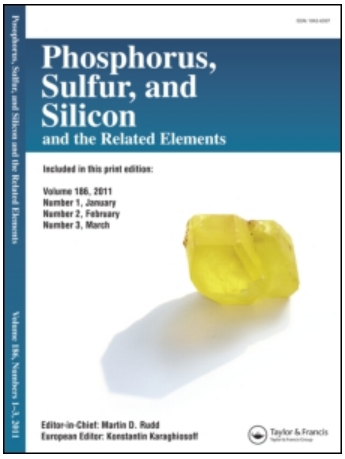


## Phosphorus, Sulfur, and Silicon and the Related Elements

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

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2-Aryloxy(or alkylthio)-2-thio-1,3,2-oxazaphosphorinanes (I) possess a high nematocidic activity, as well as synergistic activity towards pyrethroid insecticides, being low toxic to mammals ($LD_{50}$ 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 $K_2CO_3$ with 3 or 16% of water and TEBA in $CH_2Cl_2$ or MeCN (yields up to 80%), was elaborated according to the scheme:

$$RXP(S)Cl_2 + H_2N(CH_2)_3OH \xrightarrow[TEBA]{\text{org. solv./s. } K_2CO_3} I$$

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

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

$$PSCl_3 + ArOH \xrightarrow[TEBA]{CH_2Cl_2/base} II$$

$$PCl_3 + RSH \xrightarrow{CH_2Cl_2/s.\ K_2CO_3} [RSPCl_2] \xrightarrow{PSCl_3} III$$

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