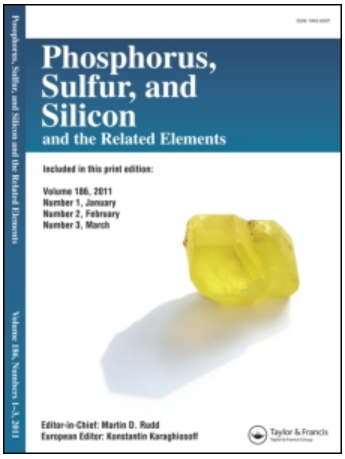

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Reactions of Catechol Trichlorophosphorane with Phosphonates and Phosphates

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Reactions of Catechol Trichlorophosphorane with Phosphonates and Phosphates

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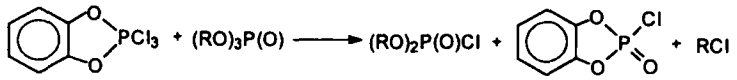
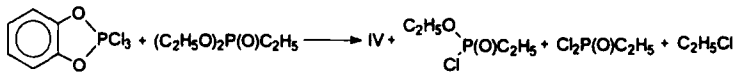
It was shown early that the esters of phosphorus and phosphonous acids interact whith catechol trichlorophosphorane (I) by the route of the complete exchange of the all alkoxy-groups on the chlorine atoms [1]. However, we have found that the trialkylphosphates (II) reacts due to the excess of phosphorane (I) with the selective formation only of dialkylchlorophosphates (III):



I II III IV

We have found that diethoxyethylphosphonate (V) interacts with the excess of phosphorane (I) with the formation of ethoxyethylchiorophosphonate (VI). Also the formation of dichloroethylphosphinoxid (VII) is observed in minority.



I V VI VII

The reaction of chlorophosphonate (VI) with phosphorane (I) leads slowly to the formation of dichlorophosphinoxid(VII). In these conditions chlorophosphate (III) remains inert.

References

[1] Gloede J. – Z. Chem. 1982. Bd.22. N.4. S.126–134.