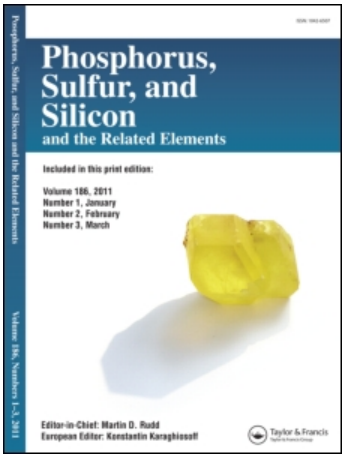

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Novel Mild Synthesis of N-Carboxylotriphenylphosphin-Imines & Id N-Amidotriphenylphosphinimines VIA Ligand Exchange Processes in Dichlorotriphenylphosphine

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NOVEL MILD SYNTHESIS OF N-CARBOXYLOTRIPHENYLPHOSPHINIMINES AND N-AMIDOTRIPHENYLPHOSPHINIMINES VIA LIGAND EXCHANGE PROCESSES IN DICHLOROTRIPHENYLPHOSPHINE

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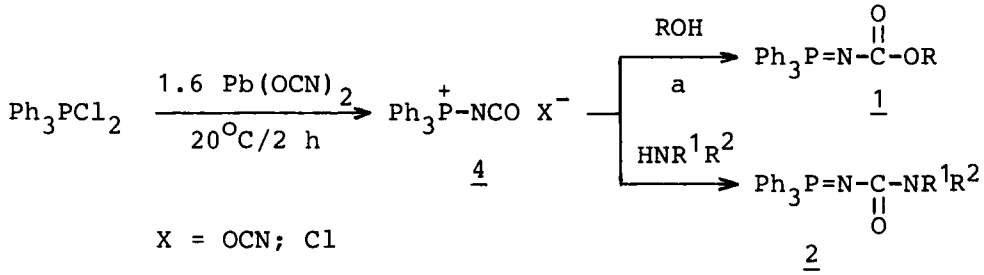
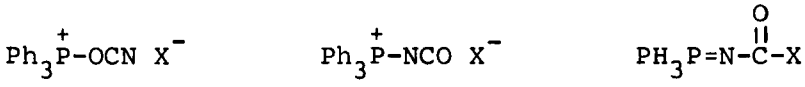
In connection with our recent investigations on the ligand exchange processes in five-coordinated phosphoranes and phosphonium salts a new, one-pot synthesis of various N-carboxylotriphenylphosphinimines 1 and N-amidotriphenylphosphinimines 2 has been devised. The key intermediate, phosphonium salt 4, was obtained in quantitative yield by the reaction of Ph_3PCl_2 with cyanate salts $Pb(OCN)_2$ and NaOCN. When alcohols or amines were present, salt 4 was converted into 1 and 2:



All these reactions are completed in five hours at -30°C, giving the final products 1 and 2 in high yield. The low temperature ^{31}P NMR spectroscopy reveals the formation of three types of intermediates:



X = -OCN; -NCO; -Cl

On the basis of the intermediates observed some mechanistic conclusions will be presented.