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NEW ASPECTS OF SYNTHESIS OF THE COMPOUNDS WITH P-C BONDS

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Industrial realization of practically useful compounds with P-C bonds is restrained by lack of simple methods of their production. The use of tri(2-chloroethyl)phosphite and its transformation products for binding aluminium chloride in reactions of phosphorus trichloride with arenes has allowed to improve aryldichloro- and diarylchlorophosphines synthesis methods, as the indicated bases form with AlCl_3 liquid complexes which do not mix with the expected product. Complexones have also been successfully used in the synthesis of organylphosphonyl- and -thionophosphonyldichlorides. New agents of converting adducts of unsaturated compounds and phosphorus pentachloride into organyldichlorophosphonates (aldehydes, ketones, acetyles, ethers and salts of carboxylic acids, α -oxides, N-oxides, hexamethyldisiloxane) have been found. Isoalkylallylethers are shown to react with PCl_5 in two directions producing $\text{i-PrOCH}=\text{C}(\text{CH}_2\text{Cl})\text{P}(\text{O})\text{Cl}_2$ and $\text{CH}_2=\text{CH}-\text{CH}_2\text{OC}(\text{CH}_3)=\text{CHP}(\text{O})\text{Cl}_2$. Alkylmetallylethers react under mild conditions with PCl_5 at the double bond, at 30°C dealkoxylation takes place resulting in dichloroanhydride $\text{ClCH}_2\text{C}(\text{CH}_3)=\text{CHP}(\text{O})\text{Cl}_2$. Allyl- and propargylacetals undergo phosphorylation exceptionally at the vinyl group generated during a reaction. Original phosphorus-containing ethers, acetals, cyclical aldehydes, aromatic nitro-, amino-, hydroxycompounds, and phosphorus-containing azodyes have become accessible as a result of the studied transformations.