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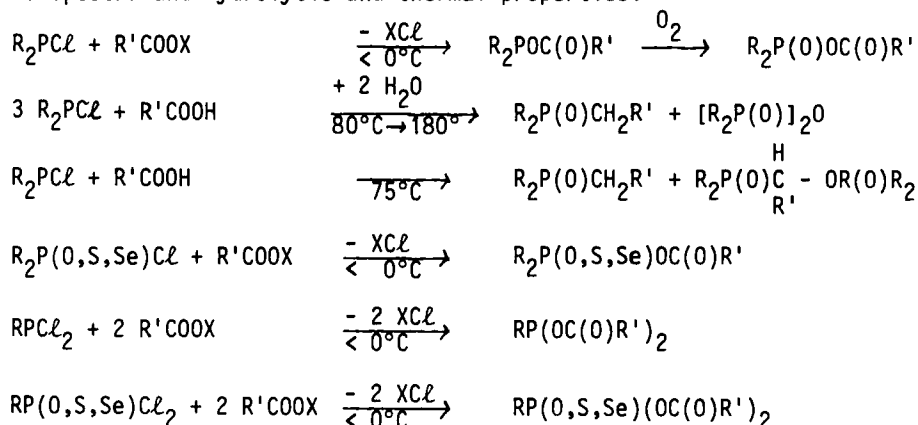
Carboxylphosphanes and Carboxyphosphane Chalcogenides

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Low temperature reactions of organo chloro phosphanes with carboxylic acids and their salts allow the preparation of carboxyphosphanes - mixed anhydrides of carboxylic acids with phosphinic acids. These are subject to thermal rearrangement reaction of the Michaelis-Arbusov-type. Molecular oxygen converts them into carboxy-phosphorane oxides. These compounds are also obtainable by reacting organochlorophosphane oxides with carboxylates. Their thermal stability is higher than that of the P(III)compounds. Analogous reactions of P-sulfides and selenides give the corresponding thio and seleno phosphoranes with higher thermal stability. At elevated temperatures a number of rearrangement reactions occur, thus producing phosphane oxides and phosphinic acid phosphinyl alkaryl ester. The reaction products of the following reaction sequences are discusses with regard to their NMR-, IR-, MS-spectra and hydrolytic and thermal properties:



R = alkyl
aryl

R' = alkyl
aryl

X = H
Na
Ag
Tl