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REACTIONS OF DIORGANYLIODOPHOSPHINE WITH CYCLIC ETHERS

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Reactions of phosphorus halides (chloro- and bromoderivatives) with α -alkylen oxides and other cyclic ethers are thoroughly investigated and have practical significance. Phosphorus iodides, on the contrary, were rarely used in the reactions of this type. It is known only that PI_3 and P_2I_4 are convenient olefinic agents. We investigated the reactions of diorganyliodophosphines with cyclic ethers of the general formula $\text{O}(\text{CH}_2)_n$, and showed that at $n=2$ and the reagents ratio of 1:1 iodoanhydrides of diorganylphosphinic acids are formed, which in excess of α -alkylen oxides are transformed into β -iodoethyl esters of diorganylphosphinic acids. Diorganyliodophosphines react with trimethylen oxide with cycle opening and result in the formation of diorganyl- γ -iodopropylphosphine oxides. Diorganyliodophosphines react with tetrahydrofuran in dimeric form to produce tetraorganylpyrophosphinates, diorganyltetramethylen-phosphonium iodides and 1,4-diiodobutane.

