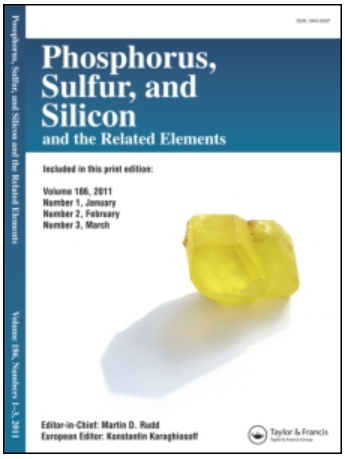

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Reaction of Allenylphosphonic Diamides with Bromine

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REACTION OF ALLENYLPHOSPHONIC DIAMIDES WITH BROMINE

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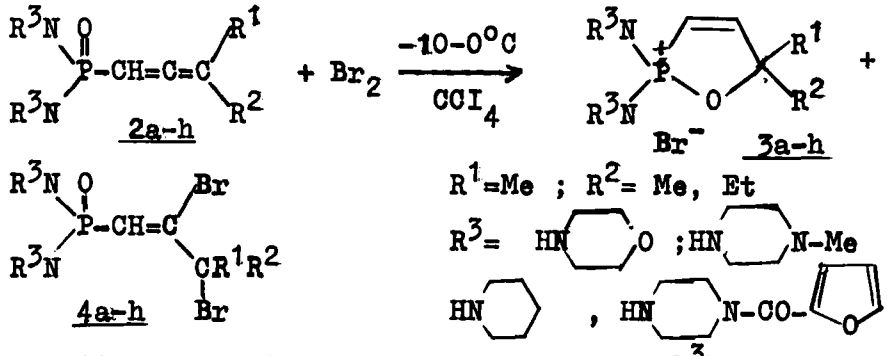
In contrast to allenylphosphonic dichlorides and dialkyl esters, the diamides are little known and practically not studied. The allenylphosphonic diamides 2a-h were prepared from the 3,3-disubstituted allenylphosphonic dichlorides 1a,b , $ClI_2P(O)-CH=C=CR^1R^2$, and heterocyclic amines at law temperature.Here we report the results of the reaction of 2a-h with bromine. Unlike the halogenation of the corresponding dialkyl esters,dichlorides and tertiary phosphine oxides, where only one reaction route has been observed-cycloaddition or 2,3-addition, both reaction routes proceeds in allied degree in the case studied:



The reaction products ratio depends on the R^3N-rest, the degree of heterocyclization being higher in all cases. The formed phosphonium salts 3a-h were isolated as crystalls and appears to be stable substances. The structures of 2a-h, 3a-h and 4a-h were confirmed by IR, MS, ^1H- and ^{13}C NMR. The high chemo- and Z-stereoselectivity of the reaction is discussed.