THE INTERACTION OF *O,O*-DIALKYL-2-HALO-2-NITROETHENEPHOSPHONATES WITH ARYLAMINES

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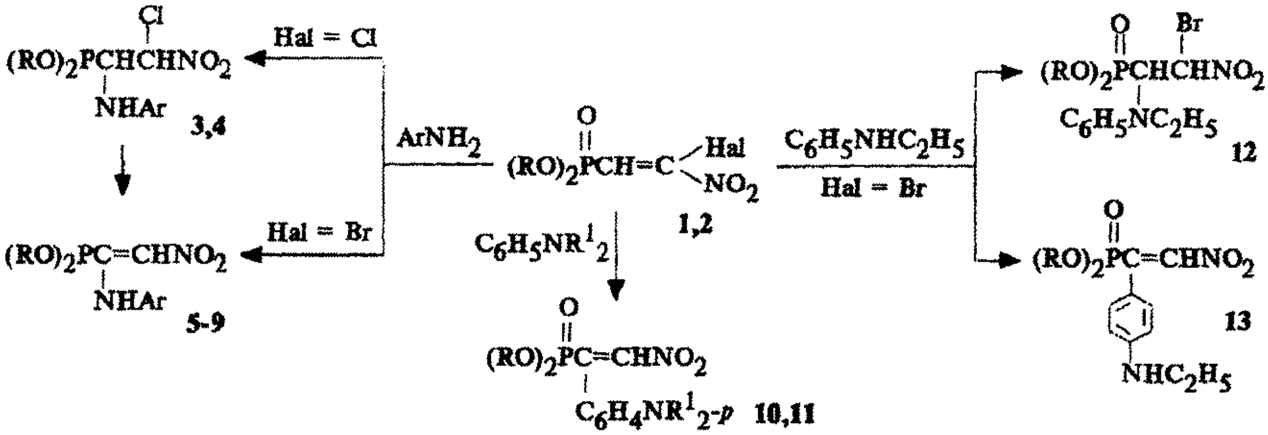
We have investigated the behavior *gem*-halonitroethenephosphonates (**1,2**) in the reactions with arylamines and found out the requliarities of these interactions. In contrast with *gem*-bromonitroethenes *O,O*-di-(2-chloroethyl)-2-chloro-2-nitroethenephosphonate (**1**) formed stable addition products (**3,4**) with good yields in the reactions with low basic primary aromatic amines proceeding in ether or benzene. When *gem*-bromonitroethenephosphonate (**2**) had been introduced into reactions under the same conditions, the process proceeded further and the addition was followed by dehydrobromination and resulted in phosphorylated nitroenamines (**5-9**).



R = C_2H_4Cl (1-13). Hal = Cl (1), Br (2); Ar = C_6H_5 (3,6), *n*-BrC_6H_4 (4,8), C_6D_5 (5), *n*-$CH_3C_6H_4$ (7), *n*-$(CH_3)_2NC_6H_4$ (9); R^1 = CH_3 (10), C_2H_5 (11)

Interaction of *gem*-halonitroethenephosphonates (**1,2**) with tertiary arylamines proceeded through *C*-nucleophilic addition and formed phosphorylated nitrostyrenes (**10,11**). The reaction proceeding did not depend on the halogene nature. The representative of secondary amines, namely *N*-ethylaniline, reacted with *gem*-bromonitroethenephosphonate (**1**) in ether at room temperature to form the mixture of *N*- and *C*-derivatives (**12,13**) correspondingly.

The structure of the products synthesized has been proved by means of mass-spectrometry, IR, UV, and ^1H, ^{31}P, ^{13}C NMR spectroscopy.