SYNTHESIS OF 1-ARYL-4-(ARYLIMINO)-2,6-BIS(TRICHLOROMETHYL)-1,4-DIHYDRO-1,3,5-TRIAZINES

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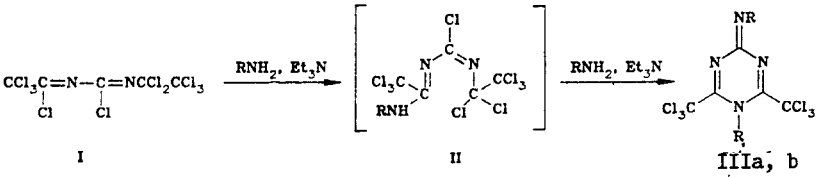
Perchloro-3,5-diazahepta-2,4-diene (I), which we synthesized recently [1] and which has several highly reactive electrophilic centers, is a promising reagent for the preparation of various derivatives with linear and cyclic structures.

We found that the addition reaction of I with primary aromatic amines can serve as a convenient method for the synthesis of substituted 4-(arylimino)-1,4-dihydro-1,3,5-triazines (III). The reaction occurs under mild conditions (0-5°C in benzene) with reagent ratio 1:2 in the presence of a hydrogen chloride acceptor. We can assume that at first the amine attack is directed at the more electrophilic imidoyl chloride group and then the intermediately formed compound II undergoes further amine attack and, simultaneously, intramolecular nucleophilic substitution, which leads to the final product III.



III a R=C_6H_5; b R=2,4,6-$(CH_3)_3C_6H_2$

Triazines III are crystalline light-yellow substances. Their molecular weight, determined cryoscopically, and also the results of elemental analysis correspond to the calculated values. The IR spectra of the substances confirm their structure.

A solution of 0.02 mole of the aromatic amine and 0.04 mole of triethylamine in 30 ml of benzene was added dropwise to a solution of 0.01 mole of diazadiene I in 30 ml of nonaqueous benzene with stirring and cooling with ice water. The mixture was stirred for 1 h at 20°C. The precipitated triethylamine salt was filtered off, and the filtrate was evaporated. The solid residue, compound III, was purified by crystallization from a 1:1 benzene–hexane mixture.

Triazine IIIa. Melting point 166-168°C and 85% yield. Infrared spectrum (CH_2Cl_2): 1670, 1640, 1570, 1510 cm^{-1}.

Triazine IIIb. Melting point 185-187°C and 77% yield. Infrared spectrum (CH_2Cl_2): 1650, 1620, 1580, 1500 cm^{-1}.

LITERATURE CITED

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