O-ACYL DERIVATIVES OF POLYNITROALKANES IN REACTIONS WITH ELECTROPHILIC REAGENTS

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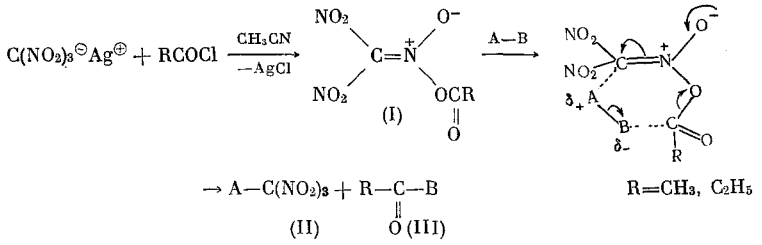
The O-acyl derivatives of the aci-form of trinitromethane (I) [1] when reacted with electrophilic reagents A–B (where A is the "electrophilic" and B is the "nucleophilic" part of the reagent) form the corresponding trinitromethyl derivatives (II)

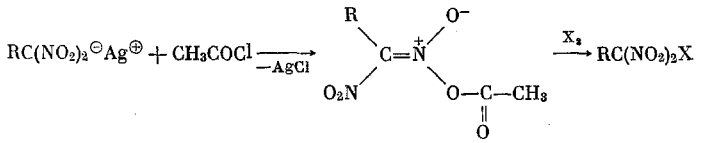


$\rightarrow A{-}C(NO_2)_3 + R{-}\underset{\underset{O}{\|}}{C}{-}B$ (II) (III)

R=CH₃, C₂H₅

The following reactions were run: reagent A–B, value of A in $A{-}C(NO_2)_3$ (II), yield of (II),% (for R = CH_3): 1) HCl (gas), H, 76; 2) Cl_2, Cl, 60; 3) Br_2, Br, 61; 4) I_2, I, 8; 5) ICl, I, 17; 6) 2,4-$(NO_2)_2C_6H_3SCl$, 2,4-$(NO_2)_2C_6H_3S$, 30; 7) N_2O_4, NO_2, 9; 8) $FClO_3$, F, 5; 9) ClN⟨⟩Cl, 55. All of the obtained compounds were identified by comparison with authentic specimens. In the case of N-chloropiperidine, together with (II) (A = Cl), we isolated product (III) (N-acetylpiperidine, 59% yield), which corroborates the proposed scheme.

The O-acyl derivatives of the gem-dinitroalkanes react with electrophiles in a similar manner



R=H, CH₃; X=Cl, Br

LITERATURE CITED

1. S. A. Shevelev, V. I. Erashko, B. G. Sankov, and A. A. Fainzil'berg, Izv. Akad. Nauk SSSR, Ser. Khim., 382 (1968).

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