# THE INFLUENCE OF THE NATURE OF THE SUBSTITUENTS ON THE FORMATION OF THE SYDNONE IMINE RING

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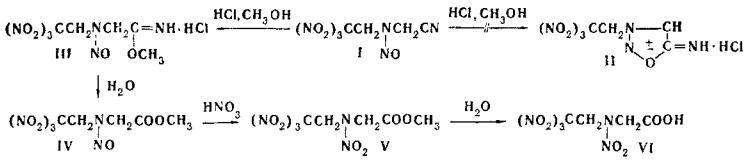
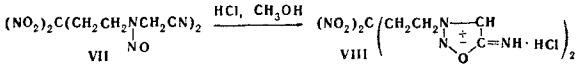
We have studied the influence of gem-trinitroethyl and gem-dinitropropyl substituents on the reactivity of N-nitroso derivatives of $\alpha$-aminoacetonitriles under the conditions of the formation of sydnone imines [1–6].

On reaction with hydrogen chloride in methanol (0° C; 2.5 hr), (cyanomethyl)(2, 2, 2-trinitroethyl)nitrosoamine (I) (mp 59–60° C. Found, %: C 19.24; H 1.52; N 29.38. Calculated for $C_4H_4N_6O_7$, %: C 19.35; H 1.61; N 29.57) forms, in place of the expected sydnone imine (II) the imidic ester III [mp 88–90° C (decomp.). Found, %: C 19.49; H 2.62; N 26.37. Calculated for $C_5H_9N_6O_8Cl$, %: C 19.57; H 2.62; N 26.58].

The structure of III was shown by its hydrolysis to the ester IV (mp 41–42° C. Found, %: C 21.24; H 2.41; N 24.76. Calculated for $C_5H_7N_5O_9$, %: C 21.35; H 2.49; N 24.91). The nitric acid nitration of the ester IV converted it into the N-nitro analog V, which was saponified to give nitroamino(2, 2, 2-trinitroethyl)acetic acid (VI) [7].



In contrast to I, the N, N'-dinitroso derivative of 3, 3-dinitropentane-1, 5-diamine-N, N'-diacetonitrile (VII) (undistillable yellow oil) gives the bis(sydnone imine) VIII [mp 217–218° C (decomp.). Found, %: C 26.89; H 3.46; N 27.76. Calculated for $C_9H_{14}N_8O_6Cl_2$, %: C 27.00; H 3.50; N 28.00].



The results presented illustrate the previously unknown influence of the position of the electron-accepting nitro group on the formation of the sydnone imines.

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