

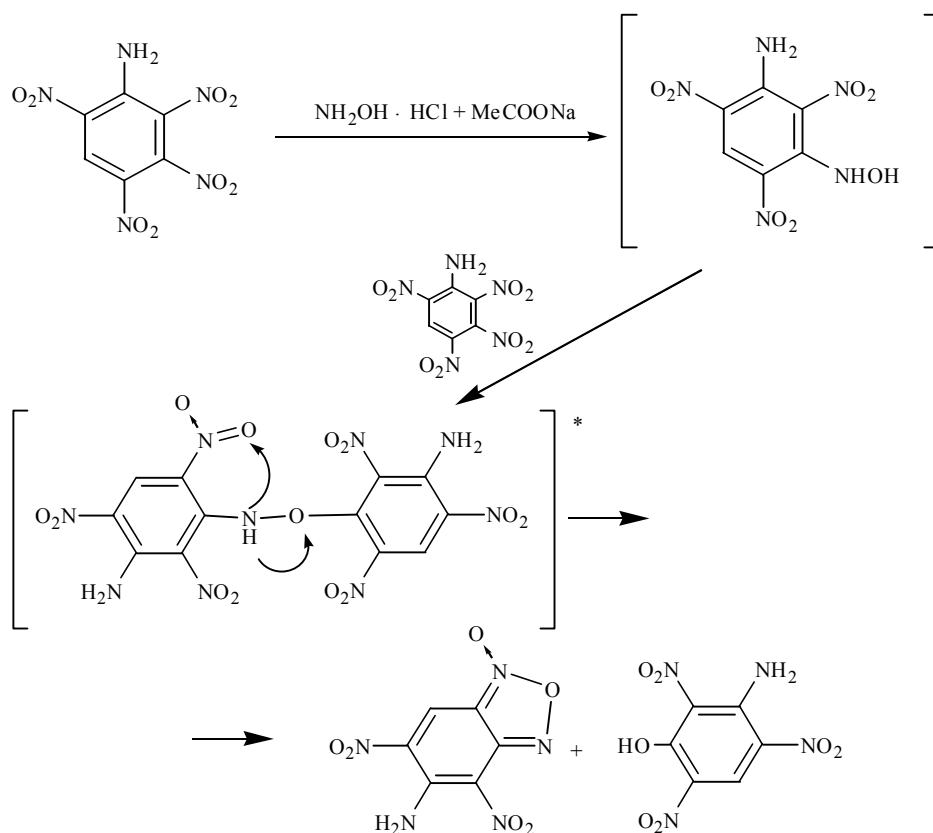
FUROXAN RING FORMATION IN THE REACTION OF 2,3,4,6-TETRA- NITROANILINE WITH HYDROXYLAMINE

O. R. Klyuchnikov, V. I. Starovoitov, F. G. Khairutdinov, and V. V. Golovin

Keywords: benzofuroxan, hydroxylamine, 2,3,4,6-tetranitroaniline.

We have discovered that the reaction of 2,3,4,6-tetranitroaniline (**1**) with hydroxylamine hydrochloride in methanol in the presence of basic agents leads to 5-amino-4,6-dinitrobenzofuroxan and 3-amino-2,4,6-trinitrophenol.

The formation of a furoxan ring in this reaction is attributed to the replacement of the labile *meta*-nitro group in **1** by a hydroxylamino group analogously to the replacement of labile chlorine in picryl chloride [1] and subsequent reactions in accord with the following scheme:



Kazan State Technological University, 420015 Kazan, Russia; e-mail: oleg@knet.ru. Translated from *Khimiya Geterotsiklicheskikh Soedinenii*, No. 1, pp. 142-143, January, 2003. Original article submitted December 29, 2001.

5-Amino-4,6-dinitrobenzofuroxan was obtained by the gradual addition of **1** (5.46 g, 0.02 mol) to a stirred suspension of hydroxylamine hydrochloride (1.39 g, 0.02 mol) and sodium acetate (3.44 g, 0.04 mol) in methanol (45 ml) at 45-50°C. The reaction mixture was maintained at this temperature for 90-120 min and then cooled. The precipitate was filtered off, washed with water, and dried to give 2.0 g (83%) of **1**; mp 265-266°C (acetic acid). The physicochemical indices of this product correspond to a sample obtained by Hobin [2] using an azide method.

REFERENCES

1. O. R. Klyuchnikov, V. V. Starovoitov, F. G. Khairutdinov, and V. V. Golovin, *Khim. Geterotsikl. Soedin.*, 428 (1996).
2. T. P. Hobin, *Tetrahedron*, **24**, 6145 (1968).