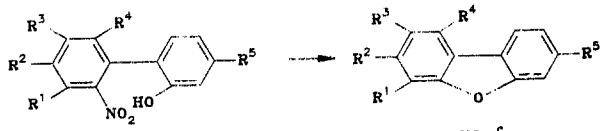
# SYNTHESIS OF DIBENZOFURAN AND ITS NITRO-SUBSTITUTED DERIVATIVES

Yu. V. Maevskii and G. I. Migachev

UDC 547.728'621'07

The intramolecular nucleophilic substitution of the ortho-nitro group in 2'-nitro-2-hydroxybiphenyl in the presence of alkali agents (KOH, NaH, t-BuOK) in polar aprotic solvents (DMF, hexametapol, DMSO) leads to dibenzofuran. This reaction is a further example of the intramolecular nucleophilic substitution of the ortho-nitro group in the biphenyl nucleus [1, 2].



I a-f IIa-f

I, II b $R^1=NO_2$, c $R^2=NO_2$, d $R^3=NO_2$, e $R^4=NO_2$, f $R^2=R^5=NO_2$; all unspecified R=H

The solution of 0.01 mole of 2'-nitro-2-hydroxybiphenyl (Ia-f) in 30-45 ml of the aprotic solvent is stirred for 2-6 h in the presence of 0.02 mole of the alkali agent at a raised temperature; the mixture is cooled and poured into dilute hydrochloric acid. The precipitate crystals are filtered off and purified by chromatography on a column with alumina prior to the isolation of the dibenzofurans (IIa-f).

The compounds are presented with the characteristics of reaction temperature (°C), yield (%, utilizing hexametapol or DMSO as the solvent and NaH as the alkali agent), and mp (°C): (IIa), 125-130, 70, and 82-82.5 (from acetone); (IIb), 110-120, 72, and 138-138.5 (from acetone); (IIc), 110-120, 75, and 182-183 (from ethanol); (IId), 110-120, 70, and 151.5-152 (from benzene); (IIe), 100, 89, and 121-122 (from acetic acid); (IIf), 40-60, 83, and 327-328 (from acetic acid).

The data of the elemental analysis of the compounds (IIa-f) correspond to the calculated data. The individuality of the compounds was evaluated by the method of thin layer chromatography on Silufol.

## LITERATURE CITED

1. G. I. Migachev, A. M. Andrievskii, and L. V. Efimova, Khim. Geterotsikl. Soedin., No. 5, 703 (1977).
2. A. M. Andrievskii, A. N. Poplavskii, and K. M. Dyumaev, Zh. Vses. Khim. O-va., 26, 101 (1981).

Moscow Technological Institute of the Meat and Milk Industry, Moscow 109818. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 6, p. 852, June, 1986. Original article submitted July 16, 1985. Revision submitted January 1, 1986.

 0009-3122/86/2206-0676$12.50 