

Russian Journal of Organic Chemistry 2013 vol.49 N4, pages 591-597

Synthesis, structure, and antibacterial activity of aminobenzofuroxan and aminobenzofurazan

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Abstract

The amination of 4,6-dichloro-5,7-dinitrobenzofuroxan and 4,6-dichloro-5,7-dinitrobenzofurazan with dibenzylamine followed the aromatic nucleophilic substitution pattern (S_NAr) and gave products of replacement of both chlorine atoms in the six-membered ring with elimination of hydrogen chloride. Regardless of the reactant ratio, 4,6-dichloro-5,7-dinitrobenzofuroxan was converted into 4,6-bis(dibenzylamino)-5,7-dinitrobenzofuroxan, whereas 4,6-dichloro-5,7-dinitrobenzofurazan under analogous conditions gave rise to unusual bisammonium derivative which lost proton from the amino group on C4 and benzyl group from the amino group on C6; as a result, the corresponding diamine with secondary and tertiary nitrogen atoms was obtained. The structure of the isolated compounds was determined by IR and NMR spectroscopy, elemental analysis, and X-ray analysis; their thermal stability was studied by simultaneous thermogravimetry and differential scanning calorimetry. © 2013 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S1070428013040167>
