

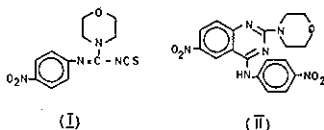
REACTIONS OF FORMAMIDINOYL ISOTHIOCYANATES. A NEW SYNTHESIS OF QUINAZOLINE DERIVATIVES

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Heating of title compounds (I) give rise to isomerisation and dimerisation products — 3H-Quinoxaline-4-thiones and substituted amidinoyl - tetrahydro- s- triazine-2,5-thiones respectively.

We have found, that N¹,N¹-(pentamethylene-3-oxo)-N²-[4-nitrophenyl] formamidinoyl isothiocyanate afford on heating not only mentioned products of isomerisation and dimerisation, but also 6-Nitro-4-[4-nitroanilino] quinazoline (II).

Aspects formation of this compound and some other reactions of Formamidinoyl isothiocyanates will be discussed.

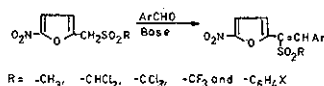


REACTION OF 5-NITROFURFURYL SULPHONES WITH ALIPHATIC ALDEHYDES. NEW SYNTHESIS OF 5-NITROFURYL CYCLOPROPANES

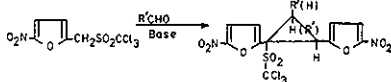
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Condensation of 5-nitrofurfuryl sulphones with substituted aldehydes of the aryl, heteroaryl and aryl furyl series afforded the corresponding trisubstituted ethylenes.



Reaction of 5-nitro-2-furfuryl trichloromethyl sulphone with aliphatic aldehydes led to 1-(5-nitro-2-furyl)-1-trichloromethyl sulphonyl-2-(5-nitro-2-furyl)-3-alkyl cyclopropanes, where alkyl is H, CH₃, C₂H₅ and C₃H₇ respectively. This reaction with aliphatic aldehydes is a consequence of their less reactivity and possibility of further cyclization with carbanions, due to less steric hindrance of the resulting ethylene.



The reaction mechanism and stereochemistry are discussed.

¹⁹F AND ¹H NMR SPECTROSCOPY OF 2-ALKYL DERIVATIVES OF 3,3,4-TRIFLUOROXETANE

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¹⁹F and ¹H NMR spectra of 2-alkyl and 2,2-dialkyl-3,3,4-trifluoroxetanes were analyzed. We have solved the problem of assignment of non-equivalent resonances of CF₂ group as well as the assignment of resonances of individual isomers. The determination of configuration and conformation was solved independently by the lanthanide shift reagent Yb(FOD)₃ separately for protons as well as for fluorine nuclei, the obtained results are confronted with results obtained by EHT quantum mechanical method for various puckering angles of oxetane ring.

Assignment of resonances of CF₂ group and determination of configuration was based on calculation of relative chemical shifts due to electrical fields at fluorine nucleus, as well as on relative signs and values of F—F coupling constants. A confirmation of this assignment was obtained based on ASIS, and on variable temperature studies.

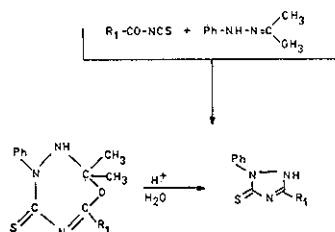
All compounds were obtained by alkaline cyclization of fluoro-chloroalkanol, which were prepared by the radical addition of 1- and 2-alkanols to chlorotrifluoroethylene.

SUBSTITUTED 2,3,4,5-TETRAHYDRO-1,3,4,6-OXATRIAZEPINE-5-THIONES

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Benzoyl- and 2-furyl isothiocyanates react with acetonephenylhydrazone to give oxatriazepinethiones which on hydrolysis afforded 1,2,4-triazoline-5-thiones.



This cycloaddition reaction has been found to not proceed with benzaldehydephenylhydrazone.

The structure of compounds prepared was proved by spectral methods.