

C-ALKYLATION REACTION OF AROMATIC AMINES WITH POLYFLUOROCARBONYLIC COMPOUNDS

Nicolay D. Chkanikov, Alexey Y. Zelenin, Alexey F. Kolomietz and Alexander V. Fokin

Institute of Organo-Element Compounds, USSR Academy of Sciences, Moscow,
Vavilov str. 28 (U.S.S.R.)

Reaction of hexafluoroacetone and methyl trifluoropyruvate with tertiary, secondary and primary aromatic amines have been studied. Tertiary amines give in very high yields under the mild conditions only mono-C-alkylated products. The application of secondary amines allow to obtain either mono- or disubstituted products, depending on molar ratio of the starting materials.

The C-alkylation of indoline and tetrahydroquinoline was investigated as way. It was found that the alkylation of indoline by hexafluoroacetone proceeded regioselectively and produced only C⁷-alkylated derivative.

A new reaction of primary and some secondary aromatic amines with methyl trifluoropyruvate yielding the production of 3-hydroxy-2-oxo-3-trifluoromethylindoline derivatives was found.

The present investigation has shown the unique reaction activity of polyfluorocarbonylic compounds towards the action of aromatic amines. These reactions may be the result of a concerted mechanism comprising an initial one electron-transfer process.