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REACTIONS OF POLYFLUOROAROMATIC COMPOUNDS WITH BROMOMAGNEZYLAMINES

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Several years ago we have found that the reactions of polyfluorobenzoic acids with Grignard reagents are available for the synthesis of o-aryl- and o-alkylpolyfluorobenzoic acids. We report now that the interaction of polyfluoroaromatic carbonyl compounds with bromomagnezylamines in ether results in substitution ortho-fluorine and/or reaction on carbonyl-group. Direction of process depends on the electron density at C of C=O group and nucleophilicity of reagent. Polyfluorinated aromatic and heteroaromatic acids react with ArN(R)MgBr with substitution of ortho-fluorine exclusively. These reactions are a general and convenient route to polyfluorinated arylanthranilic acids.

1,2,3,4-Tetrafluoro-9-chloroacridine easily obtained from o-anilinotetrafluorobenzoic acid reacts with N-, O- and C-nucleophiles at positions 3 and/or 9, depending on the type of reagents.

Treatment of the methyl- and phenyl-2,3,4,5,6-pentafluorophenylsulfones with ArNHMgBr in ether leads to the substitution of ortho-fluorine. In the cases of compounds $(\text{C}_6\text{F}_5)_2\text{SO}_x$ ($x=1,2$) this process is followed by the intramolecular cyclisation into oxydes of N-aryloctafluorophenothiazines.