

# The Formation of Pentafluorophenyl Derivatives of Isoindoline-1,3-dione and Isoindoline-1-one in the Reactions of N-(Pentafluorophenyl)carbonimidoyl Dichloride with Aromatic Acids and Their Derivatives in the Presence of AlCl<sub>3</sub>

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We have previously shown that polyfluoroaromatic compounds with an imidoyl chloride group in the presence of AlCl<sub>3</sub> can act as efficient electrophilic reagents with aromatic compounds giving a N-containing ring system. Thus reaction with 1,2,4,5-tetrafluorobenzene and pentafluorobenzene yield 1,2,3,4-tetrahydroquinazoline-2,4-diones. Reactions with a nitrogen-carbon multiple bond in aromatic imidoyl chlorides or nitriles lead to polyfluorophenyl derivatives of 2-imidazolidone, 2-imidazolone or 1,3,5-triazine-2-one correspondently. This work describes the ability of such electrophilic reagents to react with aromatic acids and their derivatives. The interaction of N-(pentafluorophenyl)carbonimidoyl dichloride (I) with benzoic, phthalic acids or with benzoyl chloride, ethyl benzoate, phthaloyl chloride and phthalic anhydride at 170<sup>0</sup>C in the presence of AlCl<sub>3</sub> lead to 2-(pentafluorophenyl)isoindoline-1,3-dione (II). With benzoic acid and its derivatives formation of 2-(pentafluorophenyl)-3-[(pentafluorophenyl)imino]isoindoline-1-one (III) is also occurred. Peculiarities and mechanisms of such transformations are discussed.

