

N-(CHLOROSULFINYL)-IMIDAZOLE AS A NEW IMIDAZOLE TRANSFER REAGENT

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In connection with the continuing our studies on imidazole transfer reaction using *N,N'*-thionyl diimidazole (1), our particular interest was focused on the synthesis of *N*-(chlorosulfinyl)imidazole (2) in which one imidazole group in 1 was replaced by the other leaving group (Cl).

Reaction of 1 with an equimolar amount of thionyl chloride produced two molar eq. of 2 via the imidazolium salt because of nitrogen at the 3-position in 1 had basic properties leading to a quarternary salt by an acid chloride. By analogous consideration, 1 was treated with acyl chloride and hydrochloric acid to give 2. 2 was employed as an imidazole transfer reagent on carbonyl compounds (3). The reaction of 2 and 3a afforded the monoimidazole (5a). On the other hand, the reaction of 1 with 3a gave the diimidazole (4a) as the major product via the addition intermediate in sharp contrast to the reaction of 2 with 3a. By analogous consideration, *N,N'*-thionyl dibenzimidazole (6) or *N*-(chlorosulfinyl)-benzimidazole (7) underwent benzimidazole transfer reaction to the carbonyl compounds.

