



University of Groningen

## Synthese en reacties van gesubstitueerde tosylmethylisocyaniden

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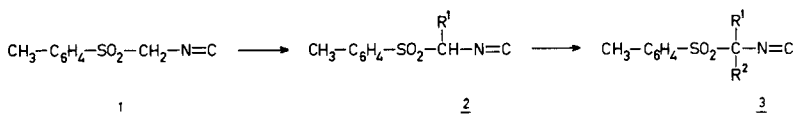
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## S U M M A R Y

In this thesis the synthesis and the synthetic applications of mono- and disubstituted derivatives of tosylmethyl isocyanide (TosMIC, 1) are described.

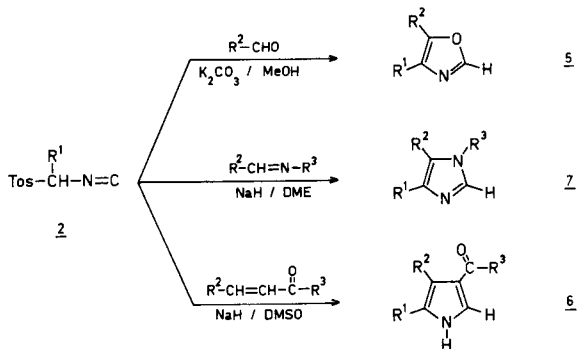
Chapter 1 is an introductory chapter.

Chapter 2 deals with the synthesis of mono- and disubstituted derivatives of 1, mainly by alkylations of the  $-\text{CH}_2-$  group. Monoalkylation of 1 with reactive alkyl halides is performed under phase-transfer conditions.

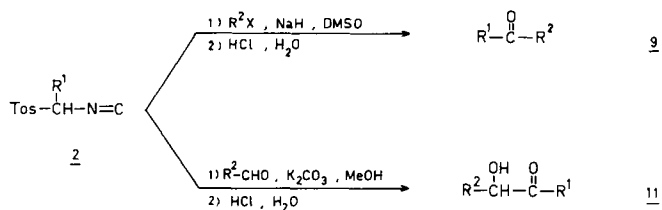


Monoalkylation with less reactive alkyl halides is carried out with NaH in DMSO-ether. Dialkylated products are made by alkylation of 1 with 2 equivalents alkyl halide, and by reaction of monoalkylated products with 1 equivalent alkyl halide.

Chapter 3 deals with the use of monoalkylated tosylmethyl isocyanides in the synthesis of oxazoles, imidazoles and pyrroles.



The use of TosMIC as a formyl anion equivalent is described in chapter 4. Starting with TosMIC a number of carbonyl compounds can be synthesized. In this chapter the synthesis of ketones and  $\alpha$ -hydroxyketones in this fashion are described.



Chapter 5 deals with the reduction of substituted tosylmethyl isocyanides with  $\text{LiAlH}_4$  into N-methylamines. Reduction with  $\text{LiAlH}_4$  of 4-tosyl-2-oxazolines gives  $\beta$ -hydroxy-N-methyl-amines.

