

REACTION OF AROMATIC AMINE N-IMINES
REACTIVITIES OF UNSTABLE INTERMEDIATES FORMED IN 1,3-DIPOLAR
CYCLOADDITION AND THEIR APPLICATION

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In 1,3-dipolar cycloaddition of pyridine N-imines, unstable intermediates, non-aromatized(1:1)adducts (1), are formed, which are chemically active and available for the organic synthesis.

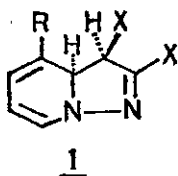
In the present paper, we wish to report first the stabilities and the chemical reactivities of these adducts (1), and next refer to the structure and the properties of pyridine N-imines and quinoline N-imines.

The stabilities of 1 to heat or O₂ depended on the electronic effects of substituent groups R, but to pH were independent of its effects.

On the other hand, as to the chemical reactivities of 1, the pyridine ring of 1 was easily subject to the catalytic hydrogenation and also to oxidation with m-chloroperbenzoic acid.

Furthermore, it has become apparent that these adducts have reducing activities. For example, attempted reaction of 1 with N-methylacridinium iodide was found to give N-methylacridane.

The structure and the properties of pyridine N-imines and quinoline N-imines were investigated. It has become apparent that in the case of pyridine N-imines, N-imine monomers are dominant in solution, while N-imine dimers are dominant in the case of quinoline N-imines. Finally, we established the structure of 3-bromoquinoline N-imine dimer by X-ray diffraction study.



R=3,5-diMe, H, Br, COEt

X:COOMe