

The 1,3-Dipolar Cycloadditions of Cyclic Nitrones with Trisubstituted Alkenes

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ABSTRACT

A study of the regio- and stereochem. behavior of the 1,3-dipolar cycloaddn. of a series of trisubstituted alkenes with the cyclic nitrones 1-pyrroline 1-oxide (I) and 3,4,5,6-tetrahydropyridine 1-oxide (II) has been carried out. Regio- and stereoselectivity in these cycloaddns. have been explained in terms of max. overlap of frontier orbitals, steric encumbrance, and secondary orbital interactions. The activation parameters and the effect of solvent on the rate const. for the addn. reaction of a highly polarized alkene indicate the concerted nature of the reaction. II is more reactive than I in all of these addns.