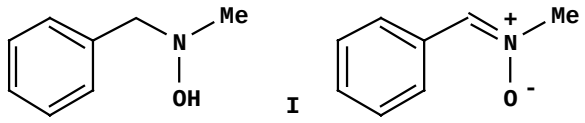
Regiochemistry of mercury(II) oxide oxidation of unsymmetrical N,N-disubstituted hydroxylamines. Ali, Sk. Arsof; Hashmi, S. M. Azhar; Siddiqui, Mohammad N.; Wazeer, Mohammed I. M.. Chemistry Dep., King Fahd Univ. Petroleum Minerals, Dhahran, Saudi Arabia. Tetrahedron (1996), 52(47), 14917-14928. Publisher: Elsevier.

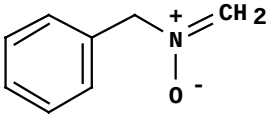
Abstract

Mercury(II) oxide oxidn. of N,N-disubstituted hydroxylamines with the α and α' carbon atoms contg. one and two hydrogen atoms, resp., gave aldonitrones in a highly regioselective manner. For example, the oxidn. of N-hydroxy-N-methylbenzenemethanamine (I) gave N-Methylphenylnitrone [i.e., N-(phenylmethylene)methanamine N-oxide] (II) and N-methylenebenzenemethanamine N-oxide (III) in a 62:38 ratio. Removal of the α proton is involved in the rate detg. step as shown by primary kinetic isotope effect.



I

II



III