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**ABSTRACTS**



MONONUCLEAR COPPER (II) COMPLEXES CATALYZED OXIDATION OF TMPD AND O-PHENYLENEDIAMINE AND OXYGEN INSERTION IN THE O-PHENYLENEDIAMINE/Ph<sub>3</sub>P/COPPER (II) CATALYST SYSTEM.

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The catalytic activities of bis(acetato) bis(imidazole) copper (II) and bis(valproato) bis(imidazole) copper (II) complexes for the oxidation of TMPD (N,N,N',N'-tetramethyl-P-phenylenediamine) in air were followed spectrophotometrically by monitoring the increase in the TMPD<sup>+</sup> absorbance in methanol at 565nm as a function of time [1]. For both complexes, the method of initial rates showed a first-order dependence on the catalyst and TMPD concentrations.

These complexes were found to be an effective catalysts for the oxidative cyclization of O-phenylenediamine (OPD) to 2,3-diaminophenazine (DAP). The catalytic activities were followed spectrophotometrically by monitoring the increase in the DAP absorbance in methanol at 428nm as a function of time. When copper (II) complexes were added to a methanolic solution containing OPD and Ph<sub>3</sub>P in a mole ratio of 1:4 under the atmospheric air, DAP were not obtained but instead Ph<sub>3</sub>P = O was produced. The production of Ph<sub>3</sub>P = O was monitored by following the increase in the P = O IR frequency at 1195 cm<sup>-1</sup>. The relevance of these copper (II) complexes to the biological functions of copper proteins and enzymes are discussed [2].

1. Nishida, Y.; Osichi, N., and Kida, S., *Inorg. Chim. Acta*, 1980, 46, L69.
2. Martell, A.E., *Pure Appl. chem.*, 1983, 55, 125.