Oxovanadium(IV), Nickel(II) and Palladium(II) Complexes of Tridentate Salicylaldiminates Derived from 2,4-Di-tert-butyl-6-aminophenol

Veli T. Kasumov

Department of Chemistry, Faculty of Arts and Sciences, Harran University, Sanlıurfa, Turkey

Reprint requests to Dr. V. T. Kasumov. E-mail: vkasumov@harran.edu.tr

Z. Naturforsch. 56b, 263–270 (2001); received July 27, 2000

Tridentate Salicylaldiminates, ESR, Catalytic Activity

Several new binuclear nickel(II), oxovanadium(IV) and palladium(II) complexes (ML²) of tridentate salicylaldimines (L²H₂) obtained from substituted salicylaldehydes and 2,4-di-tert-butyl-6-aminophenol, as well as mononuclear nickel(II) and oxovanadium(IV), MQ⁻·nH₂O, complexes with hydrogenated L²H₂ ligands (Q²H₂) have been prepared and their spectroscopic, magnetic and catalytic activity (for PdL²) have been investigated. NiL² and VO(L²) complexes when dissolved in pyridine, take up three or two pyridine molecules to form six coordinated complexes, respectively. The Ni(II) and VO(IV) complexes obtained from Q²H₂ can be formulated as NiQ⁻·3H₂O and VOQ⁻·H₂O. All VO(IV) complexes have been characterized by ESR parameters. It has been found that some PdL² complexes without any preliminary activation, in EtOH, THF and DMF exhibit high catalytic activity in the hydrogenation of nitrobenzene or cyclohexene at room temperature and at 30 - 40 °C under 760 torr H₂. When this reaction has been carried out in the ESR cavity at room temperature the triplet of 12 line multiplets due to the nitroxyl type coordinated radical (g = 2.013, A²⁺ = 10 G, A²⁻ = 0.8 G) was detected.