



NEW Ni(II) COORDINATION POLYMERS WITH INSULATING AND ANTICORROSIVE PROPERTIES

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Abstract

A series of new Ni(II) poly-phosphinates have been synthesised using Ni(II) acetylacetonate as nickel precursor and a succession of ligands derived from phosphinic acid: ethyl-butyl-phosphinic acid, ethyl-butyl-thio-phosphinic acid, and respectively ethyl-butyl-di-thio-phosphinic acid.

Chemical analysis gel-chromatography, infrared spectroscopy (IR), spin electronic resonance (RES), X-ray diffraction (XRD), thermal gravimetric analysis (TGA), electrical resistance measurements at different temperatures, dielectric loss and electrical discharges have been used as characterization methods. Based on the experimental results and on literature data the structures of the studied compounds are predicted. All the investigated samples revealed good insular properties having the electrical resistance around $10^{-15} \Omega \cdot \text{cm}^{-1}$. Also, they presented anticorrosive protecting properties resisting to caloric effects in a normal atmosphere pending temperatures of 300 °C.

Keywords: Ni(II) poly-phosphinates, coordination polymers, anticorrosive and insulating properties, phosphinic acid derivatives

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