



INFLUENCE OF THE ADDITION OF NANOCCLAY AND CONVENTIONAL LOAD IN THE PROPERTIES OF POLYMERIC NANOCOMPOSITES EPOXY-BASED APPLIED TO POWDER COATING

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Polymeric nanocomposites when compared with conventional composites are highlighted by the diversity of applications and significant improvements in properties. The incorporation of fillers in organic coatings can provide significant improvements in the barrier, thermal, and anticorrosion properties, among others, leading to development of a new segment in the area of clean technologies: the application of nanocomposites to powder coatings. In this study, two montmorillonites (MMT) organically modified (Cloisite 30B and Cloisite 15A), an unmodified montmorillonite (Cloisite Na), and a conventional filler (barium sulfate) were incorporated in the proportions of 0, 2 and 4% (w/w) in the melt state (extrusion) in a commercial powder coating epoxy base. The composites were characterized by thermogravimetric analysis (TGA), differential scanning calorimetry (DSC) and X-ray diffraction (XRD). The study showed an increasing in thermal stability, and the melting and crosslinking of the epoxy based nanocomposites with the addition of MMT 15A and 30B. Predominantly exfoliated structure was observed for samples with the addition of MMT 30B.