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NANOCOMPOSITE FROM BRAZILIAN RAW MATERIALS: ORGANOPHILLIC CLAY / NATURAL RUBBER

Guillermo Ruperto Martín-Cortés[1], Fabio José Esper[2], Adriana Almeida Silva[2], Wildor Theodoro Hennies[1], Francisco Rolando Valenzuela-Díaz[2].

[1]PMI-EPUSP – Mining & Petroleum Eng. Dept. – Polytechnic School – University of São Paulo, Av. Prof. Mello Moraes, 2373, 05508-900, São Paulo, SP, Brazil.
[2]LMPSOL – Raw Materials & Non-metallic Solids Laboratory – PMT-EPUSP – Metallurgic & Materials Eng. Dept. – EPUSP - Polytechnic School – University of São Paulo, Av. Prof. Mello Moraes, 2463, 05508-900, São Paulo, SP, Brazil.

Since the beginning of the 2000 decade, the LMPSOL - Raw Materials & Non-metallic Solids Laboratory – PMT-EPUSP – Metallurgic & Materials Eng. Dept. – EPUSP - Polytechnic School – University of São Paulo is researching the production of nanocomposites from organophillic clays and polymers (NAOB by its Brazilian name). Between those polymers the natural rubber, as a Brazilian original product is one of the selected raw material for this study. The other is the organophillic clay produced by the organic modification of Brazilian smectite clay. Organophillic clays and natural rubber are materials with high potential of industrial use. In the production of this nanocomposite material the main goals had been to substitute the carbon-black as reinforcement filler with expressive lesser quantities of organophillic clay to improve the involved ecological indices in the rubber products industry, but also keeping or improving the economic and technological parameters of these products. The present paper show some physical and mechanical characteristics of the NAOB and it comparison with vulcanized rubber materials traditionally produced with carbon-black.

Key-words: nanocomposite organophillic clays/natural rubber; organophillic clays; smectite clays.