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Synthesis of NR based Polyurethanes containing phosphorylated polymers as chain extenders

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ABSTRACT

Natural Rubber (NR) based Polyurethanes (PU) with phosphorylated polymers as chain extenders were studied. Two types of polymer were investigated: poly-phosphonate and poly-phosphate synthesized using a RAFT methodology. Two molecular weights (5000 and 3000 $g.mol^{-1}$) were targeted with dispersity close to 1.1. The PU films were prepared from a liquid Hydroxyl Telechelic Natural Rubber (HTNR) which was obtained through a controlled degradation. The mass percentage of the chain extenders added in the PU film was varied from 1 to 8%. The films