

# PREPARATIONS AND PROPERTIES OF POLYURETHANE NANOCOMPOSITES WITH ORGANOCLAY OR NANOSILICA

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## ABSTRACT

Polyurethane nanocomposites reinforced with organoclay or nanosilica were prepared by dispersing the filler during polymerization. The modulus and thermal stability of polyurethane were enhanced with the addition of fillers and the effect was more pronounced with organoclay than with nanosilica. The crystallization and damping behaviors showed that the mobility of polyurethane chain is restricted by the filler, and the effect was more evident with organoclay.

**Key words:** polyurethane, nanocomposite, organoclay, nanosilica, tensile properties, dynamic mechanical properties, thermal properties, thermal stability

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