

### Effect of chemical structure of oligomeric surfactants on properties of organoclays and polyurethane/clay nanocomposites

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Oligomeric surfactants were synthesized for making pristine montmorillonite hydrophobic. Properties of organoclay such as d-spacing and ion-exchanged fraction depended on the chemical structure of surfactant. d-spacing and ion-exchanged fraction increased when surfactant had functional group and hydrophobic chain. The organoclay treated with the oligomeric surfactant was suspended in DMF, so the dispersibility of organoclay could be controlled by sonication. The properties of polyurethane/clay nanocomposites such as thermal stability, morphology, transmittance, oxygen permeability and tensile properties were investigated. Because the interfacial area between polymer matrix and organoclay was enlarged with increasing the dispersibility of organoclay, the properties of the nanocomposites were enhanced when organoclay was well dispersed in polyurethane matrix.