TREATED LOCAL MMT USED AS NANOPARTICULES IN POLYURETHANE RIGID FOAMS

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ABSTRACT

The main objective of the present work is the elaboration of nanocomposites PU/MMT foams by the use of local "bentonite" called " Maghnite". These nanocomposites were elaborated by in situ polymerization. The first stage relates to the organophile treatment of the MMT by an alkylammonium $C_{16}H_{35}N$ in order to increase the interfoliate distance. The second one is reserved to the optimization of the PUR formulation; the nanocomposites PU/MMT foams have been carried out by the processes of free expansion. The identification and characterization of raw materials and the obtained foams have been done by various methods such as: FTIR, XRD, impact strength test, Test of inflammability. From the found results, it is assigned by XRD analysis that the interfoliate distance increases from **12.13 °A** to **28.56 °A** and the structure is exfoliated. We notice from impact strength test and tenacity test that these mechanical properties are improved compared to those not treated.

Key words : Polyurethane, MMT, Nanoclay, organophile,

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