

Modification of montmorillonite by Difattyacyl thiourea using cation exchange process.

ABSTRACT

Cation exchange process was used to modify for montmorillonite (Na-MMT) by difatty acyl thiourea (DFAT). Basal spacing functional groups identification and thermal stability of this organomontmorillonite (OMMT) were characterized using X-ray Diffraction (XRD), Fourier transform infrared (FTIR) spectroscopy and thermogravimetric analysis (TGA) respectively. Elemental analysis was also used to know the composition of OMMT. The (XRD) results showed that the basal spacing of the treated clay with DFAT increased from 1.23 nm to 3.05 nm. The highest d-spacing was observed at 2.00 CEC. FTIR spectra illustrate that DFAT compound was successfully intercalated into the clay layers. Thermogravimetric analysis shows that the thermal decomposition of organoclay occurs with higher temperature than pure DFAT.

Keyword: Sodium montmorillonite; Difatty acyl thiourea; Cation exchange process; Surfactant.