

## Abstract

In this article, the rheological properties of bentonite suspensions at different concentrations, with and without anionic polymer additives, are investigated. The clay used is a drilling bentonite from Maghnia (west of Algeria) and the additives are sodium carboxymethylcellulose and xanthan gum. Experimental flow measurements, obtained by a controlled-stress rheometer, were used to highlight the effect of the additives on the rheological properties of the bentonite suspension. The Herschel-Bulkley and the Ostwald models were used to fit the rheograms. It has been shown that the presence of carboxymethylcellulose in the bentonite suspension has helped to remove the yield stress and to increase the viscosity of the mixture. On the other hand, the xanthan induced an increase in the yield stress and a high increase in viscosity of the bentonite-polymer mixtures