

# EFFECTS OF ELECTROLYTES OF THE RHEOLOGICAL PROPERTIES OF DIFFERENT BENTONITES

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Bentonitic clays are largely composed of the mineral montmorillonite. Today, bentonites are used in different branches of industry, such as in drilling fluids, dyes, Pharmaceuticals, paper, cement, nanocomposites, polymer composites and ceramics. Bentonite dispersions are widely used in industrial processes because of their exceptional rheological behavior. In this work, the rheological behavior of three types of bentonites with different  $Na^+ / Ca^{+2}$  ratios was investigated. The bentonite dispersions showed Newtonian, Bingham plastic and shear thinning behaviors depending of the solid concentration and bentonite type. Although, all bentonite dispersion exhibited a thixotropic behavior, the Na-bentonite showed the greater degree of thixotropy which was two order of magnitudes greater than that of Ca-bentonite. The addition of electrolytes in the concentration range of 0.02-0.2 M reduced the apparent viscosity of the bentonite suspensions and changed its rheological behavior from shear thinning to Newtonian and shear thickening. The divalent cation salts experienced more reduction in the apparent viscosity and yield stress of suspension than the monovalent cation salts.