

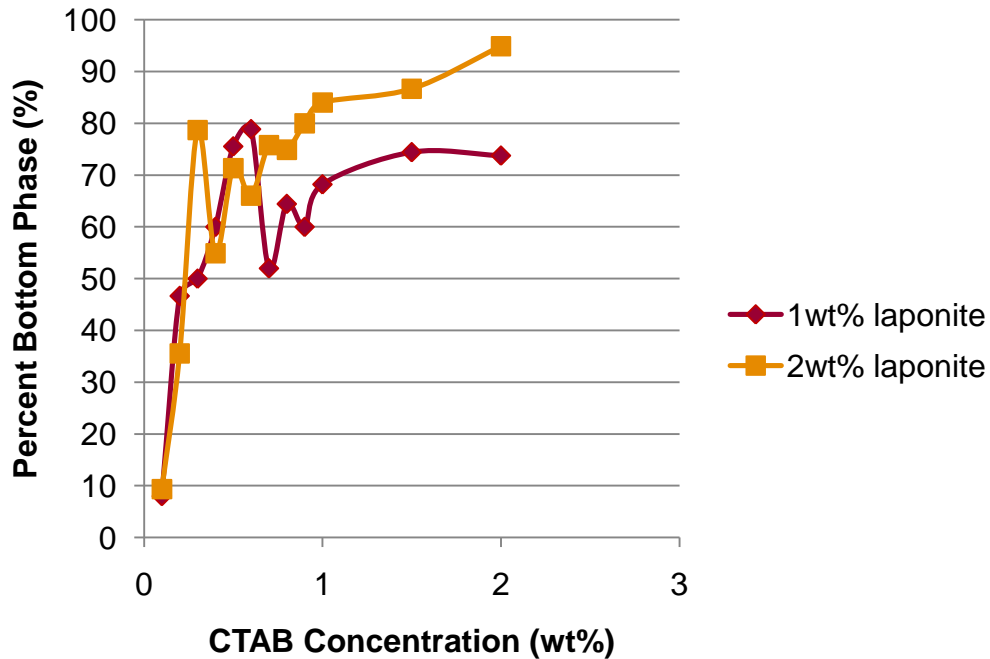


## Physical Properties of Surfactant Clay Mineral Solution

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The manufacture of cosmetics, pharmaceuticals, paints, detergents and even some biosensors are made possible by specific mixtures of clays and organic compounds.

In this project, the viscoelasticity and complex viscosity of several samples of a model clay/surfactant mixture, laponite and cetrimonium bromide (CTAB), were analyzed. Six samples of increasing weight percents of CTAB were manufactured while keeping the concentration of laponite constant, so that we could observe the changes in properties of the samples of varying composition. Rheology tests were run on the samples.

The results of the project show that increasing concentrations of CTAB decrease the complex viscosity and viscoelasticity of the gel, thus decreasing its stability.

Bottom Phase Height versus CTAB Concentration