

# Challenges Stock Tank Mixing Spring 2011

## Coagulant concentrations and stock mixing

Experiment with creating a 500 g/L alum stock concentration to see if there are any problems with solubility or high viscosity.

Determine the acceptable range of stock concentrations for poly aluminum chloride (PACl).

Experiment with methods that an operator could use to create stock solutions that minimize how much stirring is required. For example, would it be possible to pump the settled water into a mesh basket holding the alum (or PACl) so that the coagulant would dissolve before dripping into the stock tank? Design a simple stirrer system that can be added to a 55 gallon drum or to a Rotoplast tank. For an example see the stirrer system that is used at [Marcala](#).

Assess what is required to dissolve any granular material on the bottom of the tank and what is required to blend the entire solution. Build a prototype, test it, and then add it to the design tool.