Hydrodynamic Self Consistent Field Theory  DAVID HALL, Department of Physics, University of California, Santa Barbara and Los Alamos National Laboratory, TURAB LOOKMAN, Theoretical Division, Los Alamos National Laboratory, NM, SANJOY BANERJEE, Department of Chemical Engineering, University of California, Santa Barbara — We have developed a new computational technique used to model the flow of polymeric fluids that combines the strongest features of self consistent field theory and viscoelastic hydrodynamics. We will demonstrate the utility of this approach by applying it to the phase separation of block copolymer melts.