

CE 329, Fall 2015
Assignment 27

Problem Statement

The liquid phase reaction (1) will be run in a cascade of three CSTRs of equal volume. The reaction is mildly exothermic and occurs in an excess of solvent so that the reactors are essentially isothermal. The feed rate is $10,000 \text{ L h}^{-1}$ containing equal amounts of A and B at concentrations of 1.2 mol L^{-1} . The reaction rate is second order, first order in each reactant, with a rate coefficient of $3.5 \text{ L mol}^{-1} \text{ h}^{-1}$ at the operating temperature. If a final conversion of 75% is desired, what should the reactor volumes equal?

