Chemical Engineering 476
Fall 2014

Homework 23

1. For the simulation that you performed for Homework 22 (split a mixture of acetone and isopropyl alcohol in a binary distillation column. The feed composition is 45 mol% isopropyl alcohol and the feed flow rate is 750 kmol/h. The product streams should be at least 96% pure. Assume a column pressure of 1 atm.), change the feed to contain 45 mol% isopropyl alcohol, 54% acetone and 1% nitrogen gas. Specify a total bubble point condenser as we have typically done. What is the temperature of the condenser? Why? What might you do to address this issue? (you don't need to fix the problem, just understand what is going on and why). Note- use a mixed phase feed at 1atm and 35^{o}C.

2. Please work Problem 12D.2 from your text.

3. For an absorption column, we work from (L/V)min to get a flow rate. In contrast, we work from (L/V)max for a stripping column. Why?

4. Read Section 12.4. Please describe the key idea/result presented in this section.