Experiment 3: Simple vs. Fractional Distillation

Appendix C: Questions

Answers to questions should be typed and submitted in Appendix C of your Lab Report. Hand written answers will not be graded. Supporting figures, if any, may be neatly hand drawn.

1. Which of the following compound pairs could be separated by simple distillation?
   a. acetone and aniline
   b. n-butyl acetate and 1-butanol
   c. hexanes and toluene
   d. both a and c
   e. none of the above

2. Refer to the boiling point diagram for butanol/acetone shown below (Compound A = acetone; B=butanol). A mixture containing 0.5 mole fraction butanol and 0.5 mole fraction acetone is distilled.

   ![Boiling Point Diagram](image)

   a. At what temperature would this solution begin to boil? How does this temperature compare with the boiling points of the pure compounds?

   b. What would be the composition of the first droplet of vapor which recondenses? How does this drop compare to the composition of the original liquid being distilled?

   c. How many times would you need to condense and re-evaporate the first vapor to obtain pure acetone?