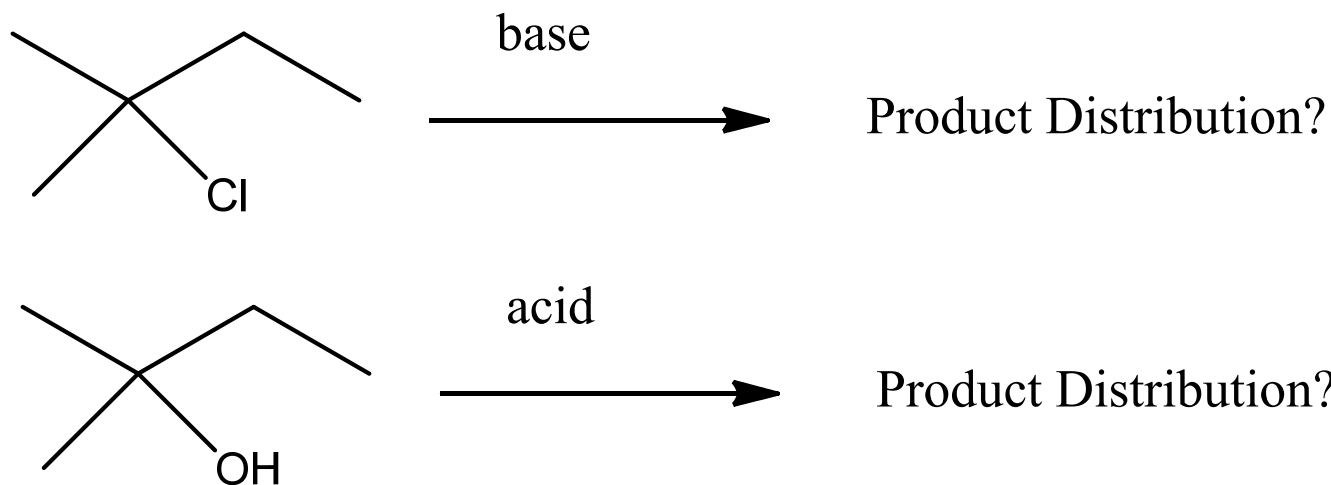


Elimination Reactions and Distillation

S343

Lab Goals

- We want to compare product distributions in elimination reactions
- Does mechanism matter?

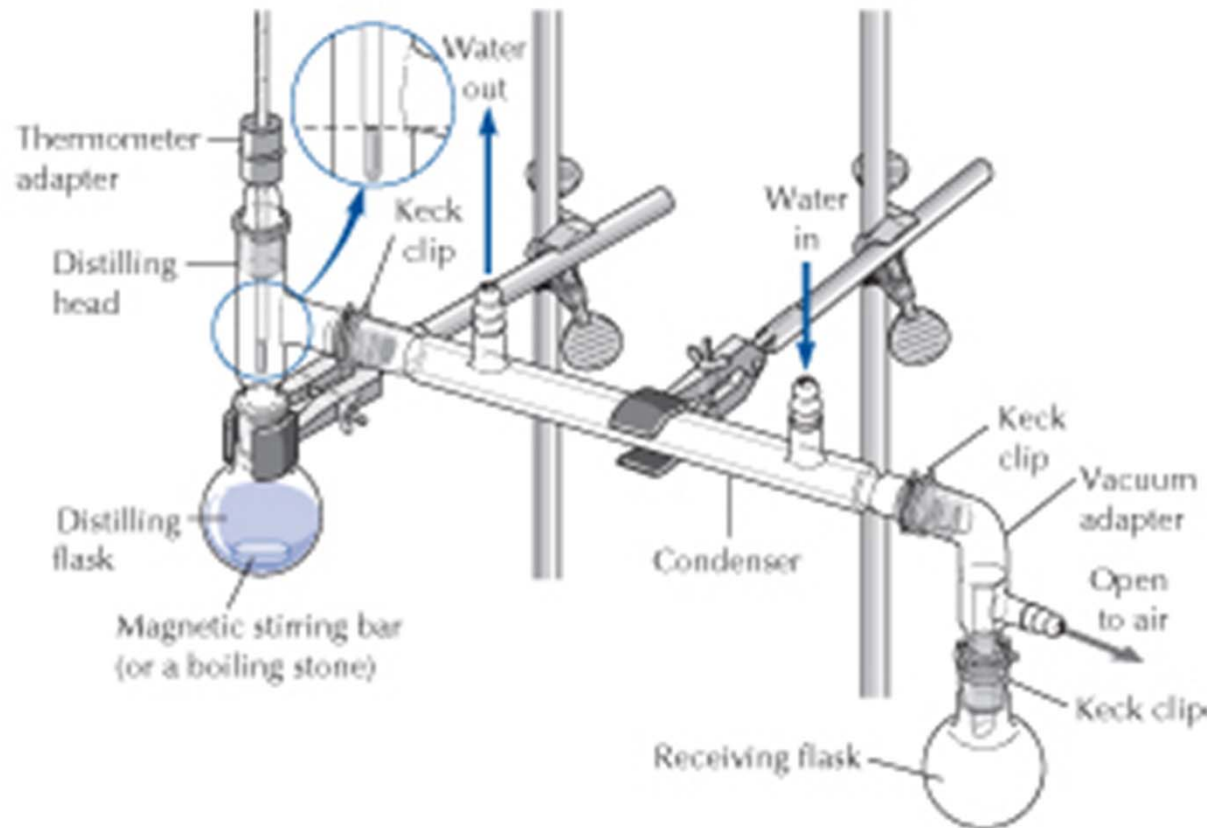


Experimental Flowchart

- Conduct the reactions with a partner
- How do we further purify and characterize a liquid sample?
 - Melting point?
 - Recrystallize?
 - TLC?

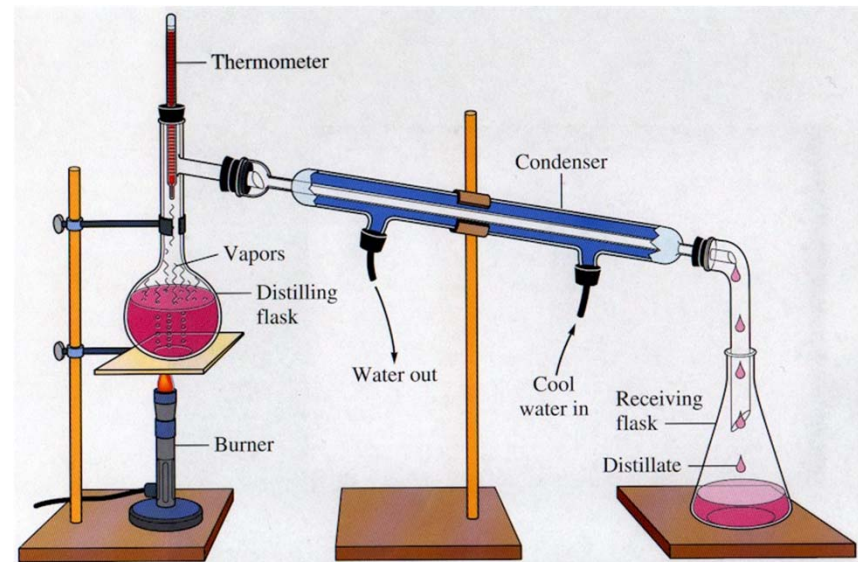
Distillation

- Purification
- Characterization



Practical Considerations

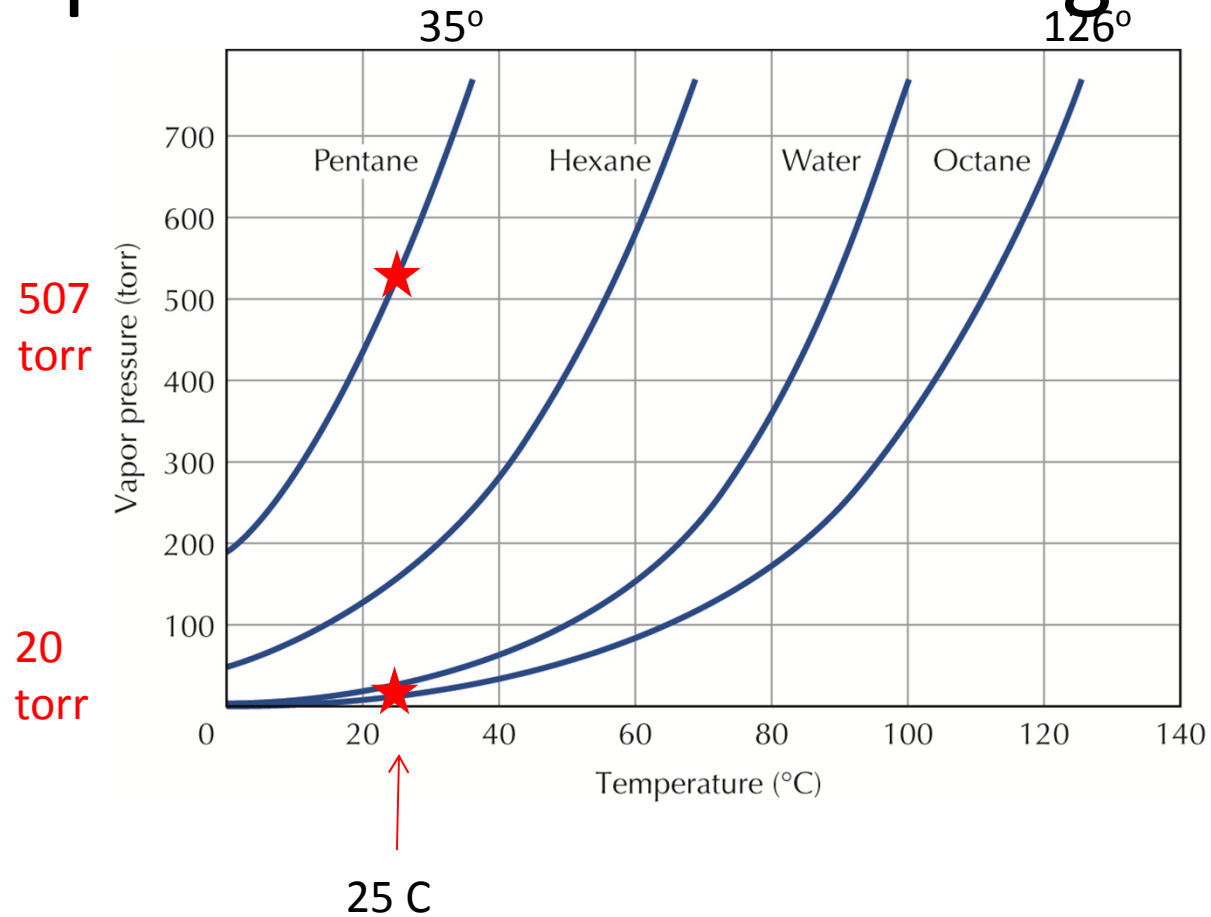
- Clamps
- Thermometer placement
- Heating
- Water in/out
- Sealed containers



What's wrong here?

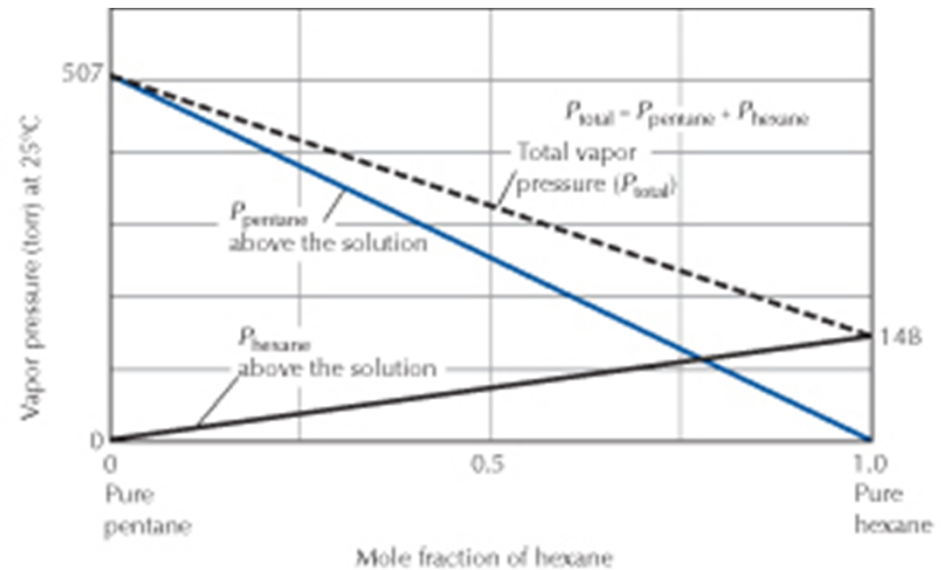
Theory:

Vapor Pressure and Boiling Point



Boiling Mixtures

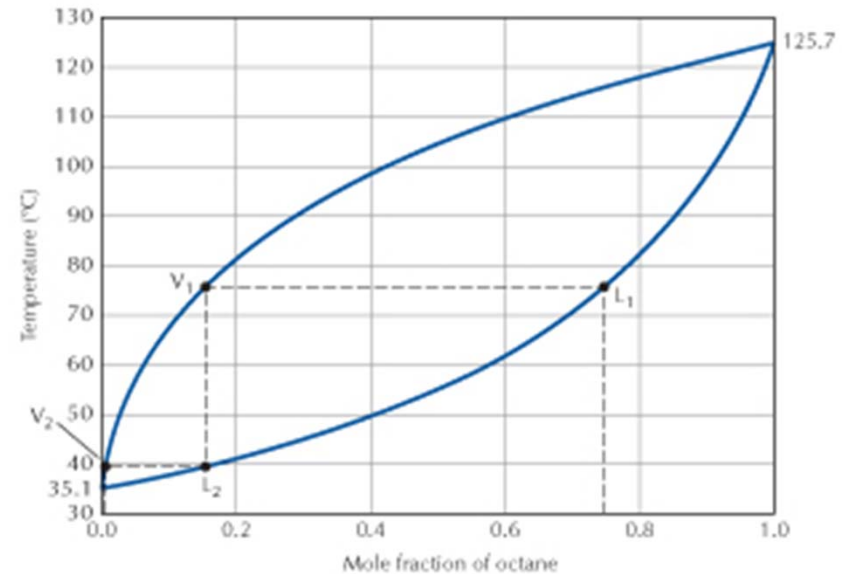
- Ideal liquid
- Little interaction between molecules
- Partial pressures add up to total pressure



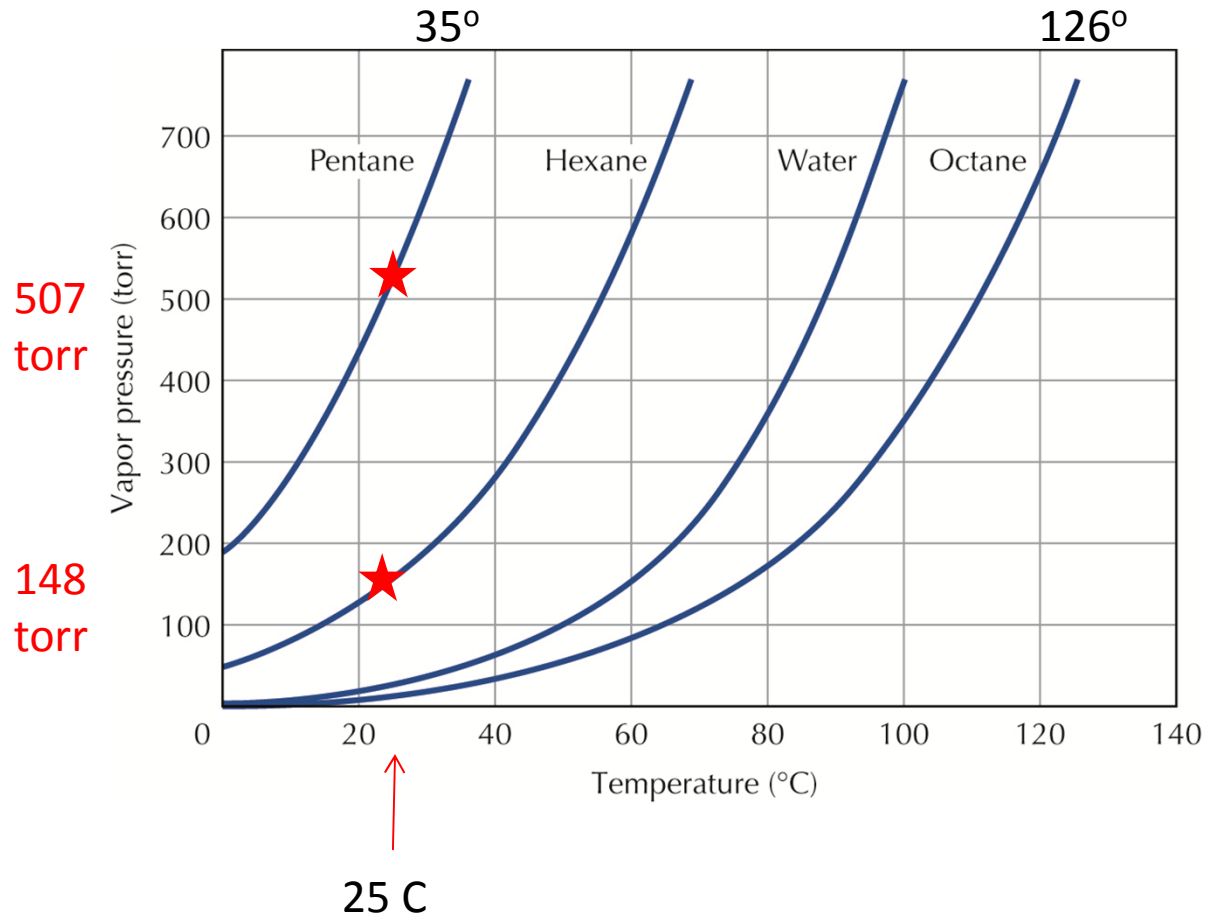
This is for Pentane/Hexane;
Redraw for pentane/octane

Separation of Pentane and Octane

- Starting with 75% octane/
25% pentane
 - L_1 : 75/25 mixture boils at 77°C
 - V_1 : at same temperature, composition is 15%/85%
 - L_2 : liquid condenses on glass as 15/85 mixture
 - V_2 : second vaporization is again enriched: 99% pure pentane

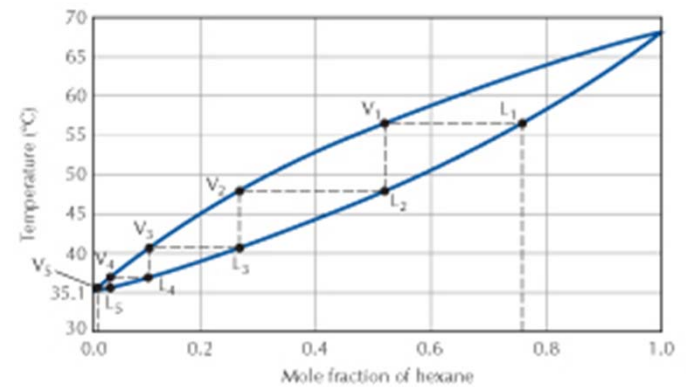
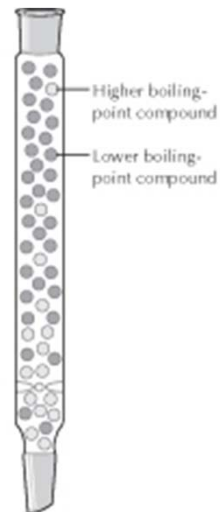
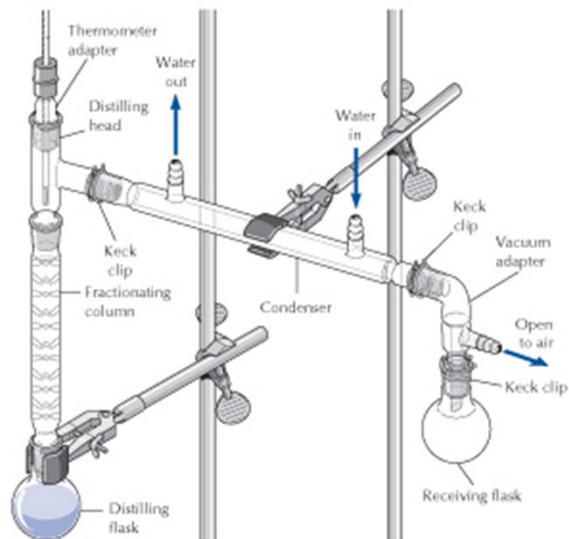


Separation of Pentane/Hexane

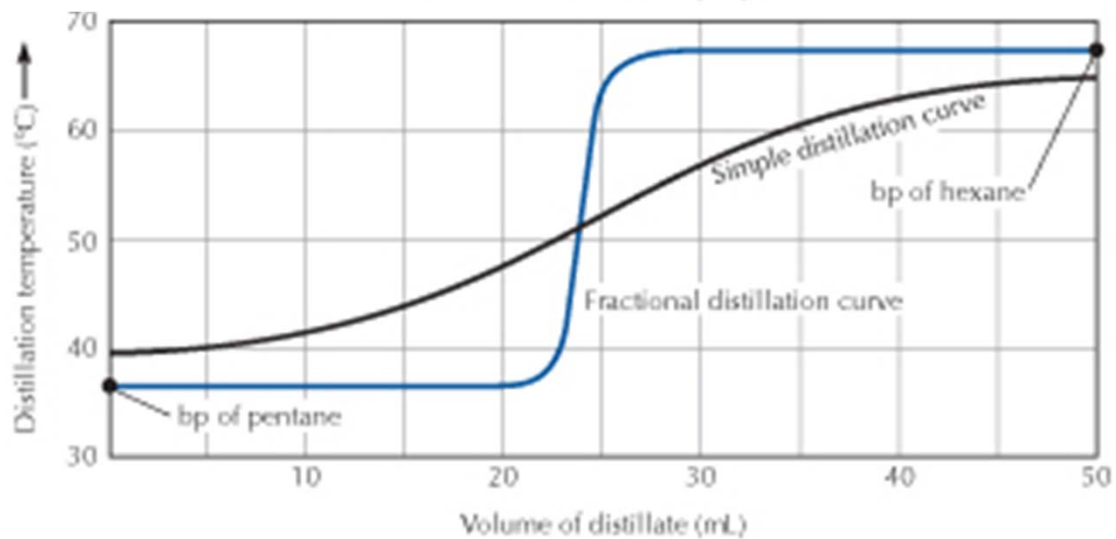
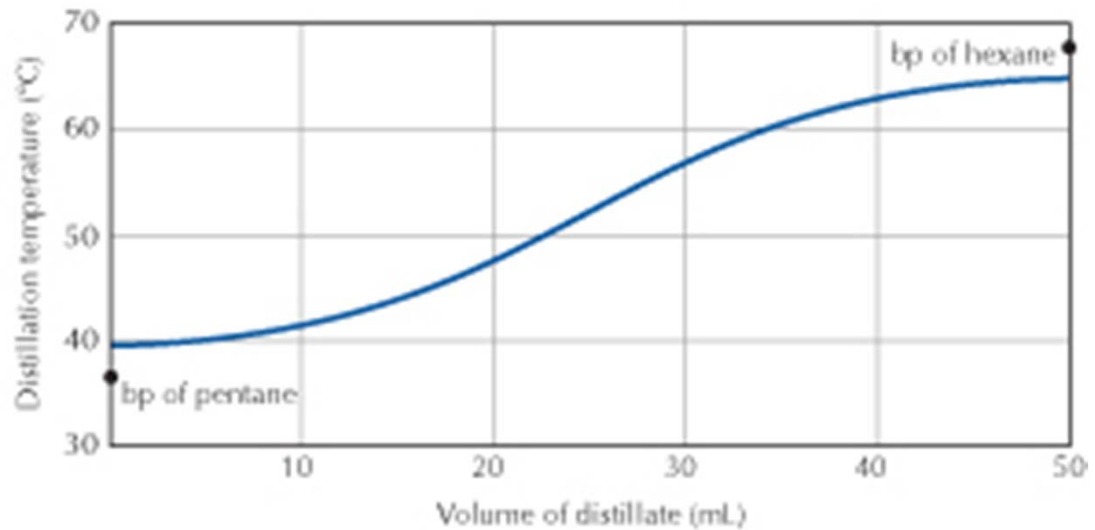


Fractional Distillation

- Separation of pentane and hexane
- Theoretical plates

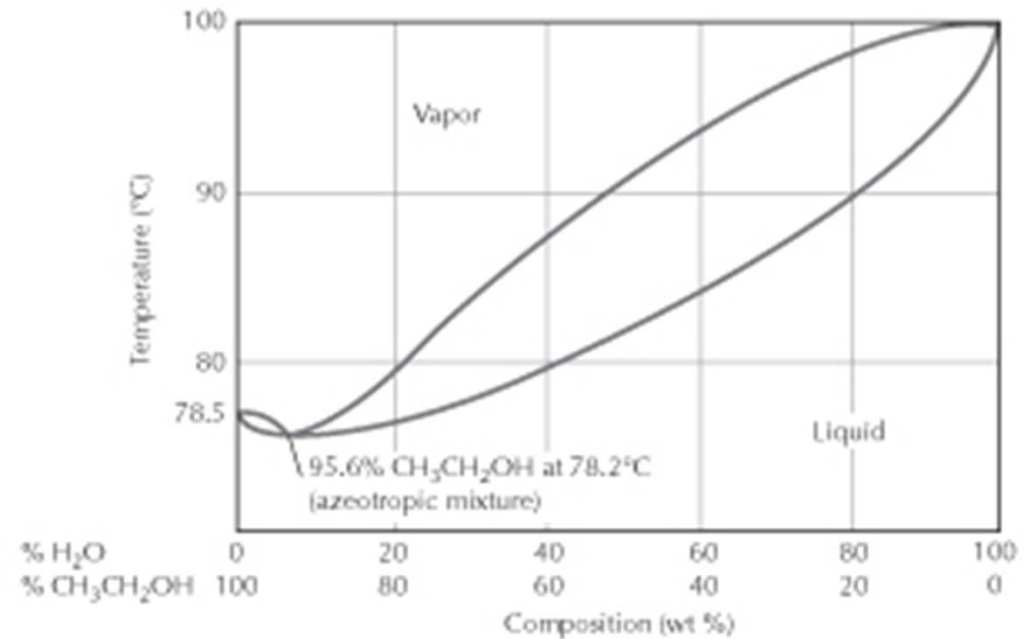


Simple vs Fractional Distillation



Azeotropes

- Constant boiling mixtures
- Non-ideal solution (H-bonding)
- Problem
- Useful: co-distillation



Writing an Introduction

- Purposes
 - Gives background
 - State of the field
 - Importance of work
 - Explain where you are going with your writing
 - Why is your contribution valuable?
 - What do you plan to contribute?
- My expectations for you
 - Show that you understand your purpose
 - Given articles, pull out relevant background

Pointers

- Before you write your introduction, ask yourself why you are doing what you are doing!
- Clearly present your thesis
- To write an effective introduction, write a compelling case with reference to others
- Do others agree with you?
- What have others done? Why?