Chemical Thermodynamics
Phase diagram, P-X

- Ideal solution of benzene and toluene.

- Mole fraction of toluene in the vapor phase?
Phase Diagram, $T_b - X$

- Vapor phase is enriched in more volatile component.
- Basis of fractional distillation.

- What is the composition of liquid that boils at 95°C or 368 K.
Fractional Distillation

Doesn’t take many steps before the condensate is effectively pure.
Thermodynamics

- Other thermodynamics properties of mixing solutions.
- $\Delta_{\text{mix}} G$: 
Thermodynamics

- Other thermodynamics properties of mixing solutions.

\[ \Delta_{\text{mix}}S: \]

\[ \Delta_{\text{mix}}H: \]