Announcements

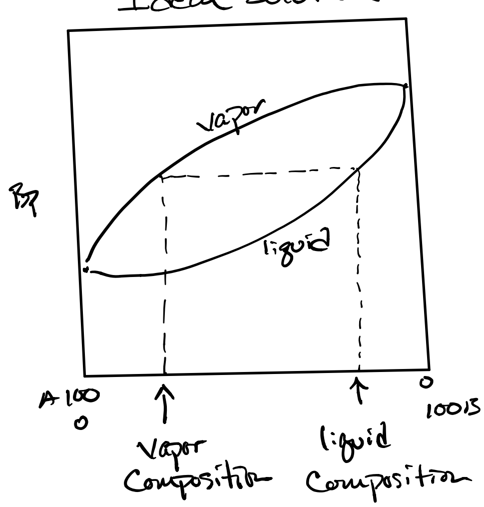
New website chemed.study

https://chemed.study

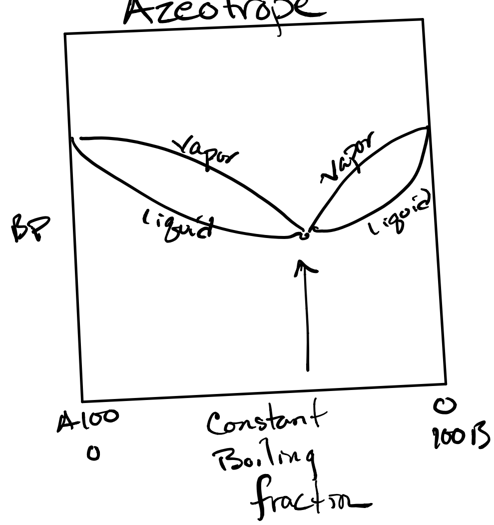
— Time stamps for different Subjects

Azeotrope → Non ideal Solutions

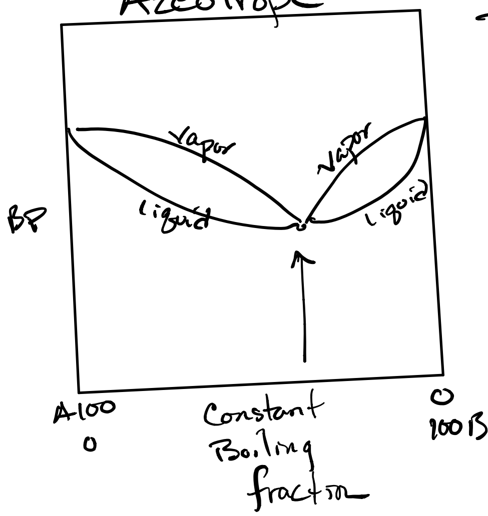
Ideal Solution



Azeotrope



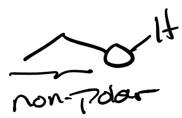
Azeotrope



Due to some repulsive forces between the two materials A)(B Results in increased vapor pressure for the mixture

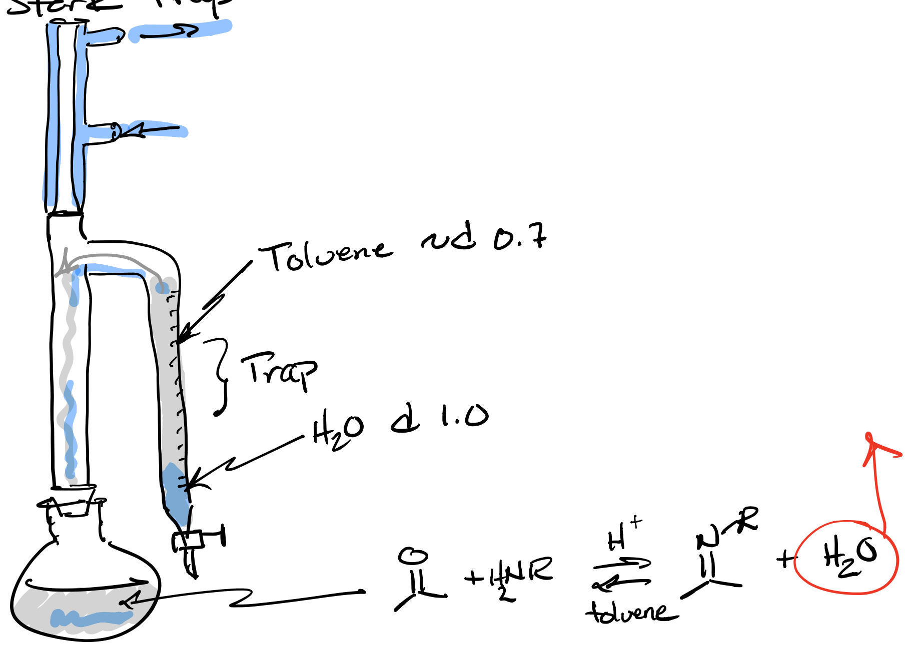
Azeotrope Examples

Components			Bp Azeotrope
	EtOH	+ H_2O	78.17 °C
%	95.6%	4.4%	

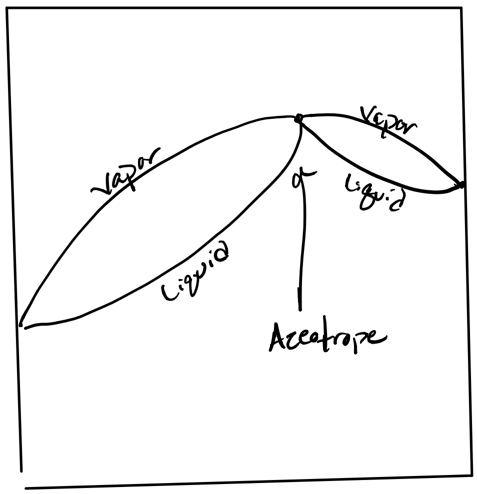


 toluene 98%	+ H_2O 2%	98 °C

Dean-Stark Trap



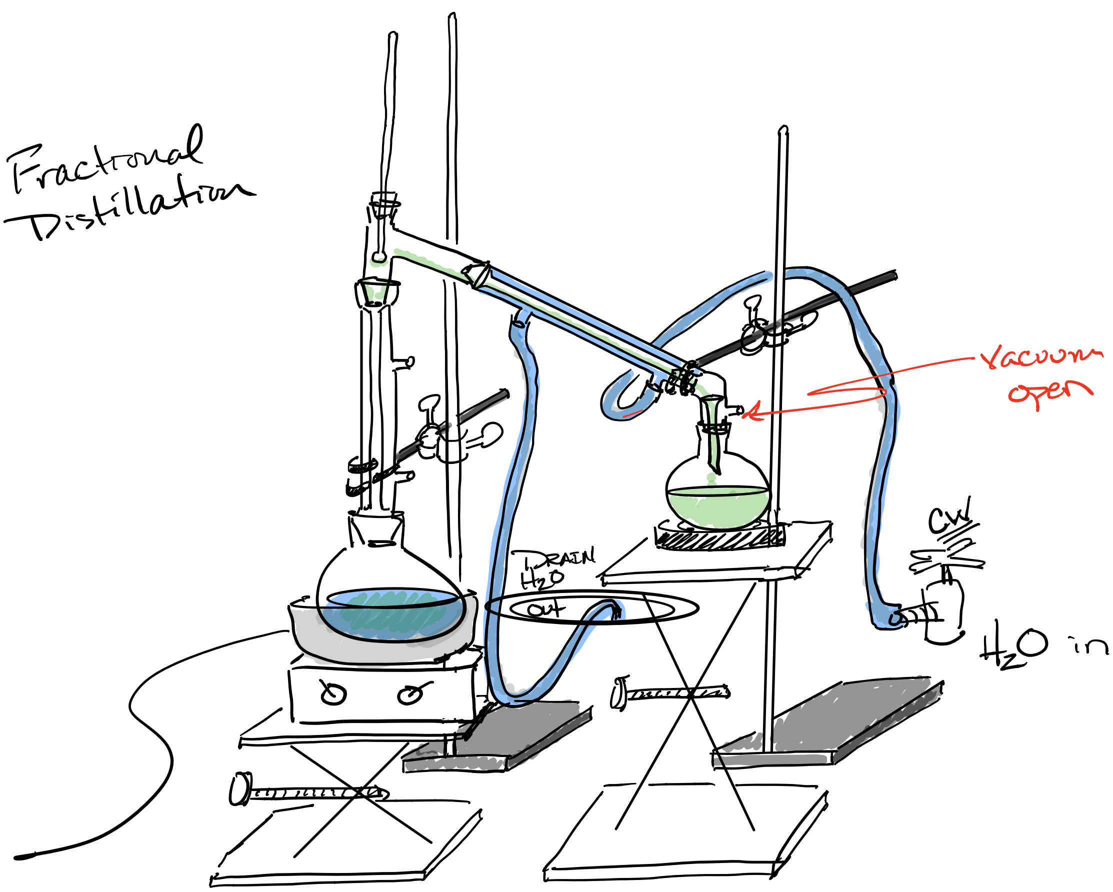
Azeotrope w/ Attractive forces



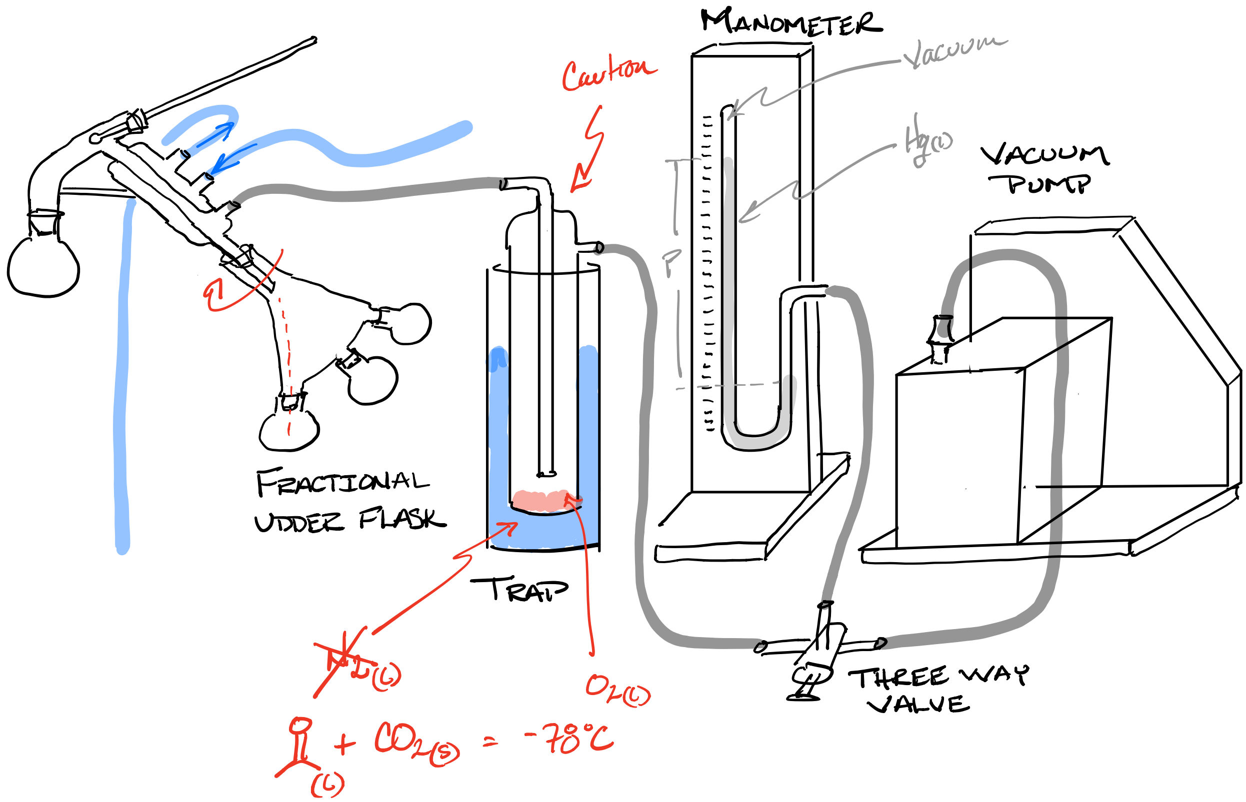
Resulting from increased IMF that decrease the vapor pressure

Acetone 20%	$CHCl_3$ Chloroform 80%	64.7°C

Fractional Distillation

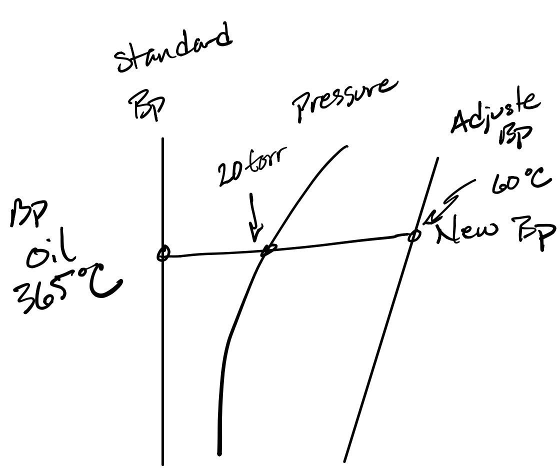


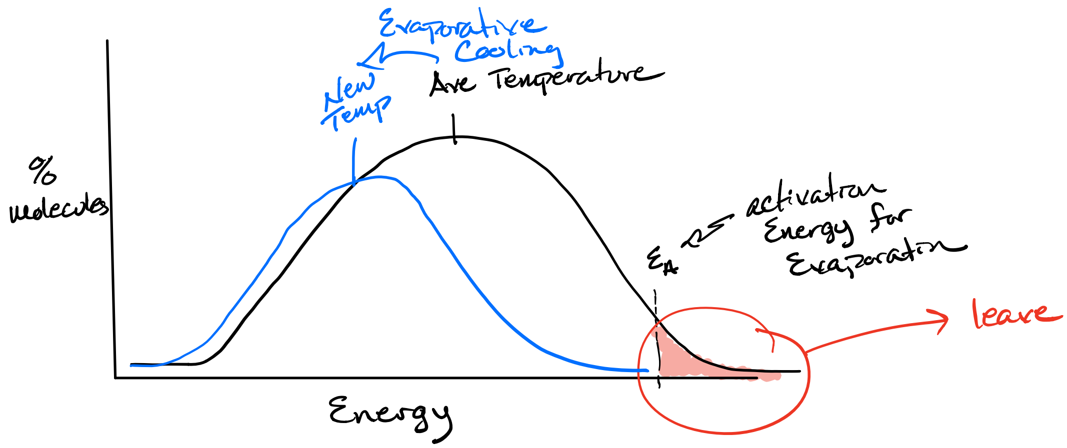
Simple (Short Column) Vacuum Distillation



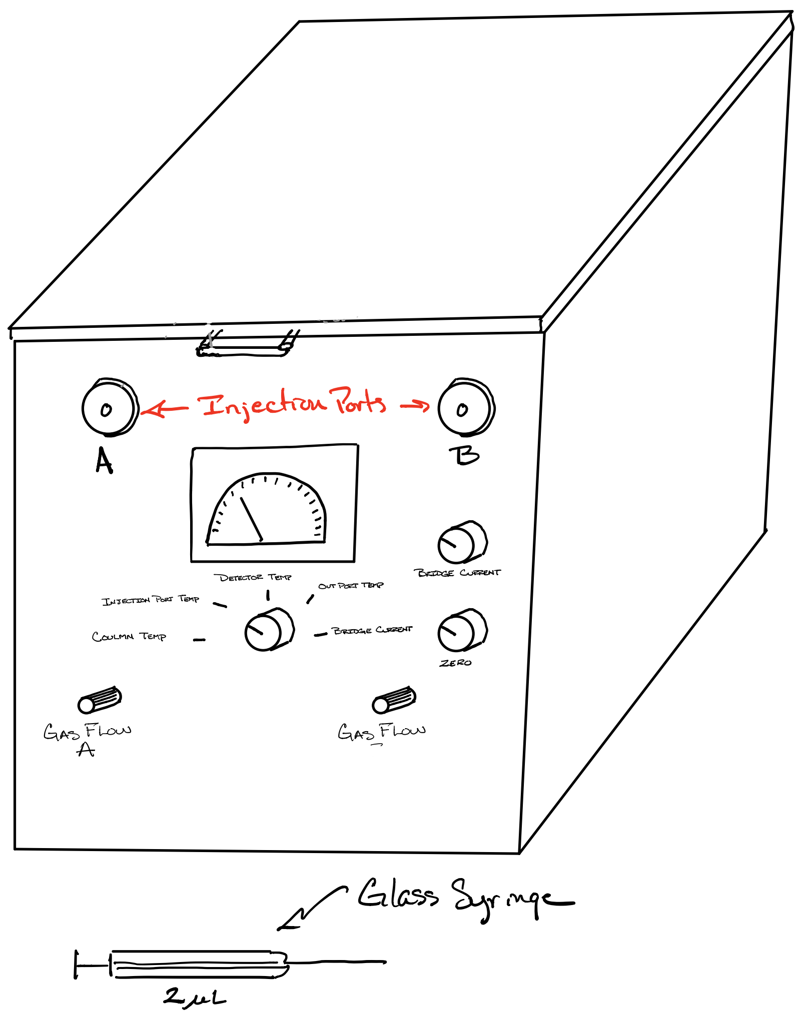
1 atm = 760 mmHg = 760 torr

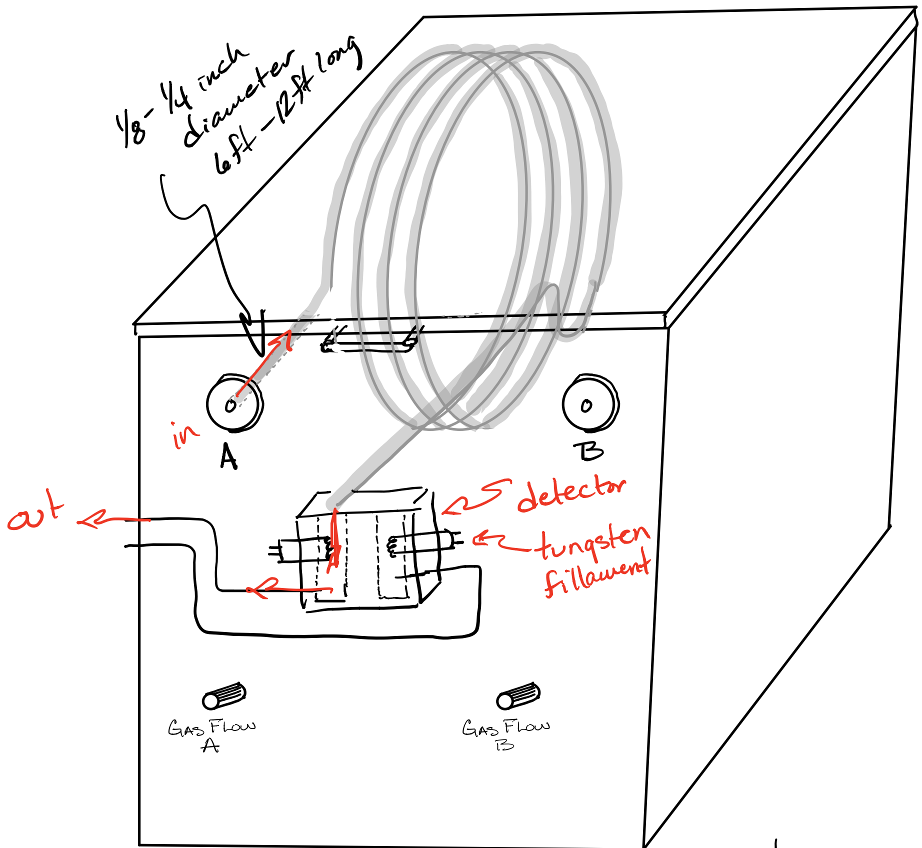
Vacuum = 10 m torr

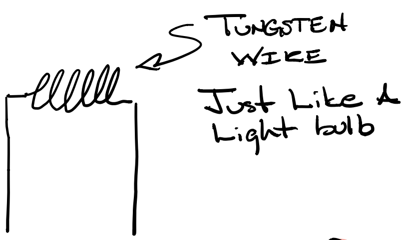


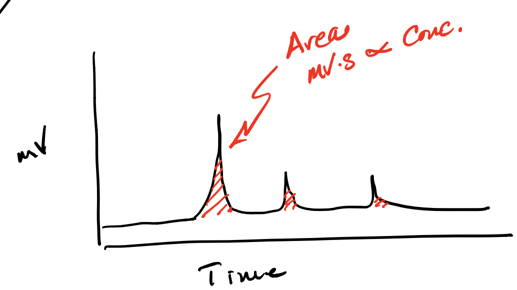


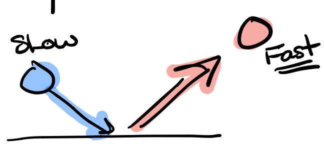
Gas Chromatography (GC)











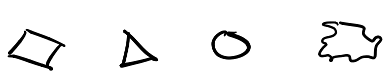
Molecule Steals Heat from wire

Wire cools down

⇒ Conductance ∝ Temperature

⇒ ΔTemperature = ΔmV Signal

Problem



Different molecular shapes steal different amounts of energy

Conc ∝ ΔmV but not equal to ΔmV

Responce Factors

$$\text{Conc.} \times R_f = \Delta mV$$

$$\text{Conc} = \frac{\Delta mV}{R_f}$$

$$y = mx + b$$

$$\Delta mV = R_f \,\text{Conc} + 0$$

Beers Law Plot