Vapor Pressure and Equilibrium

Open Container (vapor escaping) evaporation

Closed Container (vapor accumulating)

Closed Container (vapor at equilibrium)

Rate of Vaporization $\gg$ Rate of Condensation

Rate of Vaporization $\gg$ Rate of Condensation

Rate of Vaporization $=\approx$ Rate of Condensation

Vapor Pressure: the partial pressure of the vapor of a substance, above the surface of that substance, at equilibrium

- Vapor Pressure depends on the intermolecular forces between the particles and the temperature
  - $\equiv\approx$ A substance with stonger IMFs has a lower VP at the same temperature
  - $\equiv\equiv$ The higher the temperature, the higher the VP (more particles have energy to overcome IMFs)

Equilibrium: the system does not change with time

- When the rates of the forward and reverse processes (vaporization & condensation) are equal, there is no net change in the amount of vapor or liquid, therefore the system is in dynamic equilibrium.