

Kinetic Theory (cont.)

Temp.

- affects the speed of particles
- $\uparrow T \quad \uparrow \text{speed} \quad \uparrow P$

units

Kelvin
(K)

$$K = 273 + C$$

$$\text{Absolute zero} = -273^{\circ}\text{C}$$

- is a measure of the average Kinetic Energy of the particles

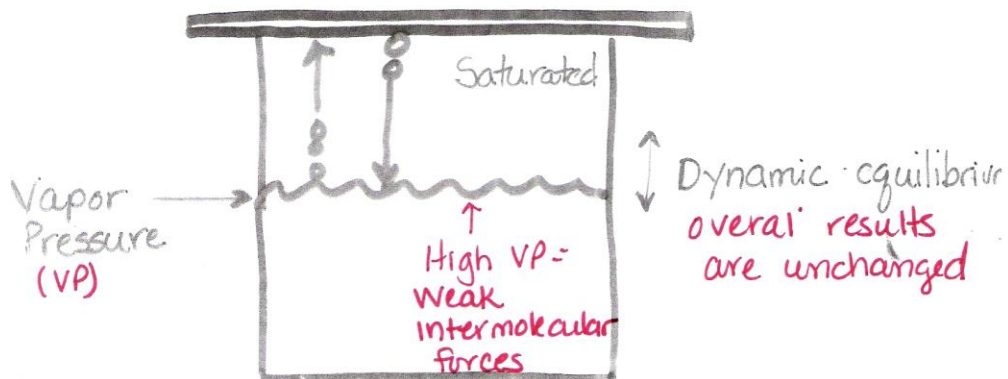
↙

$$KE = \frac{mv^2}{2}$$

- function of mass (m) and velocity (v)
- $\downarrow m \quad \uparrow v \quad KE \text{ stays the same}$

- Energy flows from Hot T to Cold T
(hi Energy) (low E)

Boiling Point (BP)	• Temp where VP = atmospheric P. • $\uparrow T$, $\uparrow KE$, $\uparrow VP$
volatile	boils at low Temp (high VP)
Sublimation	• solid goes directly to gas • high VP
deposition	• gas goes directly to solid
Liquifacation	• Condensation of a substance that is normally a gas at room T. • cool, $\downarrow T$, $\downarrow KE$
Critical T (T_c)	• Temp above which no amount of pressure will cause a gas to liquify



Vocab	Solid → Liquid → Vapor Low E High E
Saturated	holds all the vapor it can at that Temp + pressure
Vapor Pressure (VP)	• The pressure exerted by a vapor with a liquid at equilibrium • <u>High VP</u> has <u>weak</u> intermolecular forces • <u>Low VP</u> has <u>strong</u> " • ↑T, ↑KE, ↑VP
Melting Point (MP)	• VP of solid = VP of liquid • Low MP = weak intermolecular forces • High MP = strong "