**Spring Final Formulas**



Unit 8 Stoichiometry

$\% composition= \frac{part}{whole}x 100$ $n= \frac{mol water}{mol salt}$

1 mol = 22.4 L $\% yield= \frac{actual}{theoretical}x 100$

1 mol = 6.02 x 1023 particles

 volume A volume B

 Mole A Mole B

Mass A particles A mass B particle B

Unit 10 Gas Laws

Conversion given: 1 atm = 760 mmHg = 101.3 kPa K = 0C +273

Ptotal = Pa + Pb + Pc + ….. PV = nRT R = 0.0821 L atm/ K mol

$\frac{P\_{1}V\_{1}}{n\_{1}T\_{1}}= \frac{P\_{2}V\_{2}}{n\_{2}T\_{2}}$ $\frac{r\_{1}}{r\_{2}}= \sqrt{\frac{M\_{2}}{M\_{1}}}$

$P\_{1}V\_{1}=P\_{2}V\_{2}$ $\frac{V\_{1}}{T\_{1}}= \frac{V\_{2}}{T\_{2}}$ $\frac{P\_{1}}{T\_{1}}= \frac{P\_{2}}{T\_{2}}$ $\frac{V\_{1}}{n\_{1}}= \frac{V\_{2}}{n\_{2}}$

Unit 11 Thermochemistry

*The following information is applicable for water:*

Hf = 334 J/g Csolid = 2.06 J/gºC

Hv = 2260 J/g Cliquid = 4.18 J/gºC

Cgas  = 2.02 J/gºC

1 atm = 101.3 kPa = 760 mmHg = 760 torr

Q = mCΔT Q=mHf Q=mHv

ΔH = Σ P- Σ R

 Unit 12 Solutions

Molarity: $M=\frac{mol}{L}$ Molality: $m= \frac{mol}{kg}$

M1V1 = M2V2 Vwater = V2 – V1

% mass = $\frac{g\_{solute}}{g\_{solution}} x 100\%$ gsolution =gsolute + gsolvent

Unit 13 Acids/ Bases

pH = -log [H+] [H+] = 10-pH (H+)MAVA = (OH-)MBVB

 pOH = -log [OH-] [OH-] = 10-pOH

 pH + pOH = 14 [H+][OH-] = 1 x 10-14