Student Name: ______________________ Date: _____________________

Chemistry 40S

Formula and Constant Reference Sheet

$K_w = [H_30^+]\,[OH^-]$

$c = 3.00 \times 10^8$ m/s

$\frac{Rate_A}{Rate_B} = \sqrt{\frac{\text{molar mass}_B}{\text{molar mass}_A}}$

$C = n/v$

$h = 6.626 \times 10^{-34}$ Js

$\text{density} = \frac{\text{mass}}{\text{volume}}$

$pOH = -\log[OH^-]$

$\% \text{ dissociation} = \frac{[H_3O^+]}{[HA]} \times 100\ \%$

$K = °C + 273$

$K_a = \frac{[H_3O^+][A^-]}{[HA]}$

$[H^+] = 10^{-pH}$

$v = c/\lambda$

$K_w = 1.0 \times 10^{-14}$

$K_B = \frac{[BH^+][OH^-]}{[HB]}$

$M = \frac{Mol}{L}$

$\% \text{ dissociation} = \frac{[OH-]}{[BOH]} \times 100\ \%$

$°C = K - 273$

$K_{sp} = [ion^+]\,[ion^-]$

$\lambda = c/v$

$\text{percent error} = \frac{\text{error}}{\text{accepted value}} \times 100$

$pH = -\log\,[H^+]$

$Q_{sp} = [ion^+]\,[ion^-]$

$E = hv$

$n = \frac{m}{M}$

$M = \frac{moles}{L}$

$K_{eq} = \frac{[C]^c\,[D]^d}{[A]^a\,[B]^b}$

$[OH-] = 10^{-pOH}$

$M_1V_1 = M_2V_2$

$Rate = k[A]^m[B]^n$

$\frac{S_1}{P_1} = \frac{S_2}{P_2}$

$Rate = \frac{\Delta[reactant]}{\Delta t}$

$C_1V_1 = C_2V_2$

Molar volume: 22.4 mole/L

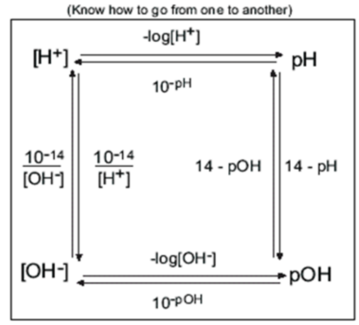
$M = \frac{mRT}{PV}$

$\% \text{ yield} = \frac{\text{actual yield}}{\text{theoretical yield}} \times 100$

$\frac{P_1}{T_1} = \frac{P_2}{T_2}$

$K_w = 1.0 \times 10^{14}$

(Know how to go from one to another)



$PV = nRT$

$\% \text{ by mass} = \frac{\text{mass element}}{\text{mass compound}} \times 100$

$\frac{V_1}{T_1} = \frac{V_2}{T_2}$

$P_1V_1 = P_2V_2$

$efu = \frac{mm}{efm}$

$D = \frac{MP}{RT}$

$\lambda = \frac{h}{mv}$

$P_{total} = P_1 + P_2 + P_3 \ldots$

$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$

$\text{Mass}_{\text{reactants}} = \text{Mass}_{\text{products}}$

$KE = ½\, mv^2$

$\text{Percent by mass} = \frac{\text{mass of solute}}{\text{mass of solution}} \times 100$

$\text{Percent by volume} = \frac{\text{volume of solute}}{\text{volume of solution}} \times 100$

Avagadro's number: 6.02×10^{23} representative particles/mole

$pH + pOH = 14.00$

$\Delta E = E_{\text{higher-energy orbit}} - E_{\text{lower-energy orbit}}$

$R = 0.0821 \frac{L \bullet atm}{mol \bullet K} = 8.314 \frac{L \bullet kPa}{mol \bullet K} = 62.4 \frac{L \bullet mmHg}{mol \bullet K}$

$\frac{V_1}{n_1} = \frac{V_2}{n_2}$

760 mmHg = 1.0 atm = 760 torr = 101.3 kPa = 14.74 psi