

This years Chem Formulas

1. % Abundance, Avg. atomic Mass

$\# \# \% \times \text{Mass} \# + \dots$
 move decimal twice to left
 * DO NOT Add & divide!

2. % error

$$\frac{|\# - \#|}{\text{accepted}} \times 100 \quad \# \text{ Always positive}$$

3. Molar Mass:

$$\frac{\text{add atomic mass up } g}{1 \text{ mole}}$$

4. % Composition:

$$\frac{\text{MM of element} \times \text{the \# of that element}}{\text{MM of Compound}}$$

5. empirical formula:

$$\frac{\% \rightarrow \# g}{\text{MM of 1 atom } g} \Bigg| \frac{1 \text{ mole}}{\text{MM of 1 atom } g} = \# \begin{matrix} 4 \text{ decimals} \\ \text{smallest} \\ \text{w/ } \downarrow \end{matrix}$$

$$\frac{\% \rightarrow \# g}{\text{MM of 1 atom } g} \Bigg| \frac{1 \text{ mole}}{\text{MM of 1 atom } g} = \# \begin{matrix} 4 \text{ decimals} \\ \text{smallest} \\ \text{w/ } \downarrow \end{matrix}$$

Whole #s become subscripts

6. Molecular Formula:

$$\frac{\text{MM molecular (given to you)}}{\text{MM empirical (given formula have to determine)}} = \text{Whole Value}$$

Value multiply subscripts in empirical

$$7. \% \text{ Yield} = \frac{\text{Actual (lab/textbook determined)}}{\text{theoretical (stoich determined)}} \times 100$$

8) ~~POH~~
Molarity = you see #M change it to $\frac{\text{mole}}{\text{L}}$
6M \rightarrow $\frac{6 \text{ mole}}{\text{L}}$

only time you don't is if there are 2M or 2V then use

$$9) M_1 V_1 = M_2 V_2$$

$$10) \text{pH} = -\log [\text{H}^+]$$

$$11) \text{pOH} = -\log [\text{OH}^-] \quad \left. \begin{array}{l} 10 \\ 11 \end{array} \right\} \text{pH} + \text{pOH} = 14$$

$$13) PV = nRT$$

$$R = \frac{0.0821 \text{ L} \cdot \text{atm}}{\text{mole} \cdot \text{K}}$$

A $\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$ same as $\frac{T_1}{P_1 V_1} = \frac{T_2}{P_2 V_2}$

B $P_1 V_1 = P_2 V_2$

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

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

14) Dalton's Law

$$P_T = P_1 + P_2 + P_3 + \dots$$

15) $Q = m C \Delta T$