Mole Quiz Warm Up

You need your PT & calculator.

What is the % comp of Br in $MgBr_2$?

Br: $\frac{2(79.90g)}{184.11g}$ x100= 86.80% Br

How many molecules are in 5.00g H_2O?

$$\left(\frac{5.00\text{g } H_2O}{1}\right)\left(\frac{1 \text{ mol } H_2O}{18.02\text{g } H_2O}\right)\left(\frac{6.02\text{x}10^{23}\text{molecules } H_2O}{1 \text{ mol } H_2O}\right)$$

$$= \boxed{1.67\text{x}10^{23} \text{ molecules } H_2O}$$

How many atoms of Cl in 12.5g $BaCl_2$?

$$\left(\frac{12.5\text{g } BaCl_2}{1}\right)\left(\frac{1\text{mol } BaCl_2}{208.23\text{g}BaCl_2}\right)\left(\frac{6.02\text{x}10^{23}\text{f.u. } BaCl_2}{1\text{ mol } BaCl_2}\right)\left(\frac{2\text{ atoms Cl}}{1\text{ f.u. } BaCl_2}\right)\left(\frac{1\text{ mol Cl}}{}\right)$$

$$= 7.23\text{x}10^{22}\text{ atoms}$$

Find the <u>empirical formula</u> for a compound that is 88.8% copper and 11.2% oxygen and <u>name</u> it.

$$\left(\frac{88.8\text{g Cu}}{1}\right)\left(\frac{1\text{ mol Cu}}{63.55\text{g Cu}}\right) = \frac{1.40\text{ mol Cu}}{0.700} = 2\text{ mol Cu}$$

$$\left(\frac{11.2\text{g O}}{1}\right)\left(\frac{1\text{ mol O}}{16.00\text{g O}}\right) = \frac{0.700\text{ mol Cu}}{0.700} = 1\text{ mol O}$$

Cu_2O
copper(I) oxide

Naphthalene is a carbon and hydrogen containing compound often used in moth balls. The empirical formula is $\underline{C_5H_4}$ and its molar mass is $\underline{128.16\ g/mol}$. Find the molecular formula.

$C_5H_4 = 64.09\ g/mol$

$$\frac{128.16\ g/mol}{64.09\ g/mol} = 2$$

$$2(C_5H_4) = C_{10}H_8$$