Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Topic 2/3 Questions and Review

**Naming Practice**

Name:

Na2SO4 \_\_\_\_\_Sodium Sulfate\_ \_\_\_\_\_\_\_\_\_\_ Ca(C2H3O2)2 \_\_\_Calcium Acetate\_\_\_\_\_\_\_\_\_\_\_)\_\_\_\_

P2O5 \_Diphosphorous Pentaoxide\_\_\_\_\_\_\_ H2CO3 \_\_\_\_\_\_Carbonic Acid\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NH4Cl\_\_Ammonium Chloride \_\_\_\_\_\_\_\_\_\_\_ FePO4 \_\_\_Iron(III)phosphate\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CCl4 \_\_Carbon tetrachloride \_\_\_\_\_\_\_\_\_\_\_ CuHCO3  \_\_Copper(I)Bicarbonate\_\_\_\_\_\_\_\_\_\_\_\_

CoCrO4 \_\_Cobalt(II)Chromate\_\_\_\_\_\_\_\_\_\_\_\_\_ ClO3 \_\_Chlorine triiodide\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Write the formulas:**

Acetic Acid \_\_\_HC2H3O2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Potassium Carbonate \_\_\_\_\_\_\_\_\_K2CO3\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Barium Oxide \_\_\_\_\_\_\_BaO\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Dinitrogen Pentoxide \_\_\_\_\_\_\_N2O5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HydroIodic Acid \_\_\_\_\_\_\_\_\_\_HI\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Lithium Bromide \_\_\_\_\_\_\_\_LiBr\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Manganese (IV) oxide \_\_\_\_\_\_\_\_MnO2\_\_\_\_\_\_\_\_ Lead (II) Phosphide \_\_\_\_\_\_\_\_\_Pb3P2\_\_\_\_\_\_\_\_\_\_\_\_\_

Zinc fluoride \_\_\_\_\_\_\_\_\_\_\_ZnF2\_\_\_\_\_\_\_\_\_\_\_ Sulfur Dioxide \_\_\_\_\_\_\_\_\_\_SO2\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Reactions: (Write and balance the equation)**

Hydrogen gas plus chlorine gas yields

H2 + Cl2 → 2HCl

Aluminum plus hydrochloric acid yield

2Al + 6HCl → 2AlCl3 + 3H2

Potassium reacts sodium chloride to produce

K + NaCl → KCl + Na

The complete combustion of liquid butane (C4H10)

2C4H10 + 13O2 → 8CO2 + 10H2O

Sodium acetate and sulfuric acid produce

2NaC2H3O2 + H2SO4 →2HC2H3O2 + Na2SO4  NR

**Mole and % Composition:**

115.9 g of aluminum sulfate =

a) ? moles, 0.3388 moles

b) ? formula units, 2.040x1023F.U.

c) % Al, S, O, 15.77% Al, 28.11% S, 56.12% O

d) ? g Al in 115.9g sample 18.28g Al

9.08 x 1023 molecules of N2(g) =

a) ? moles, 1.508 moles

b) ? liters at STP, 33.78L

c) # of N atoms? 1.816x1024atoms

**Stoichiometry**

Use the following equation to answer stoichiometry questions 1-3: 2K(s) + 2H2O(l) → 2KOH(aq) + H2 (g)

1. How many grams of potassium hydroxide will be produced if 13.2g of potassium is reacted with excess water?

18.9g KOH

1. How many molecules of water reacted if 2.3L of hydrogen gas was created at STP?

1.24x1023molecules of water

1. How many grams of potassium is needed to fully react with 53.5mL of water?

116g K

In a combustion reaction, 30.0 L of ethane gas at STP, C2H6, is reacted with excess oxygen gas:

1. What is the balanced equation?

2C2H6 + 7O2 → 4CO2 + 6H2O

1. What is the theoretical yield (# grams) of all products? (How much of each substance will you make?) ***117.9gCO2, 72.4g H2O***

In a single replacement reaction, 22.93 g of iron are reacted with an excess of lead (II) phosphate to produce and iron (III) salt.

1. What is the balanced equation?

2Fe + Pb3(PO4)2 → 2FePO4 + 3Pb

1. What is the theoretical yield (# grams) of all products? ***61.91gFePO4, 127.6gPb***