

Unit 4: Ionic Formulas Introduction and Practice: Chapter 6, Level 3**Page 1****Name _____ Mod _____**

1. Write the formula and the name for the ionic compounds made from these ions: (p. 149-156)
(* need a Roman numeral)

a. Na^+ and NO_3^- _____

b. Li^+ and SO_4^{2-} _____

c. NH_4^+ and Br^- _____

*d. Mn^{+2} and I^- _____

e. Mg^{+2} and NO_3^- _____

f. Sr^{+2} and CO_3^{2-} _____

g. NH_4^+ and OH^- _____

*h. Cu^+ and Cl^- _____

*i. Fe^{+3} and OH^- _____

j. Al^{+3} and CO_3^{2-} _____

k. K^+ and PO_4^{3-} _____

m. Ba^{+2} and SO_4^{2-} _____

2. Write the **correct formula** for these ionic compounds. You must write the formula for the ions first, then **criss-cross** to get the correct formula for the compound.

a. calcium nitrate _____

e. Copper (II) sulfate _____

b. aluminum hydroxide _____

f. lithium iodide _____

c. cobalt (III) chloride _____

g. Iron (II) sulfide _____

d. magnesium phosphate _____

h. ammonium chloride _____

e. sodium carbonate _____

j. Tin(IV) oxide _____

3. Name these **ionic** compounds. (NO Prefixes, * need Roman numerals)

a. CaI_2 _____f. K_2CrO_4 _____b. MgF_2 _____g. $\text{Ba}(\text{NO}_3)_2$ _____c. LiNO_2 _____*h. Cu_2O _____d. NH_4OH _____*i. FeSO_3 _____e. KHCO_3 _____*j. MnCl_2 _____

Chemistry Worksheet : Formula writing and names:**Page 2**

1. Write Formulas and Names for compounds made of these pairs of ions. (*= Roman num)

	Formula	Name
a. Ag^+ , O^{2-}	_____	_____
*b. Co^{+2} , Cl^-	_____	_____
c. Al^{+3} , OH^-	_____	_____
d. NH_4^+ , Cl^-	_____	_____
e. Ba^{+2} , PO_4^{-3}	_____	_____
*f. Fe^{+3} , Br^-	_____	_____
g. Ca^{+2} , SO_4^{-2}	_____	_____

2. Give the formula for these ionic compounds. (Write the IONS, then CRISS-CROSS!!!)

a. Potassium bromide	_____	f. Iron(III) hydroxide	_____
b. Tin(IV) chloride	_____	g. sodium nitrate	_____
c. Sodium carbonate	_____	h. calcium nitride	_____
d. Aluminum sulfate	_____	i. silver iodide	_____
e. Cobalt(II) sulfide	_____	j. potassium permanganate	_____

3. Give the formula or name for these *binary molecular* compounds (Don't criss-cross. Use prefixes, mono, di, tri, etc.) (p. 158-159)

a. N_2O	_____	e. Carbon disulfide	_____
b. PCl_3	_____	f. diphosphorus trioxide	_____
c. SO_3	_____	g. sulfur hexafluoride	_____
d. CCl_4	_____	h. dichlorine heptoxide	_____
e. N_2O_5	_____	i. carbon monoxide	_____

4. Give the formula for these acids : (See Handout) Name these compounds as *acids*

a. Hydroiodic acid	_____	d. H_2CO_3	_____
b. Nitrous acid	_____	e. HClO_2	_____
c. Phosphoric acid	_____	f. HF	_____
g. The palmitate ion is $\text{C}_{16}\text{H}_{31}\text{O}_2^-$. What's the formula for palmitic acid?	_____		
h. The tartrate ion is $\text{C}_4\text{H}_4\text{O}_6^{-2}$. What is the formula for tartaric acid?	_____		
i. Citric acid is $\text{H}_3\text{C}_6\text{H}_5\text{O}_7$. What's the formula for Calcium citrate?	_____		

Final Worksheet: Formulas and names : Name _____ page 3

1. Write formulas and names for compounds composed of these pairs of ions. *Do Criss-cross, don't use prefixes, do use Roman numerals for metals with more than one charge.*

- a. $\text{Li}^+, \text{S}^{2-}$ _____
- b. $\text{Ca}^{+2}, \text{N}^{-3}$ _____
- c. $\text{Al}^{+3}, \text{NO}_3^-$ _____
- d. $\text{Co}^{+2}, \text{PO}_4^{-3}$ _____
- e. $\text{Pb}^{+2}, \text{Cl}^-$ _____
- f. $\text{Mn}^{+3}, \text{OH}^-$ _____

2. List the type (**Ionic or Molecular**) and give the *formula* for each compound. (p. 161-163)

Ionic (Start with metal or ammonium, have no prefixes in name): Write Ions, then criss-cross

May be: **Binary ionic** (2 elements: metal + non-metal) or Contain a **Polyatomic ion**

Binary Molecular (have prefixes, 2 non-metals, end in -ide). Don't criss-cross.

	Type (Ionic or molecular)	Formula
a. Nitrogen dioxide	_____	_____
b. Tin(II) hydroxide	_____	_____
c. Sodium phosphate	_____	_____
d. Potassium carbonate	_____	_____
e. Chromium(III) fluoride	_____	_____
f. Disulfur trioxide	_____	_____
g. Iron(III) oxide	_____	_____
h. Calcium acetate	_____	_____

3. List the Type (**Ionic or Molecular**) and Name for each compound. (p. 161-163):

Ionic : (Start with a Metal or NH_4^+): Don't use prefixes, Use a Roman numeral for *metals* with more than 1 charge.

May be: **Binary Ionic** (2 elements, metal + non-metal): Always end in -ide.

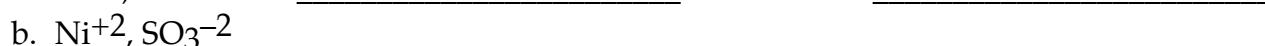
or Contain a **Polyatomic Ion** (3 or more elements): End in -ate, -ite or -ide.

Binary Molecular (2 non-metals): Must use prefixes, always end in -ide.

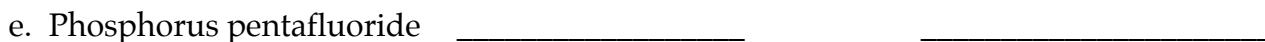
	Type (Ionic or Molecular)	Name
a. Fe(OH)_3	_____	_____
b. CBr_4	_____	_____
c. AlCl_3	_____	_____
d. NiO	_____	_____
e. NH_4NO_3	_____	_____
f. N_2O	_____	_____
g. PBr_5	_____	_____
h. AgCN	_____	_____

Final Worksheet: Side 2 :Formulas and names**page 4**

1. Write formulas and names for compounds composed of these pairs of ions.



2. Name these acids: What is the formula of these acids?

e. Formic acid is HCHO_2 . What is the name of NaCHO_2 ? _____f. The oxalate ion is $\text{C}_2\text{O}_4^{-2}$. What is the formula for oxalic acid? _____g. Sorbic acid is $\text{HC}_6\text{H}_7\text{O}_2$. What is the formula for magnesium sorbate? _____3. State if these compounds are Ionic or Molecular. Then write their formula. (directions other side)
Type (Ionic or molecular) Formula4. State if these compounds are Ionic or Molecular. Then name them. (Directions on other side)
Type Name