

Chemical Nomenclature – Ionic Compounds

Write the names and charges of the following ions. Most transition metals have more than one charge, but some have only one charge (Ag, Cd, Zn). See p. 121.

Li _____	Na _____	K _____
Be _____	Mg _____	Ca _____
Cu ⁺² _____	Zn _____	Ag _____
N _____	O _____	F _____
P _____	S _____	Br _____

Refer to Table 5.3 to answer the following questions:

Write a balanced formula for tin (II) oxide. _____

Write a balanced formula for tin (IV) oxide. _____

Name the following compound: MnO_2 _____

Name the following compound: Mn_2O_5 _____

Name the following binary ionic compounds:

a. Cs_2O _____

b. $BaCl_2$ _____

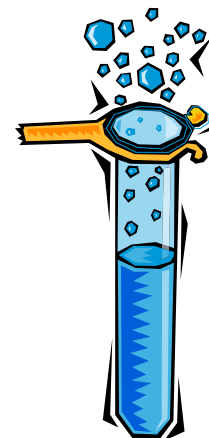
c. $AgBr$ _____

d. ZnS _____

e. CuS _____

f. $FeCl_3$ _____

g. SnO_2 _____



Write formulas for the following ionic compounds:

a. chromium (III) oxide _____

b. aluminum oxide _____

c. lead (IV) oxide _____

d. manganese (VII) oxide _____

e. mercury (II) sulfide _____

Ternary ionic compounds contain three different ions. Usually, two of these elements are chemically combined in the form of a polyatomic ion. Writing formulas for ternary ionic compounds is quite similar to writing formulas for binary ionic compounds, except that the group charge of the polyatomic ion is used in calculating the total charge of the compound. See page 123. **Ex.:** Na^+ and SO_4^{2-} will form the compound Na_2SO_4

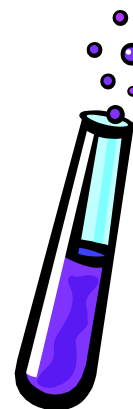
Name the following ternary ionic compounds:

- a. H_2SO_4 _____
- b. NaNO_3 _____
- c. CaCO_3 _____
- d. NaOH _____
- e. $\text{Ba}(\text{ClO})_2$ _____



Write formulas for the following compounds:

- a. magnesium nitrate _____
- b. Aluminum sulfate _____
- c. Iron (II) sulfate _____
- d. iron (III) sulfate _____
- e. tin (IV) nitrate _____
- f. zinc chloride _____
- g. lead (IV) oxide _____
- h. silver bromide _____
- i. sodium phosphate _____
- j. magnesium sulfide _____
- k. cobalt (II) fluoride _____
- l. barium oxide _____
- m. calcium phosphate _____
- n. copper (II) cyanide _____
- k. nickel (II) acetate _____
- l. nickel (II) oxalate _____
- m. ammonium chloride _____



(notice anything different about the last polyatomic anion?)

Name the following compounds:

- a. $\text{Pb}_3(\text{PO}_4)_2$ _____
- b. CuSO_4 _____
- c. CaTe _____
- d. AgNO_3 _____