

Ionic Compounds...Continued

To form IONIC COMPOUNDS
WE NEED A Metal + Nonmetal
(positive ion) (negative ion)

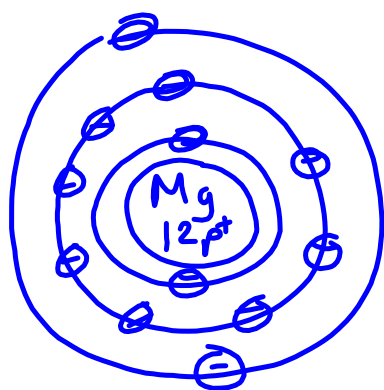
*** When they form a compound the overall charge must be zero! ***

When talking about a nonmetal ion
the ending is change to ---ide

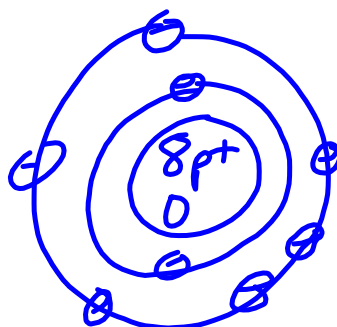
oxygen----- oxide
nitrogen----- nitride
sulfur----- sulfide
bromine---- bromide
chlorine---- chloride
iodine---- iodide
phosphorus---phosphide
fluorine---fluoride

Draw a Bohr model for

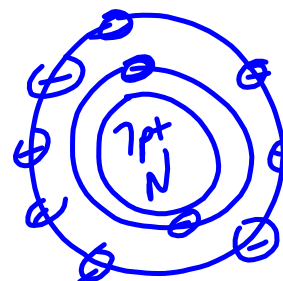
A. magnesium atom



B. oxygen



C. nitride



1. What is the symbol for the ion? Mg^{2+}

O^{2-}

N^{3-}

Naming Binary Ionic Compounds

two ions

1. Use lower case letters
2. Name the metal first
3. Name the non-metal. Use the root of the word and add "ide"

Naming Binary Ionic Compounds

- Metal + Nonmetal --> Ionic Compound

Chemical Formula

Chemical Name

A. NaCl

sodium chloride

B. CaBr₂

calcium bromide

C. RbI

rubidium iodide

D. Al₂O₃

aluminum oxide

Symbol and name of ion.

fluorine

aluminum

Gain or
lose e^-

Gain

Lose

How many
gained lost

1

3

Symbol :

F^-

Al^{3+}

Name Ion

fluoride

aluminum ion

Ion symbol

aluminum

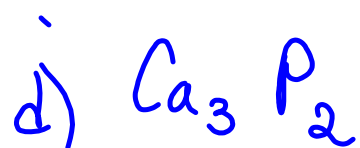
fluoride

Al^{3+}

F^-

AlF_3

Name the following:

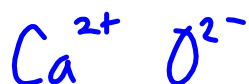


Writing the formula for Ionic Compounds....

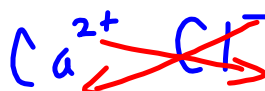
1. First determine the ion charge for the metal and nonmetal
2. Use a subscript to show how many of each metal and non-metal are needed to get an overall charge of zero!!

*** Overall charge of Zero ***

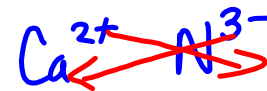
A. calcium oxide



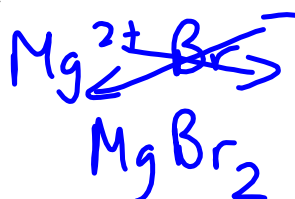
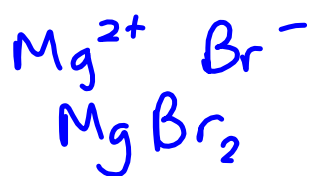
B. calcium chloride



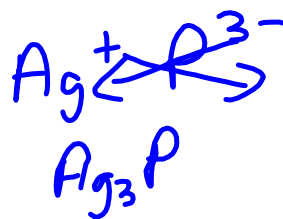
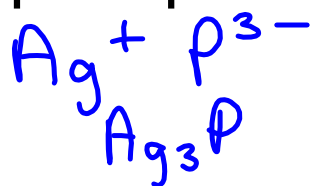
C. calcium nitride



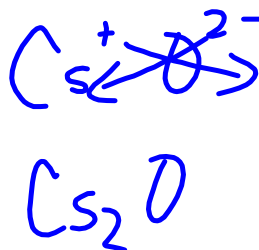
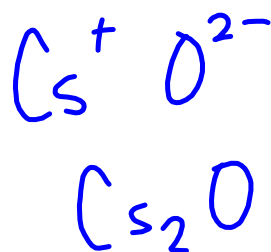
D. magnesium bromide



E. silver phosphide

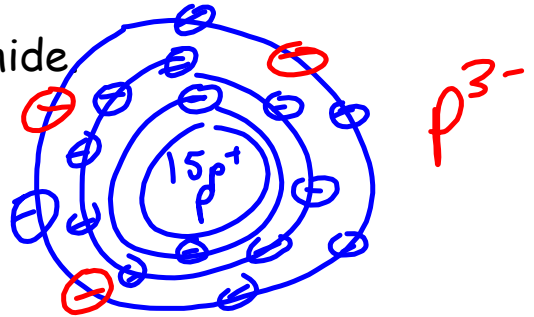
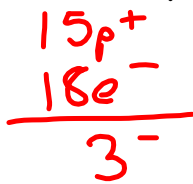


F. cesium oxide



What do you remember?

1. Draw a bohr diagram for the phosphide



2. Write the chemical name for

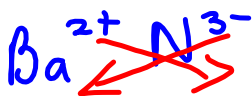
A. CaS
calcium sulfide

B. Mg_3P_2
magnesium phosphide

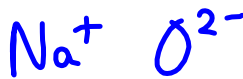
C. $AlCl_3$
aluminum chloride

3. Write the chemical formula for:

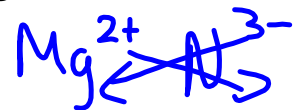
A. barium nitride



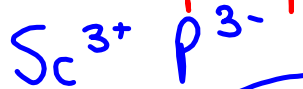
B. sodium oxide



C. magnesium nitride



d) scandium phosphide



| Chemical name | Chemical Formula |
|---------------------------------------|---|
| 1. zinc phosphide $Zn^{2+} P^{3-}$ | Zn_3P_2 |
| 2. scandium oxide $Sc^{3+} O^{2-}$ | Sc_2O_3 |
| 3. zirconium sulfide | $Zr^{4+} S^{2-}$ (Zr_2S_4) ZrS_2 <small>0.5</small> |
| 4. gallium nitride | GaN |
| 5. osmium chloride | $OsCl_4$ |
| 6. potassium fluoride | KF |
| <hr/> | |
| 1. aluminum oxide | $Al^{3+} O^{2-}$ Al_2O_3 |