

# Naming Notes - for website

January 16, 2020 8:06 AM

## Naming Basic Ionic Bonds

### **Naming:**

1. Name the metal ion

Sodium



2. Name the non-metal ion and change the ending to 'ide'

Phosphorus → Phosphide

### **Writing formula:**

1. Identify each ion and its charge

aluminum<sup>+3</sup> fluoride<sup>-1</sup>



2. Determine the total charges needed to make the positives = the negatives

aluminum = +++ = 3+  
fluoride = - × 3 = 3-

Therefore we need 3 fluoride  
for every 1 aluminum

3. Note the ratio of the compound

$AlF_3$  \* 3 fluorines for every 1 aluminum  
subscript shows how many of  
each ion. Don't write 1

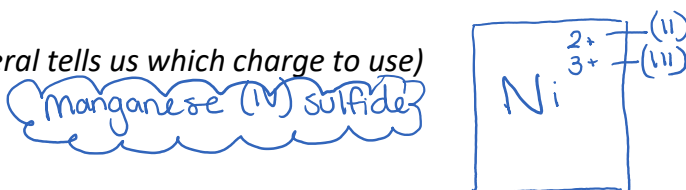
## Naming Ionic Compounds Containing Multi-Valent Ions

### **Writing formula:**

1. Identify each ion and its charge (the roman numeral tells us which charge to use)

Manganese +4 → The roman  
numerals tell us this

Sulfur -1



Manganese (IV) sulfide

2. Determine the total charges needed to balance the positives and the negatives

Manganese = +4 = +4 ✓  
2 Sulfur = -2 -2 = -4

3. Determine ratio and write as subscripts

$MnS_2$  ← We have 2 sulfur for every  
1 Manganese.

### **Naming:**

1. Identify the metal

Gold



1. Identify the metal

Gold



2. Verify that it can form more than one ion



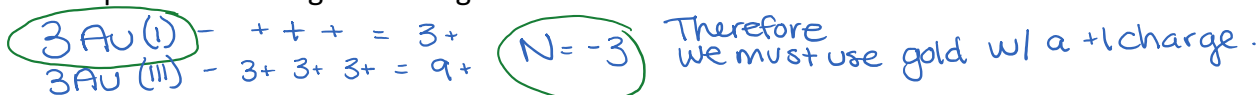
3. Determine the ratio for the ions in the formula

$Au_3N = 3$  gold ions for every 1 nitrogen ion

4. Note the charge of the negative ion

Nitrogen  $-3$

5. The positive and negative charges must be balanced



6. Write the formula name using roman numerals

Gold (I) Nitride.

- One - I
- Two - II
- Three - III
- Four - IV
- Five - V
- Six - VI
- Seven - VII

### Ionic Compounds with Polyatomic Ions

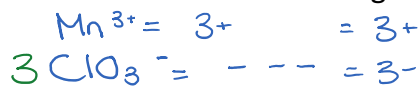
#### **Writing Formula**

1. Identify each ion and its charge



Manganese (III) chlorate.

2. Determine the total charges needed to balance



3. Use brackets around the poly atomic ion to show the ratio



#### **Naming**

1. Same as when you would name a basic ionic compound, except that you write the name of the polyatomic ion as you see it on your data booklet.

### Names and Formulas of Covalent Compounds

#### **Naming**

1. Name the left most element in the formula first

Nitrogen



# Nitrogen

← 3

2. Name the second element and end it in 'ide'

Oxide

3. Add prefix to each element name to indicate the number of atoms of each element

2 Nitrogen = dinitrogen

3 Oxide = trioxide.

= Dinitrogen trioxide

\*If the first element only has one atom, don't add the prefix

\*The prefix of mono is shortened to mon if it is placed before oxide

1 - mono

2 - di

3 - tri

4 - tetra

5 - penta

6 - hexa

7 - hepta

8 - octa

9 - nona

10 - deca

## Writing Formulas

1. Use the prefix's to show you the ratio of the elements

dihydrogen dioxide.

