

SCIENCE 1206
Worksheet: Binary Ionic Compound Nomenclature – Multivalent Cations



Chemical nomenclature is the system and rules used for naming chemical compounds. The system has been regulated by the International Union of Pure and Applied Chemistry (IUPAC).

When given the chemical formula:

- 1) Name the metal first
- 2) Name the nonmetal and add “ide” to the end
- 3) Figure out the valence value on the metal and write it between the metal and nonmetal names using Roman numerals and brackets.
· Roman numerals: 1 = I, 2 = II, 3 = III, 4 = IV, 5 = V, 6 = VI, 7 = VII



1. Write the chemical name for the following

- | | |
|----------------------------|-------|
| A) FeCl_2 | _____ |
| B) FeCl_3 | _____ |
| C) Cu_2O | _____ |
| D) PbCl_4 | _____ |
| E) FeI_3 | _____ |
| F) AuF | _____ |
| G) Ni_2O_3 | _____ |
| H) PbO_2 | _____ |
| I) Ti_2O_3 | _____ |
| J) CuS | _____ |
| K) Fe_2O_3 | _____ |
| L) PbS | _____ |

Determining chemical formula for a multivalent ionic compounds when given the name the

1. Write the chemical symbol for each element.
2. Determine the valence value for the nonmetal from the Periodic table.
3. Use the Roman numeral as the valence value for the metal.
4. "Crossover" the valence values.
5. Reduce subscripts to lowest terms

2. Write the chemical formula for the following:

- A) platinum (II) chloride _____
- B) manganese (I) phosphide _____
- C) copper (I) oxide _____
- D) iron (III) oxide _____
- E) chromium (II) bromide _____
- F) vanadium (II) sulfide _____
- G) cobalt (III) sulfide _____
- H) lead (II) oxide _____
- I) niobium (v) sulfide _____
- J) tin (IV) fluoride _____
- K) vanadium(V) oxide _____
- L) platinum(IV) nitride _____