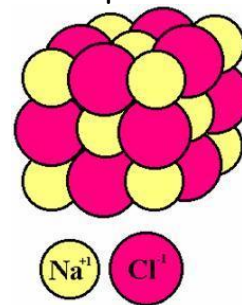


Disclaimer: Nomenclature Lesson #1 is a REVIEW and assumed knowledge from Grade 10. Please read this carefully and try the questions listed in the package. We will take it up in class!

There are 3 categories of IONIC compounds that we deal with:

1. BINARY Ionic
 - a. Simple Binary Ionic – simple ions (only single ion charges)
 - b. Multivalent ions – more than one charge
2. POLYATOMIC ions (complex ions)
3. Hydrates



Let's focus on 1a today (Simple Binary Ionic Compounds). Recall that we have already discussed these in class and we have learned how to draw the complete Lewis-Dot formation of these simple binary ionic compounds!

Binary Ionic Compounds are composed of a metal ion (+) and a non-metal ion (-). The word "binary" simply means that 2 ions are involved.

Rules for NAMING simple binary ionic compounds:

- Name the positive ion (cation) by writing the full name of the metal.
- Name the negative ion (anion) by shortening the name of the atom and add the **-ide** ending.

Examples:

- a) NaCl : Sodium **chloride**
- b) CaF_2 : Calcium **fluoride**
- c) K_2O : Potassium **oxide**

IMPORTANT TIP!

Notice that we do NOT consider the subscript when we name simple ionic compounds. Do NOT use prefixes (e.g. mono, di, tri). These prefixes are for MOLECULAR compounds!

You Try! Name the following SIMPLE Binary Ionic Compounds:

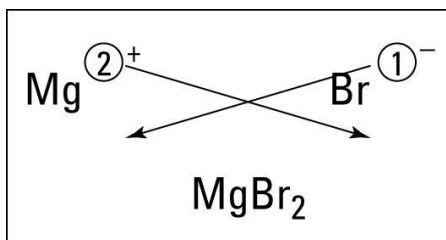
- a) NaCl _____
- b) FrBr _____
- c) KF _____
- d) RaS _____
- e) LiI _____
- f) AlBr_3 _____
- g) CdCl_2 _____
- h) K_2O _____
- i) ZnO _____
- j) CaTe _____

Rules for writing FORMULAS for simple binary ionic compounds:

- Write down the symbols of the ions involved.
- Write the ionic charge on top of each ion. (Remember the metal will be positive and the non-metal will be negative).
- "Criss-Cross" the ionic charges down to the OPPOSITE ion.
- Reduce/simplify your chemical formula
- Your final chemical formula will have a net charge of 0.

Writing chemical formulas: Example

a) Magnesium Bromide:



You Try! Give the formula for the following simple binary ionic compounds:

- a) potassium bromide _____
- b) aluminum phosphide _____
- c) scandium chloride _____
- d) barium sulphide _____
- e) francium phosphide _____
- f) zinc arsenide _____
- g) aluminum oxide _____
- h) beryllium chloride _____
- i) aluminum oxide _____
- j) hafnium chloride _____

TIP!

Note that if the subscript is "1", we typically do not write the "1" in our formula. ie. Sodium chloride would be NaCl, not Na₁Cl₁.

MOLECULAR COMPOUNDS:

- | | |
|-----------------------------------|---|
| 1. nitrogen monoxide _____ | 9. dinitrogen monoxide _____ |
| 2. phosphorus trichloride _____ | 10. disulfur decafluoride _____ |
| 3. carbon dioxide _____ | 11. N ₂ O ₄ _____ |
| 4. carbon monoxide _____ | 12. CCl ₄ _____ |
| 5. carbon tetrafluoride _____ | 13. NH ₃ _____ |
| 6. phosphorus tribromide _____ | 14. CS ₂ _____ |
| 7. dinitrogen monoxide _____ | 15. C ₂ H ₄ _____ |
| 8. phosphorus pentachloride _____ | |

