**NAMING MONATOMIC ANIONS:**

Non-metal atoms gain valence electrons to form **negatively charged ions** called **anions**.

When a non-metal forms an ion, it is named:

**Element stem name + “ide” + ion**

e.g. O = **ox**ygen atom O-2 = **ox**ide ion

N = **nitr**ogen atom N-3 = **nitr**ide ion

Name each of the following monatomic anions:

F- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Cl- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Br- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ S-2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ P-3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**WRITING CHEMICAL FORMULAS GIVEN INDIVIDUAL IONS**

**Compounds must be neutral total positive (+) charge = total negative (-) charge**

1. If the two ions have exactly opposite charges (+1 and -1, +2 and -2, +3 and -3) such as if the formula contains one of each ion:

e.g. Na+ + Cl- = NaCl Ca+2 + S-2 = CaS

Al+3 + N-3 = AlN

2. If two monatomic ions have different charges:

**Use the crossover rule to get formula of the compound**

Superscript for cation becomes subscript for anion

Superscript for anion becomes subscript for cation

**Simplify subscripts** to get the lowest ratio of atoms (Note**: Only the numbers cross down**: not the signs!)

Combine each pair of ions to get the formula of the compound they form:

Cu+ O-3 K+ P-3 Fe+3 S-2

**GIVEN THE CHEMICAL FORMULA, NAME THE COMPOUND**

If the metal is in Groups IA – IIIA, silver, cadmium, or zinc then just name the metal cation and the anion.

e.g. NaCl Na = **sodium** and Cl = **chloride** **sodium chloride**

BaI2 Ba = **barium** and I = **iodide barium iodide**

Give the name for each compound given its chemical formula:

|  |  |  |
| --- | --- | --- |
| **Formula** | **Individual Ions** | **Name of Compound** |
| MgCl2 | Mg+2 Cl- | Magnesium chloride |
| K2S |  |  |
| SnO2 |  |  |
| CuBr2 |  |  |
| Ag3N |  |  |
|  |  |  |
|  |  |  |