Naming Compounds

**Types of compounds**

**Compounds** contain a **metal and a non-metal**, for example sodium chloride (NaCl).  **Compounds** contain **only non-metals**, for example carbon dioxide (CO2).

**Naming Compounds**

There are some rules for naming chemical ionic compounds.

If the compound contains a metal atom and a non-metal atom,

* Write the name of the **metal** first
* Write the name of the **non-metal** second and change the ending to **–ide**

For example, table salt contains one sodium atom and one chlorine atom, NaCl. The name of this compound is ***sodium*** ***chloride.***

Try writing the names for these compounds.

KCl ***potassium chloride*** Fe2O3 ***iron oxide***

NaI ***sodium iodide*** Na2O ***sodium oxide***

ZnO ***zinc oxide*** AgI ***silver iodide***

MgS ***magnesium sulfide*** NiCl2 ***nickel chloride***

**Naming Compounds**

If the compound contains only non-metal atoms, you need to use **prefixes** to describe how many atoms of each element are in the compound.



**mono** – one **di** – two **tri** – three **tetra** – four

* The elements are **named in the order they appear** in the formula.
* The **prefix** is put in front of each element name to show **how many** are in the compound.
* The **ending** of the last element is changed to ­**–ide**.
* If there is only **one** atom of the first element, **no prefix** is needed.

For example, the formula for water is H2O. It contains two hydrogen atoms and one oxygen atom. Its scientific name is ***dihydrogen*** ***monoxide***.

Try writing the names for these compounds.

CO2 ***carbon dioxide*** NF3 ***nitrogen trifluoride***

SO3 ***sulfur trioxide*** H2O2 ***dihydrogen dioxide***

NH3 ***nitrogen trihydride*** H2S ***dihydrogen sulfide***

N2O ***dinitrogen monoxide*** N2O4 ***dinitrogen tetraoxide***

PH3 ***phosphorus trihydride*** CO ***carbon monoxide***

N2O3 ***dinitrogen trioxide*** CH4 ***carbon tetrahydride***

**Complete the table below.**

|  |  |  |  |
| --- | --- | --- | --- |
| Formula of substance | Number of atoms of each element | Scientific name of substance | Element or Compound |
| CaCl2 | Calcium x 1  Chlorine x 2 | Calcium chloride | Compound |
| CO2 | ***Carbon x 1***  ***Oxygen x 2*** | ***Carbon dioxide*** | ***Compound*** |
| ***NaCl*** | Sodium x 1  Chlorine x 1 | ***Sodium chloride*** | ***Compound*** |
| H2 | ***Hydrogen x 2*** | ***Hydrogen*** | ***Element*** |
| ***H2O*** | Hydrogen x 2  Oxygen x 1 | ***Dihydrogen monoxide*** | ***Compound*** |
| SO2 | ***Sulfur x 1***  ***Oxygen x 2*** | ***Sulfur dioxide*** | ***Compound*** |
| ***N2*** | Nitrogen x 2 | ***Nitrogen*** | ***Element*** |
| ***MgO*** | Magnesium x 1  Oxygen x 1 | ***Magnesium oxide*** | ***Compound*** |
| ***O2*** | Oxygen x 2 | ***Oxygen*** | ***Element*** |