

4.2 names and formulas of compounds

_____ compounds are made up of positive and negative ions.

All of the positive and negative ions organize in a _____

Negative-positive _____.

Negative-negative and positive-positive _____.

Ionic compounds form from the inside out as solid crystals.

Ionic compounds are like a _____.

Covalent molecules _____ electrons. There is generally no order to the formation of covalent molecules.

These molecules clump together as _____, _____ or gases.

Covalent molecules are like a _____.

Each plastic ball = 1 covalent molecule of H₂O

The name of an ionic compound =

_____ ion + _____ ion- _____.

For example, an ionic compound forms between magnesium and

oxygen. The _____ ion is the first part of the name, magnesium.

The _____ ion forms part of the ending of the name, oxygen.

Add -ide to the end of the name to form _____.

_____ formulas are based on the ions of the atoms involved.

Writing formulas for ionic compounds:

In an ionic compound, the _____ charges _____ out the _____ charges.

The ratio of _____ charges gives the proper formula.

The ratio is always written in _____.

For example, what is the formula for magnesium phosphide?
Calcium oxide?

Some transitional metals are _____, meaning they have more than one ion form.

On the periodic table, the most common form of the ion is listed on top.

In the name of the compound, _____ are used following the positive ion to indicate which ion was used.

For example, what is the formula manganese (III) sulphide?

Try the name for TiF_4

Some ions, called _____ ions, are made up of several atoms joined together with covalent bonds.

The _____ has a + or - charge, not the individual atoms

_____ compounds, also called _____, rely on the chemical formula to reveal the components of the molecule.

_____ compounds are made up of two or more _____

Subscripts mean something different in covalent compounds

_____ compounds subscripts show the smallest whole-number ratio between the ions in the compound.

_____ molecules have subscripts that show the actual number of atoms in the molecule.

Binary covalent compounds (two _____ atoms) use a system of prefixes.

_____ compounds may have many or few atoms sharing electrons.

$\text{CH}_4 =$ _____ and $\text{C}_{25}\text{H}_{52} =$ _____

_____ are often used before the atom name to indicate the number of atoms in the molecule.

$\text{CO} =$ _____, $\text{CO}_2 =$ _____

Write the most metallic atom (farthest left) first

Add -ide to the end of the second atom's name

What is the chemical formula for the molecule trinitrogen tetrachloride?

To determine whether a compound is ionic or covalent:

1. Examine the formula.
 - Ionic compounds start with a _____ or the ammonium ion.
 - Covalent compounds start with a _____.
2. If the compound is _____:
 - Use the prefix system of naming if the compound is binary and does not start with hydrogen.
 - If there are more than two different elements, or it starts with H, there is probably a different, simpler name for the covalent molecule.
3. If the compound is _____:
 - Check the metal to see if it is multivalent (add a Roman numeral if it is multivalent). Naming starts with the name of the metal atom.
 - If it ends with a single non-metal, naming will just end in -ide.
 - If it ends in a polyatomic ion, look up the name/formula.