**NOTES 3.1: Compounds**

**What is a compound?**

* 2 or more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ joined together to make a pure substance.
* The substance has different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the elements that make it up. Ex. Water = H2O or C12H22O11 (table sugar)

**2 Types of Compounds**

|  |
| --- |
|  |
| * Electrons shared between non-metals
* Eg. H2O (water)
* Form “molecules” a neutral particle made up of atoms joined by covalent bonds
* Bonding due to electron sharing
 | * Electrons \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from metal to

non-metal to create oppositely charged ions* Eg. NaCl (table salt)
* Form “ionic lattice”
* Bonding due to attraction between oppositely charged ions (+/-attraction)
 |

**Covalent Compounds (Molecules)**

­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms \_\_\_\_\_­\_\_\_\_\_\_\_\_\_\_\_\_ electrons to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |
| --- | --- |
| **Example 1** H­2O | **Example 2** CH4 |
|  |  |

**Ionic Compounds**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_atoms *transfer* electrons to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Create oppositely charged \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Positive and negative charges balance each other forming a neutral \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Example** NaCl



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charged Sodium ions are attracted to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charged Chloride ions



Ions come together to form an \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

All \_\_\_\_\_\_\_\_\_\_ ions attract all \_\_\_\_\_\_\_\_\_\_ ions to form a \_\_\_\_\_\_\_\_\_\_ (eg. grains of salt).

**Polyatomic Ions -** An ion that is made up of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms that are held together with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_bonds.

Both \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ bonds can sometimes be found in the same \_\_\_\_\_\_\_\_\_\_\_\_\_.

In potassium dichromate (K2Cr2O7), potassium (K+) is ionically bonded to dichromate (Cr2O72-),



The dichromate ion (Cr2O72-) contains 7 oxygen atoms which are **covalently** bonded to 2 chromium atoms. This 9 atom unit has a charge, so it is called a polyatomic ion.



**HOMEWORK :** Read text pages 76-80 and then complete Textbook Pg 83 #2-9 (Quiz next class!)