

Year 10 C Pathway

Mr. D. Patterson

INTRODUCTORY CHEMISTRY

Outcomes

- Describe how a covalent compound is different from an ionic compound
- Name a covalent compound from a formula
- Write a formula for a covalent compound from a name

Element, mixture or compound?

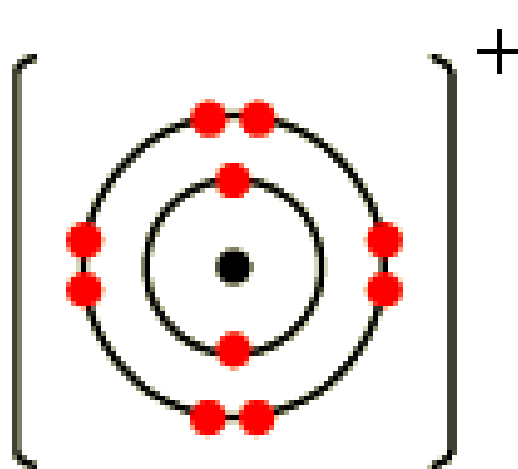
- Elements – Carbon, oxygen, calcium

- Mixtures – Iron filings in sand, salty water

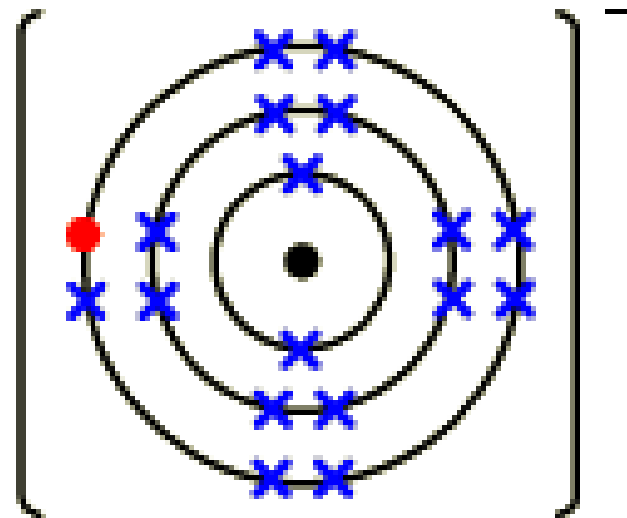
- Compounds
 - Ionic Compounds – NaCl, CaF₂
 - Covalent Compounds

Remember this?

- Ionic compounds form between a metal and non metal by swapping electrons (to have a full outer shell)



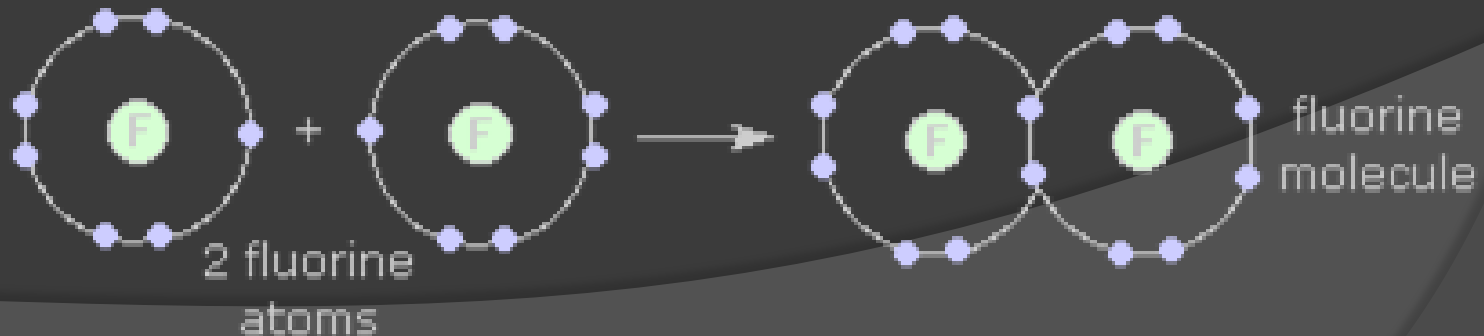
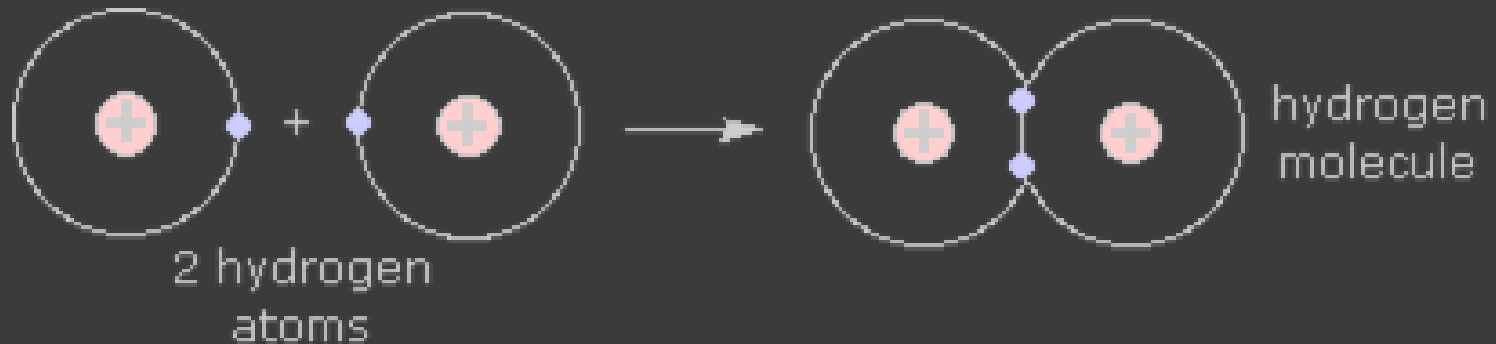
sodium ion,
 $\text{Na}^+ [2,8]^+$



chloride ion,
 $\text{Cl}^- [2,8,8]^-$

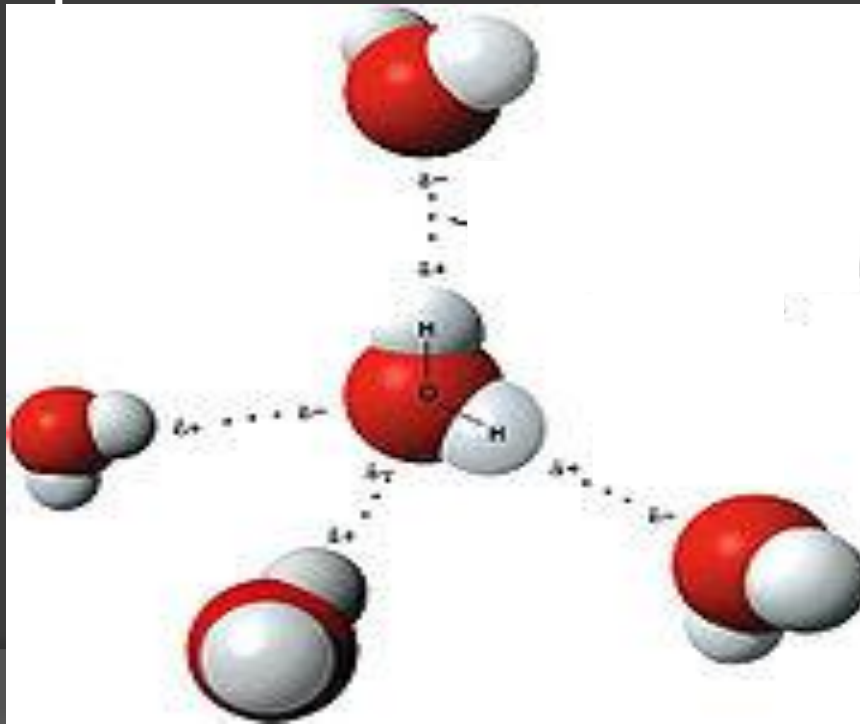
Covalent Compounds

- Covalent bonds form when non-metals share their electrons so each has a full outer electron shell



Covalent Molecular Substances

- The bonds between covalent molecules are much **weaker** than ionic bonds. Thus they tend to be liquid or gases at room temperature



Naming Covalent Compounds

(page 20 of Study Guide)

● Rule 1 and 2:

● CO Carbon monoxide

● N₂O₄ Dinitrogen tetraoxide

● SO₂ Sulphur dioxide

Naming Covalent Compounds

(page 20 of Study Guide)

- Rule 3 and 4:

● CO Carbon monoxide

● N₂O₄ Dinitrogen tetraoxide

● SO₂ Sulphur dioxide

If the first element has only one atom it is the only time a prefix is NOT used

Naming Covalent Compounds (page 20 of Study Guide)

- Rule 5:

- H_2 Hydrogen

- Br_2 Bromine

- N_2 Nitrogen

Writing covalent formula

- You can write the formula for covalent compounds from a name by using the same rules
- Eg: Diphosphorous pentaoxide

Writing covalent formula

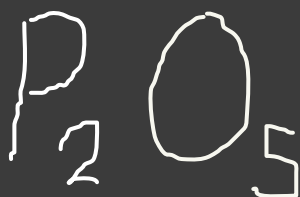
- You can write the formula for covalent compounds from a name by using the same rules

- Eg: Diphosphorous pentaoxide



Writing covalent formula

- You can write the formula for covalent compounds from a name by using the same rules
- Eg: Diphosphorous pentaoxide



Outcomes

- Describe how a covalent compound is different from an ionic compound
- Name a covalent compound from a formula
- Write a formula for a covalent compound from a name

- Checkpoint 4.1, 4.2, set 5 (Q1 and 2)