

Chapter 08

Chemical

Bonding

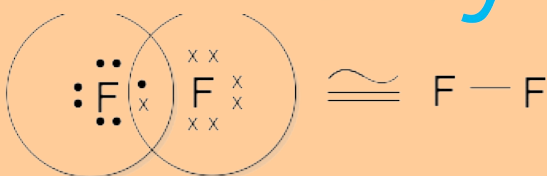
Covalent Bond:

- Few atoms can even attain octet configuration by sharing of pair of electrons.
- Sharing of electrons will be done by similar atoms.

Ex. F_2 molecule.

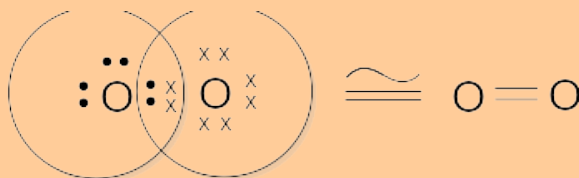
F_2 molecule is formed by combination of two fluorine atoms.

- In each fluorine atom there are 9 electrons. The electronic configuration of fluorine is 2.7. In the second shell, two get eight electrons, fluorine requires one more electron.
- The two fluorine atoms can share their unpaired electrons & they will hold the pair of electrons together.
- We represent the fluorine molecule according to Lewis symbols as,



Oxygen molecule:

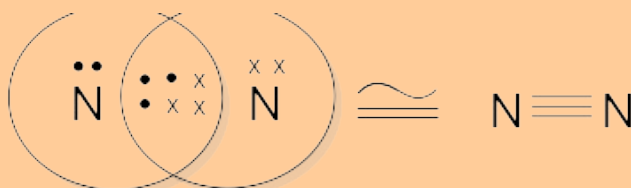
- Oxygen molecule is formed by combination of two oxygen atoms.
- The electronic configuration of oxygen is 2, 6.
- There are six valency electrons present in oxygen to get octet configuration two more electrons are required.
- Two pairs of electrons are shared between two atoms making it double bond.
- Lewis dot symbol of oxygen molecule.



N₂ molecule:

The electronic configuration of nitrogen is 2.5.

- To get octet configuration, nitrogen requires three more electrons.
- Six electrons are shared by making it triple bond.
- Lewis dot symbol of nitrogen molecule is,



- Covalent bonding can also be between different atoms of same properties.

CH₄ molecule:

Carbon and hydrogen are similar in nature & they can share the electrons together.

- In methane, carbon has configuration 2, 4 to get octet configuration, carbon requires 4 electrons.
- Hydrogen has only one electron in its shell. Hydrogen gets nearest inert gas configuration of He, which is known as duplet configuration.
- This duplet configuration is exceptional for atoms like hydrogen, helium like small atoms.
- Carbon shares its four electrons, one each with hydrogen to form four bonds.
- The Lewis dot symbol for methane molecule is,

