

Chapter 08

Chemical

Bonding

Kossel Lewis Theory:

- According to Lewis proposal, atoms do combine. The main reason, which is responsible for the combination of an atom, is the no. of valency electrons, which is present in a given atom.
- He has proposed symbols, which are called Lewis symbols.
- Lewis symbols indicate the no. of valency electrons present in the given atom.
- While writing Lewis symbols the nucleus and its inner core of electrons are represented by the symbol of the element.
- The no. of valency electrons present in the atom will be represented by either dot (or) cross around the atom.

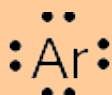
Ex. Argon atomic number is -18.

Configuration of Argon is 2, 8, 8.

2, 8 are inner core electrons and the next 8 are considered as valency electrons.

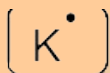
The symbol Ar represents the nucleus with the ten electrons present in the first & second shells.

The outer most electrons will be written as dots around the symbol 'Ar'.



- Makes Lewis dot symbol for Argon.

- Potassium has 19 electrons.
- The configuration of potassium is 2, 8, 8, 1.
- The outermost shell of potassium is 4th shell. It contains 1 electron.
- K represents the nucleus and 18 inner electrons.
- The one valency electron is represented as a dot around K.



- The inert gases do not react with any other element and they are inert.

Octet rule:

Every atom undergoes such chemical change, which can provide eight e⁻ into their valency shell.

- Atoms do combine or react to get 8e⁻ into their valency shell.
- The inert gases have 8e⁻ in their valency shell. Hence, they do not react with other elements.
- Depending on how atoms combine, there are different types of chemical bonds like an ionic bond, covalent bond, metallic bond, and coordinate covalent bond, etc.