

Structures and Properties of Matter

Hanz Po

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1 Types of Chemical Bonds

1.1 Lewis Theory of Bonding

The Lewis Theory of Bonding can be described with the following characteristics:

- Atoms and ions are stable if they have a full valence shell of electrons (noble gas configuration)
- Electrons are most stable when they are paired
- Atoms form chemical bonds to achieve a full valence shell of electrons. This may be achieved in two ways:
 1. An exchange of electrons between metal and non-metal Atoms
 2. Sharing of electrons between non-metal atoms

1.2 Lewis Diagrams

Lewis diagrams are simplified forms of Bohr-Rutherford diagrams. The chemical symbol represents the nucleus and core electrons, while dots around the symbol represent the valence electrons.

