

CHEMICAL BONDING

 Learning Objectives

After completing this lesson, student will be able to

- understand how molecules are formed and what is a chemical bond.
- explain Octet rule.
- draw Lewis dot structure of atoms.
- understand different types of bonds.
- differentiate the characteristics of ionic bond, covalent bond and coordinate bond.
- understand redox reactions.
- find out the oxidation number of different elements.

Introduction

We already know that atoms are the building blocks of matter. Under normal conditions no atom exists as an independent (single) entity in nature, except noble gases. However, a group of atoms is found to exist together as one species. Such a group of atoms is called molecule. Obviously there should be a force to keep the constituent atoms together as the thread holds the flowers together in a garland. This attractive force which holds the atoms together is called a bond.



Figure. 13.1 Flowers held together by thread

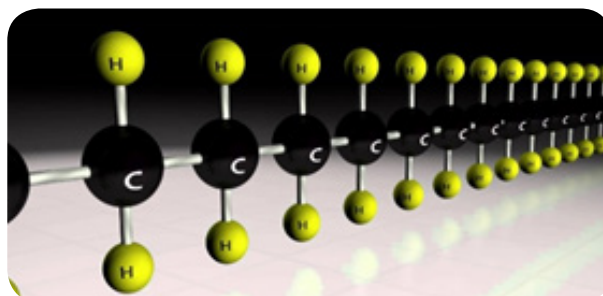


Figure. 13.2 Atoms held together by bond

A chemical bond may be defined as the force of attraction between the atoms that binds them together as a unit called molecule. In this unit, we will study about Kossel-Lewis approach to chemical bonds, Lewis dot structure and different types of reactions.

13.1 Kossel – Lewis approach to chemical bonds**13.1.1 Octet rule**

Atoms of various elements combine together in different ways to form chemical compounds. This phenomenon raised many questions.