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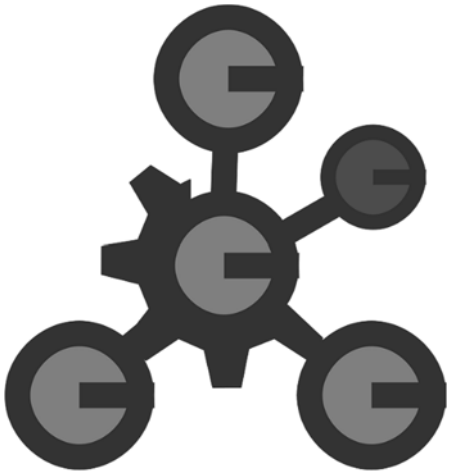

Chemical Bonds and Compounds

Chemical bonds are the forces that hold atoms together in compounds. The two main types of chemical bonds are covalent bonds and ionic bonds.

Covalent bonds involve the sharing of electrons between atoms. In covalent compounds, atoms share electrons to achieve a stable electron configuration. For example, in the compound methane (CH_4), carbon and hydrogen atoms share electrons.

Ionic bonds occur when one atom transfers electrons to another atom. This transfer results in the formation of charged ions. For instance, in the compound sodium chloride (NaCl), sodium loses an electron and becomes a positively charged ion (Na+), while chlorine gains an electron and becomes a negatively charged ion (Cl-).

Understanding chemical bonds is vital because they determine how atoms combine to form compounds with specific properties.

Questions

1. What are chemical bonds, and why are they important in chemistry?

2. Explain covalent bonds and provide an example of a compound with covalent bonds.

3. Describe ionic bonds and provide an example of a compound with ionic bonds.

4. How do chemical bonds influence the properties of compounds?

5. True or False: In covalent bonds, atoms transfer electrons to achieve stability.