Edexcel GCSE Chemistry

Topic 1: Key concepts in chemistry

Covalent bonding

Notes

1.28 Explain how a covalent bond is formed when a pair of electrons is shared between two atoms

- Covalent bonding occurs in most non-metallic elements and in compounds of nonmetals
- When atoms share pairs of electrons, they form covalent bonds. These bonds between atoms are strong.

1.29 Recall that covalent bonding results in the formation of molecules

- Covalently bonded substances may consist of small molecules e.g. HCl, H_2, O_2, Cl_2, NH_3, CH_4.
- Some have very large molecules, such as polymers.
- Some have giant covalent structures (macromolecules) e.g diamond, silicon dioxide.
- Diagrams to show these substances could be dot and cross, shown as repeat units for polymers using a single line to represent a single bond, ball and stick and two- and three-dimensional diagrams.

1.30 Recall the typical size (order of magnitude) of atoms and small molecules

- Simple molecular substances consist of molecules in which the atoms are joined by strong covalent bonds
- Therefore, atoms are smaller than small molecules