

## ATOMS AND MOLECULES

## SUMMARY

- The law of conservation of mass states that the masses of the reactants and products remain unchanged.
- The law of constant proportions states that all pure specimens of a compound always contain the same elements combined together in the same proportion by weight.
- According to Dalton's atomic theory, all matter is made up of very small particles called atoms, which cannot be further divided and have independent existence.
- The smallest particle of an element or a compound, which can exist in the free state, is called a molecule.
- A chemical formula represents the constituent elements of a compound and the number of atoms of each combining element.

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- A mole contains  $6.023 \times 10^{23}$  particles. This is called Avogadro number.
- Molar volume is one mole of any gas at STP having a volume of 22.4 L.
- Mass of one mole of substance is called its molar mass.