Chemistry for the IB Diploma Programme





Guiding Question revisited

How does the classification of organic molecules help us to predict their properties?

In this chapter we have learnt that:

Organic compounds can be grouped into classes based on their functional groups.

The presence of different functional groups means that different classes of compounds have different physical and chemical properties.

Homologous series exist for each class of compound and successive members of a series differ by a CH_2 unit.

Applying IUPAC nomenclature to generate unique names for individual compounds allows for further classification of organic compounds.

Structural isomers are compounds that have the same molecular formula but different connectivities. They have unique IUPAC names as well as different chemical and physical properties.

- Chain isomers occur when C–C bonds are connected differently to form structures that are a straight chain or branched.
- Positional isomers contain the same functional group but it is at different positions on the carbon chain.
- Functional group isomers contain different functional groups.
- Positional isomers of alcohols, halogenoalkanes and amines can be classified as primary, secondary or tertiary depending on the number of carbon atoms bonded to the functional group site.