# Functional groups: classification of organic compounds

International Baccalaureate · IB Diploma · Chemistry · HL · Vocabulary in context

| Word | Example |
|---|---|
| **skeletal formula** /ˈskelɪtl ˈfɔːmjʊlə/ | In a **skeletal formula**, each corner of a line is a carbon atom. |
| **phenyl** | A **phenyl** group is a benzene ring attached to another group. |
| **functional group** /ˈfʌŋkʃənl gruːp/ | The –OH **functional group** makes a compound an alcohol.<br>–OH |
| **homologous series** /həˈmɒləgəs ˈsɪəriːz/ | The alkanes form a **homologous series**: each member has one more CH2.<br>CH2 |
| **structural isomer** | Butane and methylpropane are each a **structural isomer** of the other. |
| **primary** /ˈpraɪməri/ | In a **primary** alcohol, the –OH carbon is joined to one other carbon.<br>–OH |
| **secondary** /ˈsekəndəri/ | In a **secondary** alcohol, the –OH carbon is joined to two other carbons.<br>–OH |
| **tertiary** /ˈtɜːʃəri/ | In a **tertiary** alcohol, the –OH carbon is joined to three other carbons.<br>–OH |
| **index of hydrogen deficiency** | Benzene has an **index of hydrogen deficiency** of 4.<br>4 |
| **mass spectrometer** /mæs spekˈtrɒmɪtə/ | A **mass spectrometer** measures the mass of atoms. |



exercises.lol exercises.com.cn

| Word | Example |
|---|---|
| **molecular ion** /məˈlekjʊlə ˈaɪɒn/ | The **molecular ion** is the whole molecule with one electron removed. |
| **wavenumber** /ˈweɪvnʌmbə/ | The O–H peak is at a **wavenumber** of about 3300 $cm^{-1}$.<br>O–H 3300 $cm^{-1}$ |
| **fingerprint region** | Every molecule has its own pattern in the **fingerprint region**. |
| **nuclear magnetic resonance** | **Nuclear magnetic resonance** shows the hydrogen atoms in a molecule. |
| **chemical shift** /ˈkemɪkl ʃɪft/ | The **chemical shift** of this peak is 2.1 ppm.<br>2.1 ppm |
| **integration** /ˌɪntɪˈgreɪʃn/ | The NMR **integration** shows three hydrogens in this peak.<br>NMR |
| **stereoisomer** | A **stereoisomer** has the same connections but a different spatial arrangement. |
| **cis–trans isomer** | Cis-but-2-ene is a **cis–trans isomer**.<br>-2- |
| **chiral** /ˈkaɪrəl/ | Your hand is **chiral**: its mirror image does not fit on top of it. |
| **enantiomer** /eˈnæntɪəmə/ | An **enantiomer** is one of two non-superimposable mirror-image molecules. |
| **plane-polarized light** | **Plane-polarized light** vibrates in one direction only. |
| **racemic mixture** /rəˈsiːmɪk ˈmɪkstʃə/ | A **racemic mixture** has equal amounts of two optical isomers. |