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. –OH
homologous series /həˈmɒləgəs ˈsɪəriːz/	The alkanes form a **homologous series**: each member has one more CH2. 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. –OH
secondary /ˈsekəndəri/	In a **secondary** alcohol, the –OH carbon is joined to two other carbons. –OH
tertiary /ˈtɜːʃəri/	In a **tertiary** alcohol, the –OH carbon is joined to three other carbons. –OH
index of hydrogen deficiency	Benzene has an **index of hydrogen deficiency** of 4. 4
mass spectrometer /mæs spekˈtrɒmɪtə/	A **mass spectrometer** measures the mass of atoms.

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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}. 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. 2.1 ppm
integration /ˌɪntɪˈgreɪʃn/	The NMR **integration** shows three hydrogens in this peak. 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**. -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.

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