Organic chemistry

IGCSE Chemistry · Vocabulary in context

Word	Example
molecular formula /məˈlekjʊlə ˈfɔːmjʊlə/	The **molecular formula** of glucose is C6H12O6. C6H12O6
displayed formula /dɪˈspleɪd ˈfɔːmjʊlə/	A **displayed formula** shows every atom and every bond.
structural formula /ˈstrʌktʃərəl ˈfɔːmjʊlə/	CH_3CH_2OH is a **structural formula**. CH_3CH_2OH
general formula /ˈdʒenərəl ˈfɔːmjʊlə/	The **general formula** of the alkanes is CnH2n+2. CnH2n+2
homologous series /həˈmɒləgəs ˈsɪəriːz/	The alkanes form a **homologous series**.
functional group /ˈfʌŋkʃənl gruːp/	The –OH **functional group** makes a compound an alcohol. –OH
saturated /ˈsætʃəreɪtɪd/	Ethane is **saturated**: it has only single bonds.
unsaturated /ʌnˈsætʃəreɪtɪd/	Ethene is **unsaturated**: it has a double bond.
Structural isomers /ˈstrʌktʃərəl ˈaɪsəməz/	**Structural isomers** have the same formula but different shapes.
fossil fuels /ˈfɒsl ˈfjuːəlz/	Coal and oil are **fossil fuels**.
coal /kəʊl/	**Coal** is a fossil fuel.
natural gas /ˈnætʃərəl gæs/	**Natural gas** is mostly methane.

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petroleum /pəˈtrəʊliːəm/	**Petroleum** is a mixture of many hydrocarbons.
Methane /ˈmiːθeɪn/	**Methane** is the gas used for cooking.
hydrocarbon /ˈhaɪdrəkɑːbən/	Methane is the simplest **hydrocarbon**: it has only carbon and hydrogen.
fractions /ˈfrækʃnz/	Crude oil is split into **fractions**, such as petrol.
fractional distillation /ˈfrækʃənl dɪstɪˈleɪʃn/	**Fractional distillation** separates crude oil into fractions.
fractionating column /ˈfrækʃənətɪŋ ˈkɒlʌm/	The **fractionating column** is hot at the bottom and cool at the top.
chain length /tʃeɪn leŋθ/	As the **chain length** increases, the boiling point goes up.
volatility /ˌvɒləˈtɪlɪti/	Bromine has a higher **volatility** than iodine.
viscosity /vɪˈskɒsɪti/	Oil has a higher **viscosity** than water.
bitumen /ˈbɪtʃuːmən/	**Bitumen** is used to make roads.
Alkanes /ˈælkeɪnz/	**Alkanes** have only single bonds.
Combustion /kəmˈbʌstʃn/	**Combustion** of methane gives carbon dioxide and water.
substitution reaction /ˌsʌbstɪˈtjuːʃn rɪˈækʃn/	In a **substitution reaction**, one atom is swapped for another.
ultraviolet light /ˌʊltrəˈvaɪəlɪt laɪt/	**Ultraviolet light** starts the reaction between methane and chlorine.

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photochemical reaction /ˌfəʊtəʊˈkemɪkl rɪˈækʃn/	The reaction of methane with chlorine needs light: it is a **photochemical reaction**.
activation energy /ˌæktɪˈveɪʃn ˈenədʒi/	A match gives the **activation energy** to start the fire.
Alkenes /ˈælkiːnz/	**Alkenes** turn bromine water from orange to colourless.
Cracking /ˈkrækɪŋ/	**Cracking** breaks long hydrocarbons into shorter, more useful ones.
catalyst /ˈkætəlɪst/	A **catalyst** speeds up a reaction without being used up.
hydrogen /ˈhaɪdrədʒn/	**Hydrogen** gas burns with a squeaky pop.
addition reactions /əˈdɪʃn rɪˈækʃnz/	In **addition reactions**, atoms add across a double bond.
bromine /ˈbrəʊmaɪn/	**Bromine** is a red-brown liquid.
nickel /ˈnɪkl/	**Nickel** is used as a catalyst.
steam /stiːm/	Magnesium reacts with **steam** to make hydrogen.
Alcohols /ˈælkəhɒlz/	**Alcohols** have an –OH group. –OH
ethanol /ˈeθənɒl/	**Ethanol** is the alcohol in wine and beer.
fermentation /fɜːmənˈteɪʃn/	Yeast makes alcohol by **fermentation** when there is no oxygen.
ethene /ˈiːθiːn/	**Ethene** is used to make plastic bags.

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yeast /jiːst/	**Yeast** makes bread rise.
glucose /ˈgluːkəʊs/	Cells use **glucose** for energy.
solvent /ˈsɒlvənt/	Water is the **solvent** in salt water.
Carboxylic acids /ˌkɑːbəkˈsɪlɪk ˈæsɪdz/	**Carboxylic acids** have a –COOH group. –COOH
Ethanoic acid /ˌeθəˈnəʊɪk ˈæsɪd/	**Ethanoic acid** is found in vinegar.
metals /ˈmetlz/	**Metals** form positive ions.
bases /ˈbeɪsɪz/	**Bases** react with acids to make salts.
salt /sɒlt/	Sodium chloride is a **salt**.
carbonates /ˈkɑːbəneɪts/	Acids react with **carbonates** to give carbon dioxide.
oxidation /ˌɒksɪˈdeɪʃn/	**Oxidation** is the loss of electrons.
potassium manganate(VII) /pəˈtæsɪəm ˈmæŋgəneɪt/	Purple **potassium manganate(VII)** loses its colour when it reacts.
vinegar /ˈvɪnɪgə/	**Vinegar** contains ethanoic acid.
ester /ˈestə/	Fruity smells often come from an **ester**.
polymer /ˈpɒlɪmə/	Poly(ethene) is a **polymer**.
monomers /ˈmɒnəʊməz/	Small **monomers** join to make a polymer.

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addition polymerisation /əˈdɪʃn ˌpɒlɪməraɪˈzeɪʃn/	In **addition polymerisation**, ethene molecules join to make poly(ethene).
repeat unit /rɪˈpiːt ˈjuːnɪt/	The **repeat unit** of poly(ethene) is –CH2–CH2–. –CH2–CH2–
condensation polymerisation /kɒndenˈseɪʃn ˌpɒlɪməraɪˈzeɪʃn/	In **condensation polymerisation**, water is given off each time two monomers join.
Polyamides /ˌpɒlɪˈeɪmaɪdz/	**Polyamides** are polymers joined by amide links.
Nylon /ˈnaɪlɒn/	**Nylon** is used to make ropes and clothes.
Polyesters /ˌpɒlɪˈestəz/	**Polyesters** are used to make clothes.
amide linkage /əˈmaɪd ˈlɪŋkɪdʒ/	An **amide linkage** is –CO–NH–. –CO–NH–
ester linkage /ˈestə ˈlɪŋkɪdʒ/	An **ester linkage** is –COO–. –COO–
Plastics /ˈplæstɪks/	**Plastics** are polymers that can be moulded into many shapes.
landfill /ˈlændfɪl/	A **landfill** buries waste in the ground.
Proteins /ˈprəʊtiːnz/	**Proteins** are polymers made from amino acids.
amino acid /əˈmiːnəʊ ˈæsɪd/	Glycine is the simplest **amino acid**.

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