AQA Chemistry A-level

Topic 3.1 - Organic Chemistry Introduction

Flashcards

Define empirical formula.

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Simplest whole number ratio of atoms in a molecule

Define molecular formula.

Define molecular formula.

Gives the actual number of atoms of different elements in a molecule

Define displayed formula

Define displayed formula

Shows every atom and every bond in a molecule

Define structural formula

Define structural formula

Shows arrangement of atoms in a molecule without showing every bond

Define skeletal formula

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Drawn as lines with each vertex being a carbon atom. Carbon atoms not drawn, assumed each C atom has all unspecified bonds as C-H

Give the suffixes for:

a) No double bonds
b) At least one double bond
c) An alcohol
d) An aldehyde
e) A ketone
f) A carboxylic acid

Give the suffixes for:

a) No double bonds -ane
b) At least one double bond -ene
c) An alcohol -ol
d) An aldehyde -al
e) A ketone -one
f) A carboxylic acid -oic acid

Give the prefixes for:

a) CH_3 group
b) C_2H_5 group
c) C_3H_7 group
d) C_4H_9 group
e) Cl group
f) Br group
g) I group

Give the prefixes for:

a) CH_3 group methyl-
b) C_2H_5 group ethyl-
c) C_3H_7 group propyl-
d) C_4H_9 group butyl-
e) Cl group chloro-
f) Br group bromo-
g) I group iodo-

Define structural isomerism

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When molecules have the same molecular formula but different structural formula

What is positional isomerism?

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Functional group is attached to the main chain at a different place

What is functional group isomerism?

What is functional group isomerism?

Same atoms but a different functional group due to a different arrangement of atoms

What is chain isomerism?

What is chain isomerism?

Hydrocarbon chain organised differently e.g. branched chains

Define stereoisomerism.

Define stereoisomerism.

When molecules have the same structural and molecular formula, but have a different arrangement of atoms in space

What is E-Z isomerism and how are the E and Z isomers decided?

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E-Z isomerism is caused by the limited rotation about C=C double bonds

If the two substituents with the highest atomic number are on the same side of the double bond, it is the Z (zusammen) isomer

If they are on different sides, it is the E (entgegen) isomer