CAIE Chemistry IGCSE

11.4 Alkanes

Flashcards

What does it mean when alkanes are described as ‘saturated hydrocarbons’?

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Saturated- contains only single covalent bonds

Hydrocarbons- contains only carbon and hydrogen atoms

Describe the bonding in alkanes

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- Saturated (only contain single covalent bonds).
- Each carbon atom forms four covalent bonds.
- Contain C-C and C-H covalent bonds.

Describe the reactivity of alkanes

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Generally very unreactive (except burning and substitution by chlorine).

What is a substitution reaction?
(extended only)

What is a substitution reaction? (extended only)

A substitution reaction is when one atom or a group of atoms is replaced by another atom or group of atoms.

What is required for alkanes to react with chlorine?

(extended only)

What is required for alkanes to react with chlorine? (extended only)

UV radiation- provides the activation energy for the photochemical reaction to occur

Write the general equation for the reaction between an alkane and a halogen

(extended only)

Write the general equation for the reaction between an alkane and a halogen (extended only)

Alkane + halogen → haloalkane + hydrogen halide

Write the word and chemical equations for the reaction between ethane and chlorine

(extended only)

Write the word and chemical equations for the reaction between ethane and chlorine (extended only)

Ethane + Chlorine → Chloroethane + Hydrogen chloride

$C_2H_6 + Cl_2 \rightarrow CH_3CH_2Cl + HCl$

Draw the displayed formulae of the products for the reaction between ethane and chlorine

(extended only)

Draw the displayed and structural formulae of the products for the reaction between ethane and chlorine

(extended only)

$CH_3CH_2Cl + HCl$