

11.2 Naming organic compounds

Name: _____ Class: _____ Date: _____

Total: 8 marks

KEY WORDS ethanoic acid • ethanol • naming organic compounds
 • ethene • structural isomers

Objective

Build the skills to answer exam questions on **naming organic compounds**

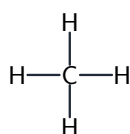
– using the ending (family) and the stem (number of carbons).

You must be able to:

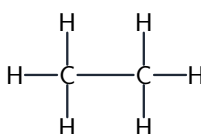
- use the ending to identify the family (-ane, -ene, -ol, -oic acid)
- use the stem for the number of carbons (meth-, eth-, prop-, but-)
- name simple compounds and use position numbers

1 Key knowledge and worked examples

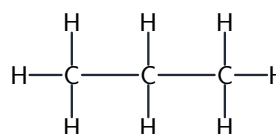
■ Stems and endings



methane
CH₄



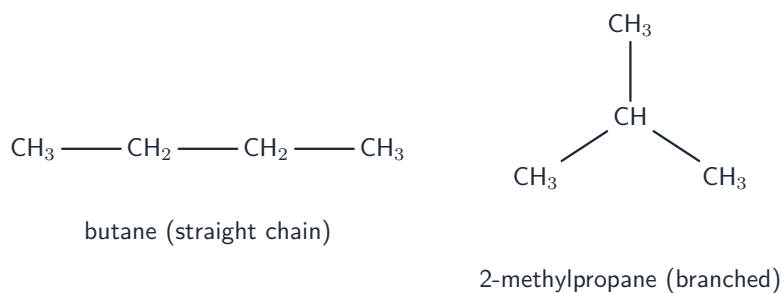
ethane
C₂H₆



propane
C₃H₈

each step adds a CH₂ unit general formula C_nH_{2n+2}

Stem = carbons (meth-1, eth-2, prop-3, but-4); ending = family



both have the formula C_4H_{10} : same formula,
different structure (structural isomers)

Naming distinguishes structural isomers

Ending	Family
-ane	alkane
-ene	alkene
-ol	alcohol
-oic acid	carboxylic acid

2 Practice

2.1 State the family of a compound whose name ends in -ol. [1]

2.2 State how many carbon atoms 'prop-' means. [1]

3 Exam-style questions

3.1 Which compound is an alkene? [1]

- ☐

A ethane

B ethene

C ethanol

D ethanoic acid

3.2 Name each compound from its description:

[3]

(a) a 2-carbon alcohol

(b) a 1-carbon alkane

(c) a 2-carbon carboxylic acid

3.3 Explain why both but-1-ene and but-2-ene need a number in the name.

[2]

Solutions

Each answer shows the steps, then the **result**.

2.1

- names ending in -ol are **alcohols**

2.2

- prop-** means **three** carbon atoms

3.1 B

- the ending **-ene** shows **ethene** is an alkene
- A is an alkane; C an alcohol; D a carboxylic acid

3.2

(a)

- a 2-carbon alcohol is **ethanol**

(b)

- a 1-carbon alkane is **methane**

(c)

- a 2-carbon carboxylic acid is **ethanoic acid**

3.3

- the number shows the **position of the C=C**
- the double bond can be in **different places**, giving different compounds