

11.2 Naming organic compounds

Name: _____ Class: _____ Date: _____

Total: 8 marks

KEY WORDS ethanoic acid 乙酸 • ethanol 乙醇 • naming organic compounds 有机物命名
• ethene 乙烯 • structural isomers 同分异构体

Objective

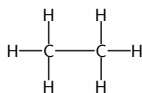
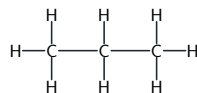
Build the skills to answer exam questions on **naming organic compounds** 有机物命名 — using the ending (family) and the stem (number of carbons).

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

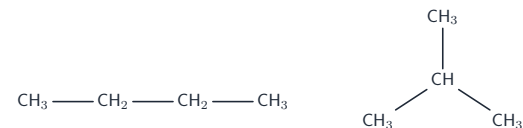
1 Worked examples

■ Stems and endings

methane
CH₄ethane
C₂H₆propane
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



butane (straight chain)

2-methylpropane (branched)

both have the formula C₄H₁₀: 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

2.1 an alcohol.

2.2 three.

3.1 B. The ending -ene shows ethene is an alkene.

3.2 (a) ethanol

(b) methane

(c) ethanoic acid.

3.3 the number shows the position of the C=C double bond; the double bond can be in different places along the chain, giving different compounds.