

Properties and Uses of Crude Oil

Q1 Crude oil is a mixture of **hydrocarbons**. These **hydrocarbons** are mostly **alkanes**.

a) Draw the structures of the first three alkanes and name each alkane you have drawn.

1.

2.

3.

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b) Which of these alkanes would you expect to have the highest boiling point?

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Q2 There are some basic **trends** in the way that **alkanes** behave. Circle the correct words to complete these sentences.

- a) The longer the alkane molecule the **more** / **less** viscous (gloopy) it is.
 b) The shorter the alkane molecule the **lower** / **higher** its boiling point.
 c) The shorter the alkane molecule the **more** / **less** flammable it is.

Q3 a) What is the **general** formula for **alkanes**?

If you can't remember it you can work it out by looking at the diagrams you have drawn at the top of the page.

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b) **Eicosane** is a hydrocarbon that can be used to make candles. Each molecule of eicosane contains **20 carbon** atoms. What is the **chemical formula** for eicosane?

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Q4 Each hydrocarbon molecule in engine oil has a **long** string of carbon atoms.

a) Explain why this type of oil is good for using as a **lubricant** in an engine.

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b) Engines get very **hot** when they are in use. Why would oil molecules with short carbon chains be unsuitable for use as lubricants?

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