Chestnut Grove Academy

Chemistry

7. Organic Chemistry

Revisiting Booklet

Name:

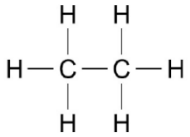
Crude oil, hydrocarbons and alkanes

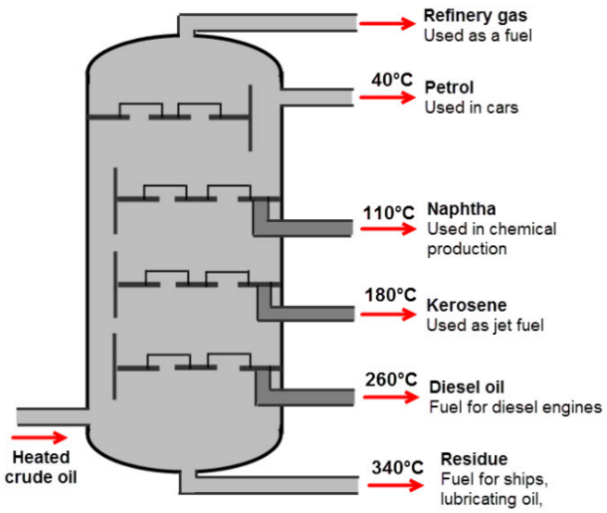
What is crude oil and where do we find it?

How is crude oil made?

What is the general formula for alkanes?

Complete this table

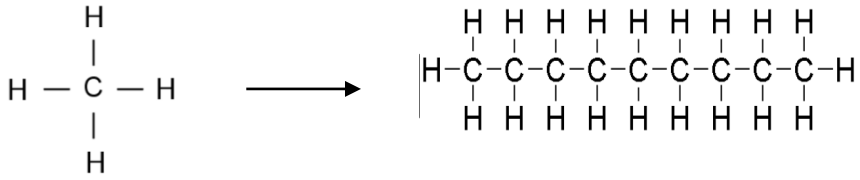
Name	Formula	Drawing of structure
Methane		
Ethane		
Propane		
Butane		



What method can we use to separate out the hydrocarbons in crude oil ?

Describe how this method works to separate out different hydrocarbons in terms of evaporation and condensation.

How does the **boiling point** change as you increase the molecular size?

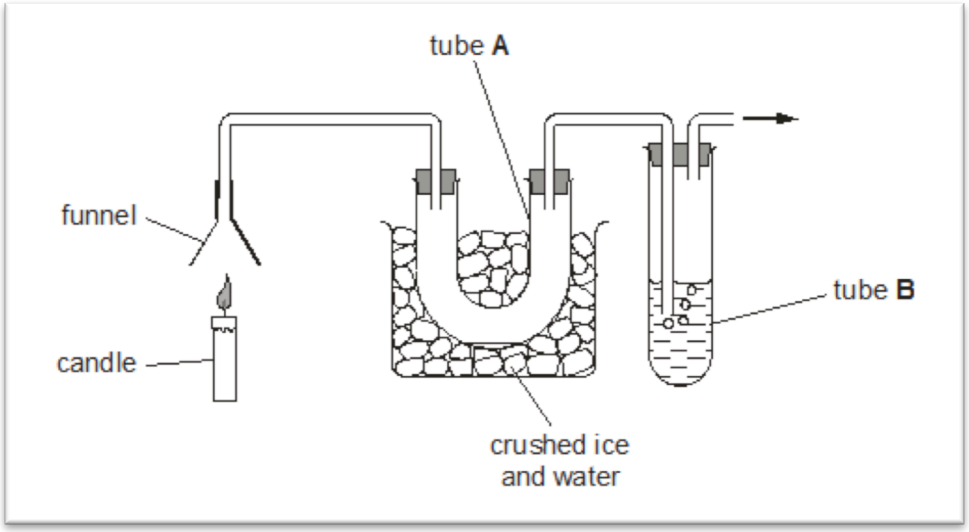


HT: Explain why..

How does **viscosity** change as you increase the molecular size?

How does the **flammability** change as you increase the molecular size?

Burning Hydrocarbon Fuels



What forms in tube A?

……

What happens to the limewater in tube B?

……

……

……

……

Complete the equation for the complete combustion of ethane

Ethane + Oxygen → _____ + _____

Write the word equations for the complete combustion of...

1. Methane

2. Propane

3. Butane

HT : Balance the symbol equation for the combustion of ethane

$$C_3H_6 + ...O_2 \rightarrow .....H_2O + ...CO_2$$

HT: Now write the balanced symbol equation for the complete combustion of Methane

_____

When there is not enough oxygen available during combustion another product is formed.

What is this product?_____

Write a word equation for the incomplete combustion of ethane

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Why is this product harmful?

Cracking hydrocarbons

What is cracking?

What are the 2 conditions for catalytic cracking?

1. _____
2. _____

What are the 2 conditions for steam cracking?

1. _____
2. _____

What are the products of cracking?

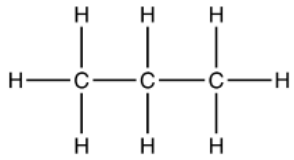
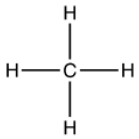
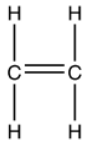
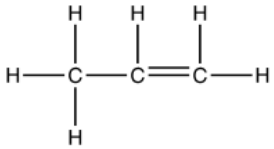
What are alkenes?

What is the test for alkenes?

I would add……..

If an alkene was present it would turn……..

Tick the correct box to show if the compound is an alkene or an alkane

	Alkane	Alkene
		
		
		
		

Why does cracking need to be carried out? What are alkenes used for?

Complete the cracking equations

$C_{16}H_{34} \rightarrow$ _____ $C_2H_4 + C_8H_{18}$

$C_{12}H_{26} \longrightarrow 2\ C_2H_4 +$ _____

$C_{10}H_{22}$ (l) $\rightarrow$ _____ (l) + C_2H_4 (g)
decane

$C_{20}H_{42} \rightarrow C_{12}H_{26} +$ _____