

Paper 2

Chapter 7 — Organic Chemistry

Crude Oil

Crude oil is a (renewable/ infinite/finite) resource found in rocks.

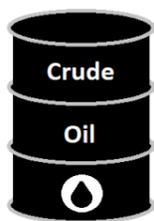
Crude oil is the remains of plants and animals buried in mud (hundreds/ thousands/millions) of years ago.

Most of the biomass that forms crude oil comes from (plankton/trees/biofuel).

Crude oil is a mixture of (two/a few/ very many) compounds.

Most of the compounds in crude oil are _____ which are made from _____ and _____ atoms only.

Most of the compounds in crude oil are (alkanes/alkenes/alcohols/esters).



Fractional Distillation

Crude oil is a mixture of many different _____.

Fractional Distillation separates the hydrocarbons into groups called _____.

Each fraction will have hydrocarbon molecules with a similar number of _____.

The fractions are then processed for use by the _____ industry.

Petrol, Diesel Oil, Kerosene, Heavy Fuel Oil and Liquefied Petroleum Gases are all produced by fractional distillation of _____ and can be used as _____.

Solve the anagrams to get 4 useful materials produced by the petrochemical industry.

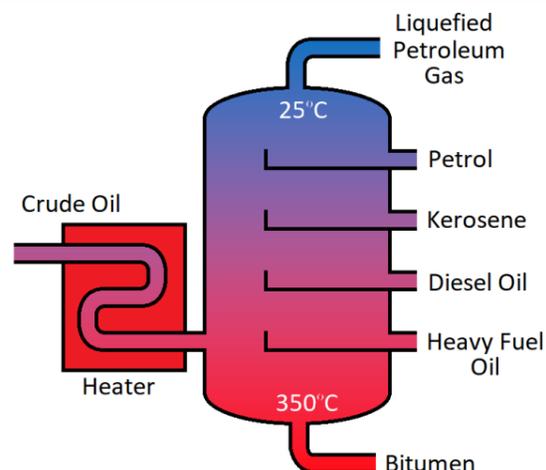
- 1.) VONTLESS 2.) BLANTURICS 3.) MOLYREPS 4.) GETDENTERS

What changes of state happen to the hydrocarbon molecules as they pass through...

- a.) ...the heater? b.) ...the fractionating tower?

Why is kerosene not collected...

- a.) ...at a higher point in the fractionating tower?
b.) ... at a lower point in the fractionating tower?



Alkanes

What is the general formula for an alkane?

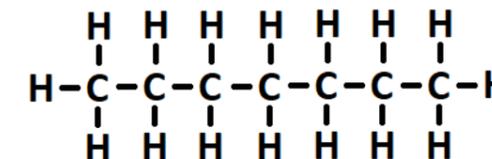
What is the formula for the 7th Alkane?

How many double bonds do alkanes contain?

Name the first four alkanes.

Complete that table on alkanes

Name				
Number of Carbon Atoms	1	2	3	4
Number of Hydrogen Atoms				
Formula				
Displayed Structure				



Properties of Hydrocarbons

The boiling point, viscosity and flammability of hydrocarbons depends on the _____ of their _____.

Hydrocarbons with larger molecules have _____ boiling points (less likely to be _____ at room temperature).

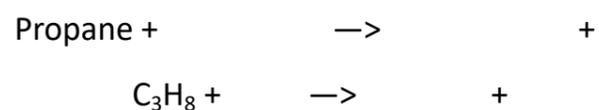
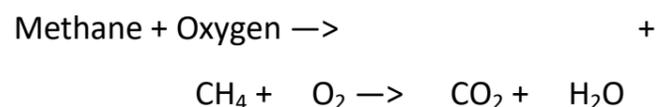
Hydrocarbons with larger molecules have _____ viscosity (they are _____ runny).

Hydrocarbons with larger molecules have _____ flammability (_____ to set on fire).

Hydrocarbons are used as fuels because they _____ when burnt.

The complete combustion of hydrocarbons produces _____ and _____.

Write word and balanced symbol equations for the complete combustion of following hydrocarbons.



Cracking

Long Hydrocarbons can be cracked to make _____ molecules that are more desirable as _____ or for making useful _____.

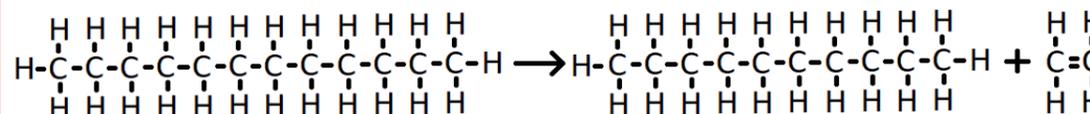
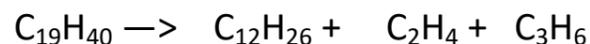
Name the two main methods for cracking and fill in the conditions for each method

Cracking	Cracking
Heat until the alkane _____	Heat until the alkane _____
Pass them over a _____ catalyst	Mix with _____

When large alkane molecules are cracked they will produce a _____ alkane molecules and hydrocarbon molecules with a double bonds called _____.

Shorter alkane molecules are in high demand for fuels as they are more _____ than longer alkanes and burn with a _____ flame.

Balance the following cracking equations.



Alkenes

Alkenes are (more/less) reactive than alkanes

_____ can be used as a test for alkenes.

Label or colour the colour change when bromine water reacts with an alkene.

Draw 2 lines to connect the correct words

Alkane

Saturated

Alkene

Unsaturated

The difference between alkanes and alkenes is that alkenes have a _____.

Why is an alkene with 1 carbon atom impossible?

Alkenes can be used to produce _____.

Circle the alkenes

