

IGCSE Chemistry (9-1) Specification 4(b)

(b) Crude oil

Students should:

- 4.7 know that crude oil is a mixture of hydrocarbons
- 4.8 describe how the industrial process of fractional distillation separates crude oil into fractions
- 4.9 know the names and uses of the main fractions obtained from crude oil: refinery gases, gasoline, kerosene, diesel, fuel oil and bitumen
- 4.10 know the trend in colour, boiling point and viscosity of the main fractions
- 4.11 know that a fuel is a substance that, when burned, releases heat energy
- 4.12 know the possible products of complete and incomplete combustion of hydrocarbons with oxygen in the air
- 4.13 understand why carbon monoxide is poisonous, in terms of its effect on the capacity of blood to transport oxygen
references to haemoglobin are not required
- 4.14 know that, in car engines, the temperature reached is high enough to allow nitrogen and oxygen from air to react, forming oxides of nitrogen
- 4.15 explain how the combustion of some impurities in hydrocarbon fuels results in the formation of sulfur dioxide
- 4.16 understand how sulfur dioxide and oxides of nitrogen contribute to acid rain
- 4.17 describe how long-chain alkanes are converted to alkenes and shorter-chain alkanes by catalytic cracking (using silica or alumina as the catalyst and a temperature in the range of 600-700°C)
- 4.18 explain why cracking is necessary, in terms of the balance between supply and demand for different fractions