AQA GCSE Chemistry

Topic 9: Chemistry of the atmosphere

Common atmospheric pollutants and their sources

Notes

(Content in bold is for Higher Tier only)

Atmospheric pollutants from fuels

- Combustion of fuels is a major source of atmospheric pollutants
- Most fuels (including coal) contain carbon and/or hydrogen and may also contain some sulfur.
- The gases released into the atmosphere when a fuel burns may include carbon dioxide, water (vapour), carbon monoxide, and oxides of nitrogen (which are formed at high temperatures). Solid particles and unburned hydrocarbons may also be released, forming particulates in the atmosphere
- If there's not enough oxygen, some of the fuel doesn't burn – this is partial/incomplete combustion. Here, solid particles of soot (carbon), carbon monoxide and unburnt fuel are released.
- The combustion of hydrocarbons releases energy. During combustion, the carbon and hydrogen in the fuels are oxidised to form carbon dioxide and water

Properties and effects of atmospheric pollutants

- Carbon monoxide: toxic gas which is colourless and odourless so not easy to detect
- Sulfur dioxide and oxides of nitrogen: cause acid rain and respiratory problems in humans.
- Particulates: cause global dimming and human health problems