

N5: Energy From Fuels

Definitions

Exothermic:

Endothermic:

Combustion:

Fuels we focus on in N5 chemistry:

_____ and _____

During complete combustion (_____

_____ of _____) they will both produce

_____ and _____.

During incomplete combustion (_____
_____ of _____) they will produce
_____ (soot) and _____
_____.

Complete combustion equations

When writing a balanced combustion equation remember:

-
-
-

E.g. methane + oxygen \rightarrow carbon dioxide + water

Ethane + oxygen \rightarrow carbon dioxide + water

Ethanol + oxygen \rightarrow carbon dioxide + water

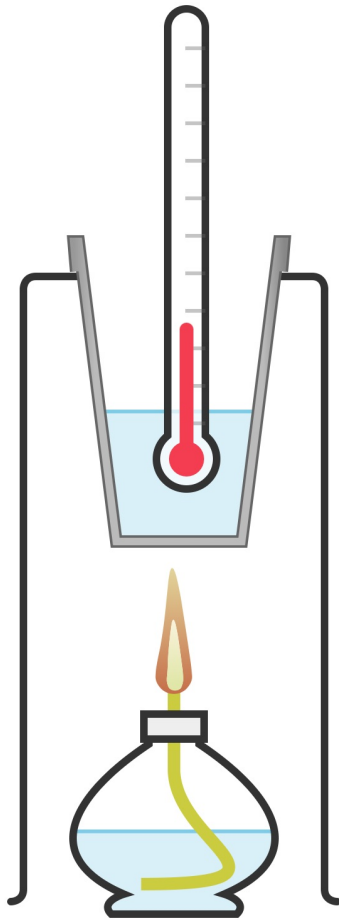


Propane + oxygen \rightarrow carbon dioxide + water

Butanol + oxygen \rightarrow carbon dioxide + water

Hexane + oxygen \rightarrow carbon dioxide + water

Pentanol + oxygen \rightarrow carbon dioxide + water



$$E = c m \Delta T$$

Calculate the heat energy released when 0.7 g of petrol is burnt to raise the temperature of 50ml of water from 19.4°C to 49.9°C.

Ethanol was used to heat 250 g of water. The energy change was 28.5 kJ. The initial temperature of the water was 24.4°C. Calculate the final temperature.



Propan-1-ol was burned to raise the temperature of 100ml of water from 18°C to 23.2°C. Calculate the energy released.

1.1 kJ of energy was released when 0.15g of a fuel was burned. This heated 30 g of a liquid from 12 °C to 27 °C. Calculate the specific heat capacity of the liquid.

149kJ of energy was used to heat 1200 g of olive oil. The specific heat capacity of olive oil is 1.97 kJ kg⁻¹ °C⁻¹. Calculate the final temperature of the olive oil if the initial temperature was 15 °C.