

Combustion



When a substance burns, it is said to **combust**.

Combustion is a rapid reaction between a substance and oxygen that releases heat and light energy.



A fuel is a substance that reacts with oxygen (combusts) to release useful energy.

Many fractions obtained from crude oil are used as fuels because they contain hydrocarbons that burn easily and release a large amount of useful energy.



Complete combustion of hydrocarbons

Plenty of air is needed to provide enough oxygen for a hydrocarbon fuel to burn completely.

The blue flame of a gas burner, or a Bunsen burner, is an example of **complete** combustion of a hydrocarbon (in this case, natural gas).



What are the products of the complete combustion of a hydrocarbon?



Complete combustion of propane

Propane is a hydrocarbon used in camping gas.
What is the equation for its combustion?

propane + oxygen → carbon dioxide + water



How would the equations change if butane was used?

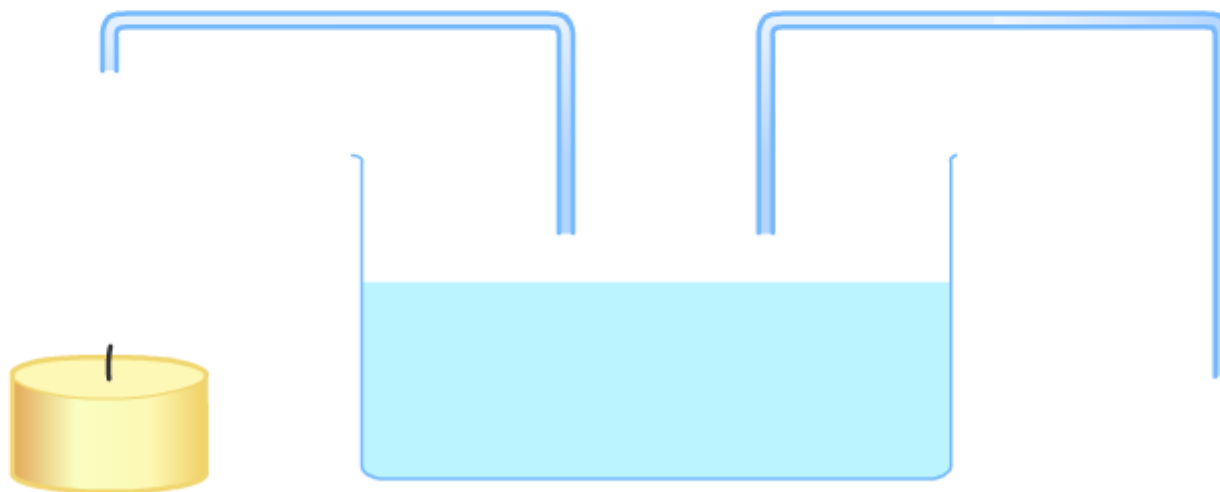




What are the products of combustion?

How can you see the products of combustion?

Click "**start**" to find out.



start



Incomplete combustion of hydrocarbons

If there is a shortage of air (oxygen), **incomplete** combustion of hydrocarbons takes place.

Instead of producing just carbon dioxide and water, incomplete combustion also produces **carbon monoxide** and/or **carbon** (soot). It also releases less energy than complete combustion.



Carbon monoxide is a poisonous gas because it reduces the ability of blood to carry oxygen.

