WJEC GCSE Flashcards

Component 2: Specific Practical 4
Identifying Unknown Substances

How is a flame test carried out?

How is a flame test carried out?

A sample of the substance being tested should be collected onto a nichrome wire loop.

This should then be held in a blue bunsen flame at the tip of the inner blue flame (the hottest part).

The fame will then change colour depending on the substance present.

What colour of flame is produced when Lithium (Li^+) is present?

What colour of flame is produced when Lithium (Li^+) is present?

A crimson-red flame.

What colour of flame is produced when Sodium (Na^+) is present?

What colour of flame is produced when Sodium (Na^+) is present?

A yellow flame.

What colour of flame is produced when Potassium (K^+) is present?

What colour of flame is produced when Potassium (K^+) is present?

A lilac flame.

What colour of flame is produced when Calcium (Ca^{2+}) is present?

What colour of flame is produced when Calcium (Ca^{2+}) is present?

An orange-red flame.

What colour of flame is produced when Copper(II) (Cu^{2+}) is present?

What colour of flame is produced when Copper(II) (Cu^{2+}) is present?

A green flame.

Outline how to test for Carbonate (CO_3^{2-}) ions, and the result if present.

Outline how to test for Carbonate (CO_3^{2-}) ions, and the result if present.

These ions are tested for using acidified limewater.

When added, the carbonate ions will produce bubbles of gas.

This gas is hydrogen, meaning the limewater will also go cloudy.

Outline how to test for Sulphate (SO_4^{2-}) ions, and the result if present.

Outline how to test for Sulphate (SO_4^{2-}) ions, and the result if present.

These ions are tested for using acidified barium chloride solution.

When added, a white precipitate will form.

This precipitate is barium sulphate, an insoluble salt.

Outline how to test for the Halide ions (Cl^-, Br^-, I^-), and the results if present.

Outline how to test for Carbonate (CO_3^{2-}) ions, and the result if present.

These ions are tested for using acidified silver nitrate solution.

When added, precipitates of varying colours are produced.

Cl^- = chloride = white precipitate
Br^- = bromide = cream precipitate
I^- = iodide = yellow precipitate

Why are the mixtures acidified before the test is carried out?

Why are the mixtures acidified before the test is carried out?

The acid will react with any traces of other substances present in the solution.

This prevents them reacting with the testing reagent and preventing a false result which could confuse the identification of the substance present.