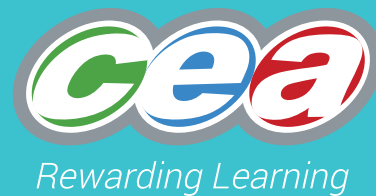


GCSE



CCEA GCSE TEACHER GUIDANCE
**Double Award Science
Practical Manual**

Unit 7: Practical Skills

C2: Identify the ions in an ionic compound using flame tests

Identify the ions in an ionic compound using flame tests

In this experiment you will carry out several tests to identify the cations and anions in ionic compounds.

Testing for Cations

There are 2 types of tests that can be used:-

Flame Tests

Apparatus required

Ionic compounds to test:-

Sodium chloride, calcium chloride, lithium chloride, potassium chloride, copper (II) sulfate (1 g per salt per group)

Concentrated hydrochloric acid (teacher to control and dispense small quantities or 2 mol/dm³ hydrochloric acid may be used as an alternative)

Bunsen burner, heatproof mat

Nichrome wire (in holder)

Safety

Follow safety advice given by teacher

Method

1. Take a piece of nichrome wire with a loop at one end.
2. Dip the loop in the concentrated hydrochloric acid and place in the hot blue flame of the Bunsen burner.
3. Repeat until the flame is no longer coloured, i.e. impurities are removed.
4. Dip the clean nichrome wire in concentrated hydrochloric acid and the wire onto the solid ionic compound which is sitting in a watch glass.
5. Hold the loop with the solid ionic compound in the hottest part of the flame and record the characteristic colour.
6. Repeat for all the solid ionic compounds available, cleaning the wire loop each time.

Table of Results

Metal Ion	Observed colour	Actual colour
Sodium		Yellow/orange
Calcium		Brick red
Potassium		Lilac
Copper		Green-blue/Blue-green
Lithium		Crimson