

Topic	Tests for ions	Level	Key Stage 3 and GCSE (or any other course for students aged 11-16)
Outcomes	1. To state the reagents and observations for the following ion tests: <ul style="list-style-type: none">• halides• sulphate• carbonate• ammonium• copper (II)• iron (II)• iron (III)• Na⁺, K⁺, Ca²⁺, Li⁺		

Instructions for teachers

1. Print off each slide
2. Fold along the dotted line and stick both halves together
3. Cut along the solid lines to produce cards
4. Students play in pairs, having to give the formula of the ion or compound from the test
5. To start, place the cards on the table and then each student has to choose a card and give the correct answer written on the back
6. Students keep the card if they get it correct. The winner is the student who has the most cards after 3 minutes

Burns with
an orange
flame

Burns with
a lilac
flame

Burns with
a brick red
flame



Burns with
a crimson-
red flame



Forms a
blue
precipitate
with NaOH



Forms a
green
precipitate
with NaOH



Produces a white precipitate with BaCl_2

Produces CO_2 when HCl is added

Forms a reddish brown precipitate with NaOH

SO_4^{2-}
sulphate

CO_3^{2-}
carbonate

Fe^{3+}
Iron (III)

Produces a
white
precipitate
with
 AgNO_3

Produces a
cream
precipitate
with
 AgNO_3

Produces a
yellow
precipitate
with
 AgNO_3

Cl^-
chloride

Br^-
bromide

I^-
iodide

Produces a blue precipitate with NaOH. When HCl is added bubbles are produced that turn limewater cloudy.

Produces a lilac flame. When barium chloride is added a white precipitate is observed.

Produces a blue precipitate with NaOH. When silver nitrate is added a white precipitate is observed.

CuCO_3
copper (II)
carbonate

K_2SO_4
potassium
sulphate

CuCl_2
copper (II)
chloride

Produces a brick red flame. When HCl is added bubbles are produced that turn limewater cloudy.

Produces an orange flame. When silver nitrate is added a white precipitate is observed.

Produces a green precipitate with NaOH. When BaCl_2 is added a white precipitate is observed.

CaCO_3
calcium carbonate

NaCl
sodium chloride

FeSO_4
iron (II) sulphate

When warmed with NaOH a gas is produced that turns damp red litmus paper blue.

ammonium



Produces a crimson-red flame. When silver nitrate is added a cream precipitate is observed.

lithium bromide



Produces a green precipitate with NaOH. When BaCl_2 is added a white precipitate is observed.

iron (II) sulphate

